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| September 1997 | Volume **55** | Number **1**  **Teaching for Multiple Intelligences**    Pages 22-27 **Integrating Learning Styles and Multiple Intelligences***Harvey Silver, Richard Strong and Matthew Perini***What does it mean to express kinesthetic intelligence in an interpersonal way? Integrating styles and intelligences can help children learn in many ways—not just in the areas of their strengths.**In the 20th century, two great theories have been put forward in an attempt to interpret human differences and to design educational models around these differences. Learning-style theory has its roots in the psychoanalytic community; multiple intelligences theory is the fruit of cognitive science and reflects an effort to rethink the theory of measurable intelligence embodied in intelligence testing.Both, in fact, combine insights from biology, anthropology, psychology, medical case studies, and an examination of art and culture. But learning styles emphasize the different ways people think and feel as they solve problems, create products, and interact. The theory of multiple intelligences is an effort to understand how cultures and disciplines shape human potential. Though both theories claim that dominant ideologies of intelligence inhibit our understanding of human differences, learning styles are concerned with differences in the *process* of learning, whereas multiple intelligences center on the *content* and *products* of learning. Until now, neither theory has had much to do with the other.Howard Gardner (1993) spells out the difference between the theories this way:In MI theory, I begin with a human organism that responds (or fails to respond) to different kinds of *contents* in the world. . . . Those who speak of learning styles are searching for approaches that ought to characterize *all* contents (p. 45).We believe that the integration of learning styles and multiple intelligence theory may minimize their respective limitations and enhance their strengths, and we provide some practical suggestions for teachers to successfully integrate and apply learning styles and multiple intelligence theory in the classroom.Learning StylesLearning-style theory begins with Carl Jung (1927), who noted major differences in the way people perceived (sensation versus intuition), the way they made decisions (logical thinking versus imaginative feelings), and how active or reflective they were while interacting (extroversion versus introversion). Isabel Myers and Katherine Briggs (1977), who created the Myers-Briggs Type Indicator and founded the Association of Psychological Type, applied Jung's work and influenced a generation of researchers trying to understand specific differences in human learning. Key researchers in this area include Anthony Gregorc (1985), Kathleen Butler (1984), Bernice McCarthy (1982), and Harvey Silver and J. Robert Hanson (1995). Although learning-style theorists interpret the personality in various ways, nearly all models have two things in common:* *A focus on process.* Learning-style models tend to concern themselves with the process of learning: how individuals absorb information, think about information, and evaluate the results.
* *An emphasis on personality.* Learning-style theorists generally believe that learning is the result of a personal, individualized act of thought and feeling.

Most learning-style theorists have settled on four basic styles. Our own model, for instance, describes the following four styles:* *The Mastery style learner* absorbs information concretely; processes information sequentially, in a step-by-step manner; and judges the value of learning in terms of its clarity and practicality.
* *The Understanding style learner* focuses more on ideas and abstractions; learns through a process of questioning, reasoning, and testing; and evaluates learning by standards of logic and the use of evidence.
* *The Self-Expressive style learner* looks for images implied in learning; uses feelings and emotions to construct new ideas and products; and judges the learning process according to its originality, aesthetics, and capacity to surprise or delight.
* *The Interpersonal style learner*,1  like the Mastery learner, focuses on concrete, palpable information; prefers to learn socially; and judges learning in terms of its potential use in helping others.

Learning styles are not fixed throughout life, but develop as a person learns and grows. Our approximate breakdown of the percentages of people with strengths in each style is as follows: Mastery, 35 percent; Understanding, 18 percent; Self-Expressive, 12 percent; and Interpersonal, 35 percent (Silver and Strong 1997).Most learning-style advocates would agree that all individuals develop and practice a mixture of styles as they live and learn. Most people's styles flex and adapt to various contexts, though to differing degrees. In fact, most people seek a sense of wholeness by practicing all four styles to some degree. Educators should help students discover their unique profiles, as well as a balance of styles.Strengths and Limitations of a Learning-Style ModelThe following are some *strengths* of learning-style models:* They tend to focus on how different individuals process information across many content areas.
* They recognize the role of cognitive and affective processes in learning and, therefore, can significantly deepen our insights into issues related to motivation.
* They tend to emphasize thought as a vital component of learning, thereby avoiding reliance on basic and lower-level learning activities.

