





Arts with the Brain in Mind

Acknowledgments	iv
Preface	v
 1. Arts as a Major Discipline	1
 2. Musical Arts	13
 3. Visual Arts	49
 4. Kinesthetic Arts	71
 5. Arts and Assessment	106
Appendix: Additional Resources	119
References and Bibliography	121
Index	134
About the Author	139

1



The *Arts* as a Major Discipline

Right from the start, it's imperative to understand that evidence from brain research is *only one* of many reasons to support the arts as an integral part of the educational process. There are studies that report benefits from a long-term arts curriculum, but many of them are deficient in some respect (Eisner, 1998). A recent Project Zero study (2000) cautioned against making causal links between arts and academic performance. This Harvard group is correct; arts are not to be used as a "quick fix" to shore up other nagging deficits in a district's educational process. Arts are for the long term; and one should be cautious in claims about how they affect test scores. In fact, a report by the Arts Education Partnership and the President's Committee on the Arts and the Humanities, funded by General Electric Corporation and the John D. and Catherine T. MacArthur Foundation, *Champions of Change* (Fiske, 1999), suggests that the influence of the arts is far wider and deeper than simply improved letter grades.

If we place value only on higher test scores—and if the tests measure only math, problem-solving, and verbal skills—the arts are at a clear disadvantage. If we demand quick results, the arts will not supply them. The arts develop neural systems that often take months and years to fine-tune. The benefits, when they appear, will be sprinkled across the spectrum, from fine motor skills to creativity and improved emotional balance.

In today's educational climate, delaying returns on investment beyond a few weeks is considered inefficient and sinful; and since art-making is inefficient, how does one justify arts in the curriculum? In the



past, supporters of arts education tried to show it boosted test scores in other disciplines. Judith Burton of Columbia University gathered research to show that subjects such as science, mathematics, and language require complex cognitive and creative capacities “typical of arts learning” (Burton, Horowitz, & Abeles, 1999).

Eventually, though, the way the question is framed changes to, “Does music help math?” “Does art help language?” “Does P.E. help science?” That is ludicrous. The arts do not need—and may not be able—to justify their existence that way.

Second, and paradoxically, *even if* the arts did help every other discipline to a degree, it may not be the most efficient way to learn them. If students learn history through the arts, couldn’t they learn it faster by doing it much more directly? It’s essential to recognize that in this recent push for greater school efficiency (e.g., every minute counts), the arts are terribly inefficient. It is dreadfully time consuming to learn visual, musical, and movement arts. A theater group might rehearse for 100 minutes a day for 100 days to put on a single 90-minute play. For other students, long hours over several years are invested, with marginal artistic results. So now the question shifts to, If arts are not efficient, what are they?

Art as a Brain Developer

The central theme of this book is that the arts promote the development of valuable human neurobiological systems. Theories of the brain exist that help us understand what is going on when we do art.

Chapters 2–4 introduce separate theories for the musical, visual, and kinesthetic arts. It’s not enough to say that the arts *probably* benefit us; we ought to be able to articulate what goes on in the brain to make that happen. Chapter 5 addresses controversial arts assessment issues.

The arts enhance the process of learning. The systems they nourish, which include our integrated sensory, attentional, cognitive, emotional, and motor capacities, are, in fact, the driving forces behind all other learning. That doesn’t mean that one cannot learn without the arts; many have. The arts, however, provide learners with opportunities to simultaneously develop and mature multiple brain systems, none of which are easy to assess because they support processes that yield cumulative results. The systems and *processes* are not, in and of themselves, *the results*. Testing the processes instead of results can narrow the



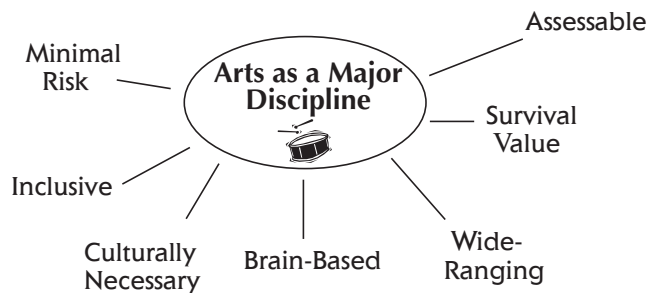
development of the very neurobiological systems they depend on. Students will restrict their artistic activities in hopes of better grades.

It may be more important, finally, to value the nonacademic benefits of the arts. Why be sheepish about the possibility that the arts may promote self-discipline and motivation? What’s embarrassing about countless *other* art benefits that include aesthetic awareness, cultural exposure, social harmony, creativity, improved emotional expression, and appreciation of diversity? Aren’t these the underpinnings of a healthy culture? In *Champions of Change: The Impact of the Arts on Learning*, the contributors highlight some of the “take-home” messages about arts (Fiske, 1999):

- The arts reach students not ordinarily reached, in ways not normally used. This keeps tardies and truancies and, eventually, dropouts down.
- Students connect to each other better—greater camaraderie, fewer fights, less racism, and reduced use of hurtful sarcasm.
- It changes the environment to one of discovery. This can re-ignite the love of learning in students tired of being filled up with facts.
- Arts provide challenges for students at all levels, from delayed to gifted. It’s a class where all students can find their own level, automatically.
- Arts connect learners to the world of real work where theater, music, and products have to appeal to a growing consumer public.
- Students learn to become sustained, self-directed learners, not a repository of facts from direct instruction for the next high-stakes test
- Students of lower socioeconomic status gain as much or more from arts instruction than those of higher socioeconomic status. This suggests the gifted programs need to expand their target audiences.

So the arts should be taught not only because there is some science that argues for their inclusion. We should support the arts in education because of their dynamic and broad-based value as a peer of every other widely accepted discipline.

How Do Arts Stack Up?





What Makes a Major Discipline?

Let's start with a question. What makes a subject or discipline a "major discipline"? How do we decide what is worth making everybody study and learn? It's a difficult question, well worth exploring. I believe educators can use seven criteria to define major disciplines like science or languages. Let's discover whether or not the arts receive a passing grade as a major discipline.

1. Is the discipline assessable? Assessing the arts can and has been done. In Wisconsin, a coalition of art educators has worked closely with state leaders to create a comprehensive quality arts assessment (e.g., Wisconsin Department of Public Instruction, 1997). *Whether* the arts should be assessed is a topic we'll explore later. For testing purposes, the arts are often broken down into the visual, musical, and kinesthetic (or movement) arts. But there are other ways to organize them. Many organizations, districts, and committees have done admirable, and at times, stunning jobs developing measurable criteria for excellence in all of the arts. Chapter 5 addresses the assessment issue in detail. **Grade for the arts: Pass.**

2. Is it brain based? Here we ask if there's a built-in biological basis for the discipline. Is it hard-wired into the brain? Are there identifiable places in the brain that respond only to that discipline? After all, there are language centers in the brain—what about the arts? As it happens, brain research in each of the three subdisciplines—visual, musical, and kinesthetic—has located anatomical structures dedicated to processing specific art experiences. Back in the late '70s and early '80s a myth arose that the arts are just a right-brain frill. This hang-over from the days of the "left brain is logical and the right brain is creative" is dead wrong. Chapters 2–4 present brain-based evidence showing the biological basis for art-making. And not only do the arts engage many areas of the brain (see Figure 1.1), but they also have multiple, far-reaching effects on the learner's mind. This book presents a comprehensive arts-based brain theory. **Grade for the arts: Pass.**

3. Is it culturally necessary? A discipline should serve clear cultural needs. It should promote the betterment of humanity as well as of local culture. In disciplines such as science the answer to this question is