

THIRD EDITION



Teaching and Learning THROUGH MULTIPLE INTELLIGENCES

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2004



Boston New York San Francisco
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Introduction

MANY KINDS OF INTELLIGENCE

A Word about the Third Edition

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For the third edition of our book, we have included new content based on the evolving understanding of Howard Gardner's Theory of Multiple Intelligences. In the pages that follow, the reader will find updated resources in each chapter, new technology options, information for integrating MI theory into standards-based instruction, and student achievement data from MI-based schools. As with previous editions, however, the goal of this book remains constant. We seek to provide educators with multiple ways of teaching so that students and teachers experience success and enjoyment in learning.

In what ways are your students smart?

Do you have students who create beautiful pieces of visual art? Are others gifted in sports, making complex physical movements appear graceful and effortless? Some may play musical instruments so well that listening touches chords within. A few may thrill to the challenge of mathematical precision. Some may have a special understanding of the natural world while others may love writing and have already learned the excitement of seeing their stories or poems in print. Several may be natural leaders, offering positive role models and

trusted guidance to their classmates. And a few may possess penetrating personal insights into who they are and what they stand for, while pursuing important life goals. Among the students mentioned, who would be the most intelligent? The question is impossible to answer because these examples represent individuals with different intelligences. Each student is unique and all in distinct ways offer valuable contributions to human culture.

A Definition of Human Intelligence

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Dr. Howard Gardner, Professor of Education at Harvard University, has conducted substantial research on the development of human cognitive capacities. He has shed the common premise of intelligence theory which adheres to two fundamental assumptions: that cognition is unitary and that individuals can be adequately described as having a single, quantifiable intelligence. In his study of intellectual capacities, Gardner (1983) established criteria to measure whether a talent was actually an intelligence. Each intelligence must have a developmental feature, be observable in special populations such as prodigies or "savants," provide some evidence of localization in the brain, and support a symbolic or notational system.

While most people possess the full spectrum of intelligences, each reveals distinctive cognitive features. We possess varying amounts of the eight intelligences and combine and use them in highly personal ways. Restricting educational programs to a preponderance of linguistic and mathematical intelligences minimizes the importance of other forms of knowing. Thus many students who fail to demonstrate the traditional academic intelligences are held in low esteem and their strengths may remain unrealized and lost to both the school and society at large.

Gardner's research revealed a wider family of human intelligences than was previously believed, and offered a refreshingly pragmatic definition of intelligence. Instead of viewing "smartness" in terms of a score on a standardized test, Gardner (1983) defined intelligence as:

- The ability to solve problems that one encounters in real life.
- The ability to generate new problems to solve.
- The ability to make something or offer a service that is valued within one's culture.

This definition of intelligence underscores the multicultural nature of Gardner's theory.

A Description of the Eight Intelligences

In his 1983 book, *Frames of Mind*, Gardner presented his Theory of Multiple Intelligences that reinforces his cross-cultural perspective of human cognition. The intelligences are languages that all people speak and are influenced, in part, by the cultures in which we are born. They are tools for learning, problem-solving, and creating throughout life. A brief description of Gardner's eight intelligences follows.



Linguistic intelligence consists of the ability to think in words and to use language to express and appreciate complex meanings. Authors, poets, journalists, speakers, and newscasters exhibit high degrees of linguistic intelligence.



Logical-mathematical intelligence makes it possible to calculate, quantify, consider propositions and hypotheses, and carry out complex mathematical operations. Scientists, accountants, engineers, and computer programmers all demonstrate this intelligence.



Spatial intelligence instills the capacity to think in three-dimensional ways as do sailors, pilots, sculptors, painters, and architects. It enables one to perceive external and internal imagery, to recreate, transform, or modify images, to navigate oneself and objects through space, and to produce or decode graphic information.



Bodily-kinesthetic intelligence enables one to manipulate objects and fine-tune physical skills. It is evident in athletes, dancers, surgeons, and craftspeople. In Western societies, physical skills are not as highly valued as cognitive ones, and yet elsewhere the ability to use one's body is a necessity for survival and an important feature of many prestigious roles.