Learning-styles models have a couple of limitations. First, they may fail to recognize how styles vary in different content areas and disciplines.Second, these models are sometimes less sensitive than they should be to the effects of context on learning. Emerging from a tradition that viewed style as relatively permanent, many learning-style advocates advised altering learning environments to match or challenge a learner's style. Either way, learning-style models have largely left unanswered the question of how context and purpose affect learning.Multiple Intelligence TheoryFourteen years after the publication of *Frames of Mind* (Gardner 1983), the clarity and comprehensiveness of Howard Gardner's design continue to dazzle the educational community. Who could have expected that a reconsideration of the word *intelligence* would profoundly affect the way we see ourselves and our students?Gardner describes seven intelligences: linguistic, logical-mathematical, spatial, musical, bodily-kinesthetic, interpersonal, and intrapersonal.2  The distinctions among these intelligences are supported by studies in child development, cognitive skills under conditions of brain damage, psychometrics, changes in cognition across history and within different cultures, and psychological transfer and generalization.Thus, Gardner's model is backed by a rich research base that combines physiology, anthropology, and personal and cultural history. This theoretical depth is sadly lacking in most learning-style models. Moreover, Gardner's seven intelligences are not abstract concepts, but are recognizable through common life experiences. We all intuitively understand the difference between musical and linguistic, or spatial and mathematical intelligences, for example. We all show different levels of aptitude in various content areas. In all cases, we know that no individual is universally intelligent; certain fields of knowledge engage or elude everyone. Gardner has taken this intuitive knowledge of human experience and shown us in a lucid, persuasive, and well-researched manner how it is true.Yet, there are two gaps in multiple intelligence theory that limit its application to learning. First, the theory has grown out of cognitive science—a discipline that has not yet asked itself why we have a field called cognitive science, but not one called affective science. Learning-style theory, on the other hand, has deep roots in psychoanalysis. Learning-style theorists, therefore, give psychological *affect* and individual personality central roles in understanding differences in learning.Multiple intelligence theory looks where style does not: It focuses on the content of learning and its relation to the disciplines. Such a focus, however, means that it does not deal with the individualized process of learning. This is the second limitation of multiple intelligence theory, and it becomes clear if we consider variations within a particular intelligence.Are conductors, performers, composers, and musical critics all using the same musical intelligence? What of the differing linguistic intelligences of a master of free verse like William Carlos Williams and a giant of literary criticism like Harold Bloom? How similar are the bodily-kinesthetic intelligences of dancers Martha Graham and Gene Kelly or football players Emmitt Smith and golfer Tiger Woods? How can we explain the difference in the spatial intelligences of Picasso and Monet—both masters of modern art?Most of us would likely agree that different types of intelligence are at work in these individuals. Perhaps one day, Gardner's work on the "jagged profile" of combined intelligences or, perhaps, his insistence on the importance of context will produce a new understanding of intelligence. But at the moment, Gardner's work does not provide adequate guidelines for dealing with these distinctions. Most of us, however, already have a way of explaining individual differences between Monet and Picasso, Martha Graham and Gene Kelly, or between different students in our classrooms: We refer to these individuals as having distinct *styles*.Of course, as Gardner would insist, radically different histories and contexts go a long way in explaining distinctions between Monet and Picasso, for example. But how are teachers to respond to this explanation? As all teachers know, we must ultimately consider differences at the individual level. Learning styles, with their emphasis on differences in individual thought and feeling, are the tools we need to describe and teach to these differences.Best of all, learning styles' emphasis on the individual learning process and Gardner's content-oriented model of multiple intelligences are surprisingly complementary. Without multiple intelligence theory, style is rather abstract, and it generally undervalues context. Without learning styles, multiple intelligence theory proves unable to describe different processes of thought and feeling. Each theory responds to the weaknesses of the other; together, they form an integrated picture of intelligence and difference.Integrating Learning Styles and Multiple IntelligencesIn integrating these major theories of knowledge, we moved through three steps. First, we attempted to describe, for each of Gardner's intelligences, a set of four learning processes or abilities, one for each of the four learning styles. For linguistic intelligence, for example, the *Mastery* style represents the ability to use language to describe events and sequence activities; the *Interpersonal* style, the ability to use language to build trust and rapport; the *Understanding* style, the ability to develop logical arguments and use rhetoric; and the *Self-expressive* style, the ability to use metaphoric and expressive language.Figure 1. Sample "Kinesthetic" Vocations by Style

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| **Mastery** The ability to use the body and tools to take effective action or to construct or repair. *Mechanic, Trainer, Contractor, Craftsperson, Tool and Dye Maker*  | **Interpersonal** The ability to use the body to build rapport, to console or persuade, and to support others. *Coach, Counselor, Salesperson, Trainer*  |
| **Kinesthetic**  |  |
| **Understanding** The ability to plan strategically or to critique the actions of the body. *Physical Educator, Sports Analyst, Professional Athlete, Dance Critic*  | **Self-Expressive** The ability to appreciate the aesthetics of the body and to use those values to create new forms of expression. *Sculptor, Choreographer, Actor, Dancer, Mime, Puppeteer*  |

