

## Teaching with the brain in mind

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### Abstrak

Despite the mounting evidence that supports brain-based learning, some critics say, "It's no big deal: there's nothing new" or, "We don't know enough to do anything." Some even say, "Nothing will change." I wonder if those same critics would have had similar things to say at Kitty Hawk in 1903, when the Wright brothers flew the first airplane only 100 yards: "It's no big deal," "It won't change anything." We are now at the doorstep of the same kind of revolution. Instead of a mechanical one fueled by new modes of transportation, it's one of neurons, chemicals, networks, and wonderful, truly historic discoveries. For the first time in human history, we are beginning to understand how our brain works. Yes, maybe we are just at the stage of the Wright brothers' first flight. But it's a great time to be alive. Shortly after new "brain-based" thinking began to make its way into the mainstream, critics began finding fault. For example, John Bruer, president of the James S. McDonnell Foundation, noted that "well-founded educational applications of brain science may come eventually, but right now, brain science has little to offer education practice or policy" (1998, p. 14). Armed with selected willing scientists and selective studies, the critics (Bruer, 1998, 1999; Bailey, Bruer, Symons, & Lichtman, 2001) have attempted to invalidate the integration of brain-based understandings into schools. Some claim that it's still too early and we don't know enough for sure. But if we waited for irrefutable evidence on everything we did in education, we'd need to stay at home. Some people are simply "early adapters," and others, more skeptical, are "late adapters." By nature, critics are typically late adapters. There are also those who have more personal agendas to protect, such as a pet program, an institution, or a foundation that they fear is being threatened. Having said this, some critics have raised valid points: others have raised what I see as unwarranted objections. Here are some of the criticisms and my responses. Criticism: Many "pop" writers were not scrutinizing the sources of their information about the brain. Response: I agree. The general news media are not always reputable sources of information about the brain. Nor is one scientist, one critic, one famous person, or a single study: anyone seeking reliable information must consider multiple credible sources. For example, I first consider material from the basic neuroscience sources, then look at clinical studies if they're available, and finally locate reports of educational practices or action research to confirm the practical applications. Readers of research on the brain should look for significant sample sizes, blind studies, well-designed experiments, and plausible conclusions. For every source that appears in the References section of this book, there are a half dozen that I left out, just to keep the length of the list reasonable. In short, what I state in this book is solid information.