Musical intelligence is evident in individuals who possess a sensitivity to pitch, melody, rhythm, and tone. Those demonstrating this intelligence include composers, conductors, musicians, critics, and instrument makers, as well as sensitive listeners.



Interpersonal intelligence is the capacity to understand and interact effectively with others. It is evident in successful teachers, social workers, actors, or politicians. Just as Western culture has recently begun to recognize the connection between mind and body, so too has it to come to value the importance of proficiency in interpersonal behavior.



Intrapersonal intelligence refers to the ability to construct an accurate perception of oneself and to use such knowledge in planning and directing one's life. Some individuals with strong intrapersonal intelligence specialize as theologians, psychologists, and philosophers.



Naturalist intelligence consists of observing patterns in nature, identifying and classifying objects, and understanding natural and human-made systems. Skilled naturalists include farmers, botanists, hunters, ecologists, and landscapers.

Gardner is careful to explain that intelligence should not be limited to the ones he has identified. In his 1999 book, entitled *Intelligence Reframed*, Gardner considered potential new intelligences. These included existential, moral, and spiritual candidates. Existential intelligence entails the ability to contemplate the meaning of life and death, but Gardner has been unable to locate its origin in the brain and so it is premature to be considered an intelligence. Moral intelligence involves making of value judgments and because intelligence is value-free Gardner chooses not to credit this capacity as a full-blown intelligence. Similarly, spiritual intelligence enables us to grasp cosmic and transcendent truths but ultimately it depends on affective capacities. He believes that the eight, however, provide a far more accurate picture of human capacities than do previous unitary theories. Contrary to the small range of abilities that many standard IQ tests measure, Gardner's theory offers an expanded image of what it means to be human. He also notes that each intelligence contains several sub-intelligences. For example, there are sub-intelligences within the domain of music that include playing music, singing, writing musical scores, conducting, critiquing, and appreciating music. Each of the seven other intelligences also contain numerous facets.

Another aspect of the Multiple Intelligences is that they may be conceptualized in three broad categories. Four of the eight, spatial, logical-mathematical, bodily-kinesthetic, and naturalist, may be viewed as "object-related" forms of intelligence. These capacities are controlled and shaped by the objects that individuals encounter in their environments. On the other hand, the "object-free" intelligences, consisting of verbal-linguistic and musical, are not shaped by the physical world but are dependent on language and musical systems. The third category consists of the "person-related" intelligences with inter- and intrapersonal intelligences reflecting a powerful set of counterbalances.

Each intelligence appears to have its own developmental sequence, emerging and blossoming at different times in life. Musical intelligence is the earliest form of human giftedness to emerge; it is a mystery why this is so. Gardner suggests that excelling at music as a child may be conditioned by the fact that this intelligence is not contingent upon accruing life experience. On the other hand, the personal intelligences require extensive interaction with and feedback from others before becoming well developed.

Gardner believes that since each intelligence can be used for good or ill purposes, all eight are inherently value-free. Goebbels and Gandhi both had strong interpersonal intelligence but applied it in dramatically different ways. How individuals go about using their intelligences within society is a moral question of crucial importance.

It is evident that creativity can be expressed through all the intelligences. Gardner notes, however, that most people are creative within a specific domain. For example, although Einstein was gifted mathematically and scientifically, he did not exhibit equal genius linguistically, kinesthetically, or interpersonally. Most people appear to excel within one or two intelligences.

This book is about how to create open systems of education to make it possible for the human mind—which can be the most open of systems—to flourish. Not all human beings will become great artists, musicians, or writers, but every human life will be enriched through developing many kinds of intelligence to the greatest extent possible. When individuals have opportunities to learn through their strengths, unexpected and positive cognitive, emotional, social, and even physical changes can appear.