Next, we listed samples of vocations that people are likely to choose, given particular intelligence and learning-style profiles. Working in this way, we devised a model that linked the process-centered approach of learning styles and the content and product-driven multiple intelligence theory.Figure 2 shows how you might construct a classroom display of information about intelligences, styles, and possible vocations. Consider kinesthetic intelligence and the difference between a Tiger Woods and a Gene Kelly: People who excel in this intelligence, with an *Understanding* style, might be professional athletes (like Tiger Woods), dance critics, or sports analysts; people with a *Self-expressive* style might be sculptors, choreographers, dancers (like Gene Kelly), actors, mimes, or puppeteers.Figure 2. Student Choice: Assessment Products by Intelligence and Style

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| **LINGUISTIC** **Mastery*** Write an article
* Put together a magazine
* Develop a plan
* Develop a newscast
* Describe a complex procedure/object

 **Interpersonal*** Write a letter
* Make a pitch
* Conduct an interview
* Counsel a fictional character or a friend

 **Understanding*** Make a case
* Make/defend a decision
* Advance a theory
* Interpret a text
* Explain an artifact

 **Self-Expressive*** Write a play
* Develop a plan to direct
* Spin a tale
* Develop an advertising campaign

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The following outline shows how we categorized abilities and sample vocations for the seven intelligences, by learning style:**Linguistic*** Mastery: The ability to use language to describe events and sequence activities *(journalist, technical writer, administrator, contractor)*
* Interpersonal: The ability to use language to build trust and rapport *(salesperson, counselor, clergyperson, therapist)*
* Understanding: The ability to develop logical arguments and use rhetoric *(lawyer, professor, orator, philosopher)*
* Self-expressive: The ability to use metaphoric and expressive language *(playwright, poet, advertising copywriter, novelist)*

**Logical-Mathematical*** Mastery: The ability to use numbers to compute, describe, and document *(accountant, bookkeeper, statistician)*
* Interpersonal: The ability to apply mathematics in personal and daily life *(tradesperson, homemaker)*
* Understanding: The ability to use mathematical concepts to make conjectures, establish proofs, and apply mathematics and data to construct arguments *(logician, computer programmer, scientist, quantitative problem solver)*
* Self-expressive: The ability to be sensitive to the patterns, symmetry, logic, and aesthetics of mathematics and to solve problems in design and modeling *(composer, engineer, inventor, designer, qualitative problem solver)*

**Spatial*** Mastery: The ability to perceive and represent the visual-spatial world accurately *(illustrator, artist, guide, photographer)*
* Interpersonal: The ability to arrange color, line, shape, form, and space to meet the needs of others *(interior decorator, painter, clothing designer, weaver, builder)*
* Understanding: The ability to interpret and graphically represent visual or spatial ideas *(architect, iconographer, computer graphics designer, art critic)*
* Self-expressive: The ability to transform visual or spatial ideas into imaginative and expressive creations *(artist, inventor, model builder, cinematographer)*

**Bodily-Kinesthetic*** Mastery: The ability to use the body and tools to take effective action or to construct or repair *(mechanic, trainer, contractor, craftsperson, tool and dye maker)*
* Interpersonal: The ability to use the body to build rapport, to console and persuade, and to support others *(coach, counselor, salesperson, trainer)*
* Understanding: The ability to plan strategically or to critique the actions of the body *(physical educator, sports analyst, professional athlete, dance critic)*
* Self-expressive: The ability to appreciate the aesthetics of the body and to use those values to create new forms of expression *(sculptor, choreographer, actor, dancer, mime, puppeteer)*

**Musical*** Mastery: The ability to understand and develop musical technique *(technician, music teacher, instrument maker)*
* Interpersonal: The ability to respond emotionally to music and to work together to use music to meet the needs of others *(choral, band, and orchestral performer or conductor; public relations director in music)*
* Understanding: The ability to interpret musical forms and ideas *(music critic, aficionado, music collector)*
* Self-expressive: The ability to create imaginative and expressive performances and compositions *(composer, conductor, individual/small-group performer)*

**Interpersonal*** Mastery: The ability to organize people and to communicate clearly what needs to be done *(administrator, manager, politician)*
* Interpersonal: The ability to use empathy to help others and to solve problems *(social worker, doctor, nurse, therapist, teacher)*
* Understanding: The ability to discriminate and interpret among different kinds of interpersonal clues *(sociologist, psychologist, psychotherapist, professor of psychology or sociology)*
* Self-expressive: The ability to influence and inspire others to work toward a common goal *(consultant, charismatic leader, politician, evangelist)*

