

Multiple Intelligences (http://www.interaction-design.org/encyclopedia/multiple_intelligences.html) (CC: BY SA)

by Julia Reinhard Lupton

The concept of Multiple Intelligences was first formulated by Howard Gardner in his 1983 book, *Frames of Mind: The Theory of Multiple Intelligences*. Whereas linguistic and logical-mathematical intelligences are centrally addressed and nurtured by the three Rs of traditional education, other forms of intelligence, including musical, bodily-kinesthetic, and spatial, provide alternative means of accessing knowledge, according to Gardner's scheme. Gardner's theory catalogues the different styles of learning that students bring to the classroom. The theory can also be applied to the forms of reasoning that people of all ages use in any scene of information retrieval and intellectual exchange, from understanding prescription bottles, package labels and cookbooks to navigating maps, magazines, and web sites.

Multiple Intelligences	
Linguistic intelligence	Verbal communication abilities
Logical-mathematical intelligence	Mathematical and logical skills
Musical intelligence	Performance, composition and appreciation of musical patterns
Bodily-kinesthetic intelligence	Using the body and bodily movement (i.e., sports and dance) to solve problems or understand the environment
Spatial intelligence	Ability to navigate space, understand, map and apply spatial patterns
Interpersonal intelligence	The skills of the classic "people person," who understands human motivation and behavior and uses this understanding to further personal goals (in sales, ministry, counseling, politics, etc.)
Intrapersonal intelligence	Socratic capacity to "know thyself," and to use self-knowledge to organize your life

Other candidates for multiple intelligences include "naturalist," "spiritual," "existential," and "moral," but have not been formally included in Gardner's template.

Gardner's background is in psychology (which he studied as an undergraduate under luminaries that included psychoanalyst Erik Erikson) and education (he received his doctorate in Education from Harvard in 1971, with a dissertation on style sensitivity in children). As a graduate student and then later as a scholar and researcher, Gardner worked in Project Zero, which studies arts education. He now holds the title of Hobbs Professor of Cognition and Education at the Harvard Graduate School of Education.

The main impact of "Multiple Intelligences" has been on the field of education, especially the progressive pedagogy associated with the work of John Dewey. Much of the MI approach involves applying the underlying concepts and techniques developed in arts education to the teaching of academic subjects. In classrooms, employing "Multiple Intelligences" means trying to engage different styles of learning in order to maximize educational success, intellectual growth, and enthusiasm for learning among diverse learners, often by introducing the arts (music, drawing, dance) into the study of literature, history, or math. This concept is especially relevant to urban schools and to students with learning disabilities. Such students may be underdeveloped verbally or mathematically, but often have

skills and aptitudes in musical, athletic, or interpersonal realms that can be tapped by teachers, parents, and other educators. Classrooms and even schools can be redesigned to reflect and encourage these different forms of learning (by creating open spaces for kinesthetic activities, for example). The rise of the computer in the classroom has provided a new tool for integrating multiple intelligences via streaming video, mp3 files, image galleries, and self-knowledge survey tools.

Gardner also extended some of his insights beyond formal education in the GoodWork project, which promotes “work that is at once excellent in technical quality and at the same time responsive to the needs and wishes of the broader community in which it takes place.” The project has studied “good work” in journalism, business, and theatre.

Relevance to interaction design

In the area of interactive design, the theory of multiple intelligences can further the enterprise of building information landscapes navigable not only by those with linguistic or mathematical fluency, but also by the visually, musically, or spatially inclined. Many magazines are designed to be consumed by different kinds of readers: those looking for a good story or in-depth coverage (“linguistic intelligence”), those who seek tabulations of facts or comparative data (“mathematical intelligence”), those who are stimulated and informed by pictures (“spatial intelligence”), or those who like rating their behaviors and values through surveys (“intra-personal intelligence”). Web sites can also use design to stimulate and satisfy multiple intelligences. Blogs exercise interpersonal as well as verbal intelligence. Navigation tools often combine visual, aural, and verbal cues and feedback mechanisms. Multimedia presentations can enhance comprehension and recall of challenging materials.

Criticism

Academic psychology, including the scientific study of intelligence, has not embraced Gardner’s account of human cognition and learning, partly because his theories are difficult to test empirically. See Smith’s entry in the encyclopedia of informal education, 'Howard Gardner and multiple intelligences', for a survey of the debate and for an especially helpful history of his contributions in context.

Despite these important criticisms, practitioners in the applied fields of teaching (K-12 and even college) and design (interaction design, print, internet, etc) can benefit from an expanded picture of human capacity and a reminder of the various ways in which minds can be engaged.

Want to learn more?

Gardner (1999) is a useful review of Gardner's theory and discussion of issues and additions.

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