About the Authors

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The authors of this book have shared with teachers exciting breakthroughs in learning students experience when instructional strategies engage the eight intelligences. They themselves have been classroom teachers at all levels from elementary through university. Many experiences from their work are interwoven throughout the text as illustrations of what can happen when the repertoire of teaching strategies is expanded and the opportunities for learning in different ways are increased. Brief synopses of the authors' work follow.

As an elementary and secondary public school teacher for 10 years, Linda Campbell, Ph.D., won three teacher of the year awards. Linda began serving as a professor of education at Antioch University Seattle in 1989. There, she has designed and administered teacher education programs for urban and northwest tribal communities. The recipient of a Gates Foundation grant in 2002, Linda currently develops integrated high school and college programs for underserved youth, with a special emphasis on culturally responsive programs for Native American students. She has authored *Multiple Intelligences and Student Achievement* published by ASCD in 1999, and *Mindful Learning: 101 Proven Strategies for Teacher and Student Success* published by Corwin Press in 2002. Linda has won numerous academic and community service awards.

When he taught a multi-age classroom of third, fourth, and fifth grade students, Bruce Campbell used MI theory as the organizing principle. He established eight learning centers, each devoted to a different intelligence. The students spent two-thirds of their school day rotating through the cen-

ters and the final third doing project-based work. Their achievement results were impressive, and, as a result, Bruce's classroom was featured in a video funded by the U.S. Department of Education and in *USA Today* and newspapers throughout the country. More recently, Bruce worked as a curriculum specialist for the Marysville School district in Washington State. He consults nationally and internationally and authored *The Multiple Intelligences Handbook: Lesson Plans and More*.

Dee Dickinson is CEO and founder of New Horizons for Learning, an international education network based in Seattle, Washington, and on the Internet at www.newhorizons.org. She has taught on all levels from elementary through university, has produced several series for educational television, and nine international conferences on education. Formerly, she was director of the Seattle Creative Activities Center, founder of the Northwest Art Project, was commissioned by IBM to write the report *Positive Trends in Learning*, and edited the book *Creating the Future*. Dee serves on advisory boards for numerous organizations, including the University of Washington's College of Education, KCTS TV, the Learning Forum, the National Learning Foundation, and ChildResearch Net, and is a Fellow of the George Lucas Educational Foundation and the International Corporate Learning Association.

A Multiple Intelligences Inventory

Before surveying the strategies in this book, it may be helpful to self-assess your use of each of the eight intelligences. Everyone relies on one or more intelligences for successful living and working. Heredity, the environment, and culture all influence our intelligence preferences. It is also interesting to note that as teachers, we likely rely on one or more intelligences in our instructional approaches. Such inclinations may be determined by our individual preferences, our training as educators, and the "cultural norms" of our schools.

The following inventory enables readers to identify their strengths and the intelligences they seldom use. It is organized in a developmental fashion ranging from novice level expression of an intelligence to that of the inventor level. Before completing the inventory, reflect on each intelligence one at a time. Then, log your developmental level of that capacity on the grid. As you do so, you may notice that the task is easier said than done. This is because each intelligence has numerous sub-components. For example, some people may express at the expert level in verbal-linguistic intelligence if they are skilled speakers. Others may be experts because of their writing ability. As you plot the development of each intelligence, you may want to note which sub-component you have in mind. Proceed through all eight intelligences until you have created one snapshot of your cognitive profile.

DEVELOPMENTAL SELF-ASSESSMENT OF MULTIPLE INTELLIGENCES

	VERBAL-LINGUISTIC	LOGICAL-MATHEMATICAL	BODILY-KINESTHETIC	VISUAL-SPATIAL	MUSICAL-RHYTHMIC	INTERPERSONAL	INTRAPERSONAL	NATURALIST INTELLIGENCE
INVENTOR Invents new forms of communication through the intelligence; identifies new aspects of the intelligence or creates original works.								
EXPERT Demonstrates mastery of the concepts and practices of the intelligence in professional or avocational activities. May be viewed as a specialist.								
PRACTITIONER Develops proficiency in the intelligence's symbol system. Understands concepts and skills of a discipline and applies such knowledge in many contexts. Can learn additional skills.								
APPRENTICE Perceives relationships between symbols and objects or events they represent. From role models or instruction, learns symbol system, concepts, and skills of the knowledge.								
NOVICE Learns about the intelligence through exploration of the environment, interaction with others. Observation, imitation, and experimentation instill knowledge and skills.								