**Intrapersonal*** Mastery: The ability to assess one's own strengths, weaknesses, talents, and interests and use them to set goals *(planner, small business owner)*
* Interpersonal: The ability to use understanding of oneself to be of service to others *(counselor, social worker)*
* Understanding: The ability to form and develop concepts and theories based on an examination of oneself *(psychologist)*
* Self-expressive: The ability to reflect on one's inner moods, intuitions, and temperament and to use them to create or express a personal vision *(artist, religious leader, writer)*

As the final step in constructing the intelligence-learning style menus, we collected descriptions of products that a person with strengths in each intelligence and style might create. For example, in the linguistic intelligence domain, a person with the *Mastery* style might write an article, put a magazine together, develop a newscast, or describe a complex procedure. By contrast, a person with a *Self-expressive* style might write a play, spin a tale, or develop an advertising campaign (see fig. 2). In the kinesthetic intelligence domain, a person with an *Understanding* style might choreograph a concept or teach a physical education concept; a person with a *Self-expressive* style might create a diorama or act out emotional states or concepts. A class display of such lists might accompany charts like the sample shown in Figure 2.How to Use the Integrated Intelligence MenusSeveral years ago, Grant Wiggins reminded us that we can't teach everything. It is also quite obvious that we can't use every teaching method nor every form of assessment. Here are some ways to use the Integrated Intelligence Menus—particularly for performance assessment—without trying to do everything at once.*1. Use the menus as a compass.* Keep a running record of the styles and intelligences you use regularly and of those you avoid. When a particular form of assessment doesn't work, offer the student another choice from another part of the menu.*2. Focus on one intelligence at a time.* Offer your students a choice in one of the four styles, or urge them to do two assessments: one from a style they like and one from a style they would normally avoid.*3. Build on student interest.* When students conduct research, either individually or in groups, show them the menus and allow them to choose the product or approach that appeals to them. They should choose the best product for communicating their understanding of the topic or text. Students thus discover not only the meaning of quality, but also something about the nature of their own interests, concerns, styles, and intelligences.In developing assessments, teachers must devise their own standards and expectations. But we can judge the model itself by two powerful standards:* Does it help us develop every student's capacity to learn what we believe all students need to know?
* Does it help each student discover and develop his or her unique abilities and interests?

In conjunction, both multiple intelligences and learning styles can work together to form a powerful and integrated model of human intelligence and learning—a model that respects and celebrates diversity and provides us with the tools to meet high standards.ReferencesBriggs, K.C., and I.B. Myers. (1977). *Myers-Briggs Type Indicator*. Palo Alto, Calif.: Consulting Psychologists Press.Butler, K. (1984). *Learning and Teaching Style in Theory and Practice*. Columbia, Conn.: The Learner's Dimension.Gardner, H. (1983). *Frames of Mind: The Theory of Multiple Intelligences*. New York: Basic Books.Gardner, H. (1993). *Multiple Intelligences: The Theory in Practice*. New York: Basic Books.Gregorc, A. (1985). *Inside Styles: Beyond the Basics*. Maynard, Mass.: Gabriel Systems, Inc.Jung, C. (1927). *The Theory of Psychological Type*. Princeton, N.J.: Princeton University Press.McCarthy, B. (1982). *The 4Mat System*. Arlington Heights, Ill.: Excel Publishing Co.Silver, H.F., and J.R. Hanson. (1995). *Learning Styles and Strategies*. Woodbridge, N.J.: The Thoughtful Education Press.Silver, H.F., and R.W. Strong. (1997). *Monographs for Learning Style Models and Profiles*. (Unpublished research).Endnotes**1**  The term *interpersonal style* overlaps with Gardner's *interpersonal intelligence*. In Gardner's model, interpersonal intelligence is a category related to the content and products of knowledge. In our learning-style model, the interpersonal style refers to a way of processing knowledge.**2**  Gardner has recently introduced an eighth intelligence—*naturalist*. Although our integrated intelligence menus can easily accommodate this new category, we have chosen to work only with the classic seven intelligences.**Harvey Silver** is President, **Richard Strong** is Vice President, and **Matthew Perini** is Director of Publishing at Silver Strong & Associates, Inc., Aspen Corporate Park, 1480 Route 9 North, Woodbridge, NJ 07095 (e-mail: **silver\_strong@msn.com**).Copyright © 1997 by Association for Supervision and Curriculum Development |