After completing this brief assessment, reflect on the results. Are there differences between intelligences used in your personal and professional life? Are there other intelligences you would like to develop for classroom use? How were your areas of strength nurtured as a child and as an adult? How might you go about developing other intelligences of interest? Could you establish a timeline for such work? What kinds of intelligences do you perceive in your students? Which intelligences do you feel are most highly developed in teachers in general? Reflecting on such questions might deepen your awareness of your unique capacities and expand your appreciation for those gifted in other domains.

Intelligent Environments

Not only is it important for teachers to recognize the intelligence in our mind/body systems, it is also important to consider that it is possible to create positive environments in which to live and learn. The new field of research on “distributed cognitions” suggests that intelligence extends beyond individuals and is enhanced through interactions with other people, with books, and with the tools we use to think, learn, and problem-solve, such as pencils and paper, notebooks and journals, calculators and computers.

Take a moment to reflect on your classroom environment. How is it “smart?” Are there sufficient opportunities for students to interact with each other in pairs, small groups, and as a whole class? Are a variety of resources available, including books, magazines, trade publications, bulletin boards, art work, posters, computers, databases, and networks? Throughout this book you will find suggestions for creating environments that foster the development of all the intelligences.

It is well to remember that noted neurophysiologists such as Marian Diamond have discovered that the brain can change structurally and functionally in response to learning and experience—for better or worse. Throughout life we can continue to develop enhanced mental abilities in environments that are positive, nurturing, stimulating, and interactive.

What This Book Offers

Written for educators, this book offers practical classroom applications of the Theory of Multiple Intelligences. Philosophically, the authors maintain that students must have opportunities for the creative exploration of their individual interests and talents while also learning valued skills and concepts through multimodal means. Not all children exhibit the same intelligence profile, nor do they share the same interests. In an age of exploding information, none of us can learn everything; choices ultimately must be made about what and how we will learn. In making such choices, the students’ individual inclinations and interests should guide some of their curricular options.

The basic knowledge that many state standards claim all students should master in language arts, mathematics, history, and science does not need to be taught in the same manner for everyone. Frustration and academic failure can be reduced if teachers presented information in numerous ways, offering students multiple options for success. This book assists educators in acquiring “intelligence fair” methods of perceiving students and their talents, of designing curriculum and assessment approaches, and of nurturing individual capacities so that each student may experience academic success and the joy of pursuing an area of intrinsic interest.

An important distinction should be made among academic disciplines and intelligence. In his book, *Multiple Intelligences: The Theory in Practice*, Gardner (1993) explained that intelligence is biopsychological potential. This potential can be used and applied in multiple disciplines or domains. For example, musical performances often tap musical intelligence as well as bodily-kinesthetic and interpersonal processes. Rather than seeking to develop the intelligences for their own sake, it may be more worthwhile to use a variety of intellectual faculties to master each school's academic disciplines.

As you browse through the book, you will notice that each of the chapters on the eight intelligences is organized similarly: each begins with a

story of an individual who exemplifies a particular intelligence. This is followed by a definition of the intelligence, suggestions for enhancing the classroom environment, and numerous instructional strategies. The final three chapters are dedicated to curriculum and assessment issues and what has been learned from multiple intelligence school programs.

The authors offer this collection of practical applications of the Theory of Multiple Intelligences to reinforce the fine work that many teachers are already doing and to offer ideas that may be new to some. All of these suggestions are founded on the same goal: to free the learning potential and creative expression of every student in every classroom.