

The Crayon Project: Developing Content Specific Color Resources to Enhance and Integrate Creativity and Learning

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Learning Styles and Memory

In his landmark book, Frames of mind, Howard Gardner identified seven learning modalities or intelligences, which he linked to learning styles. Since the publication of his theory, both the public and private sectors have demonstrated an intense interest in elaborating on these styles and identifying how they impact our real-world experiences. There are any number of measures available, many of them on line, to test whether you are a visual, auditory, kinesthetic or tactile learner. Experts in both the education and training communities have been eager to develop strategies for enhancing the experience of diverse groups of learners. This research has consistently indicated that; 1) learners benefit when the instructional modality matches their learning style, and 2) learners benefit from instructional modalities, which stimulate multiple sensory channels.

Brain and Memory

Humans have long been interested in the study of the brain. In the last decade we have seen an increase in such study as modern technological advancements let us peer ever more deeply into the three pounds of tissue housed in our skulls. Thus, our knowledge of brain function has grown exponentially. Researchers like Alvaro Pascual-Leone at Harvard University have used a technique called Transcranial-Magnetic-Stimulation (TMS) to chart the connection between physical movement and cortical function. Other researchers, like James McGaugh , have studied the relationship between emotion and memory. As regards learning and memory we now are certain that; 1) kinetic movement influences cortical activity, and 2) emotions play a integral role in the creation and strength of memories.

The Role of Color

Human beings crave color in their environment. Opportunities to expand the available color palette are welcomed and even sought after. Companies seek more affordable ways to offer more color choices to consumers. Color selections are regularly updated. It is well understood that colors carry meaning. Some meanings are long-standing; the phrase ‘true blue’ dates back to the Middle Ages. Other meanings evolve with the times; ‘the blue screen of death’ is a product of modern technology. Color is a powerful communication tool; a reality all too salient to manufacturers, designers, marketers and advertisers.

Emotions are inextricably a part of any meaningful symbol and this is no less true of the personal, social and cultural meanings of color. In fact, color terms often serve as a communication short-hand. To say 'I feel blue' or 'I saw red' is a means to convey a wealth of expression in a concise form.

Colors also evoke associations with our basic senses. They can be warm or cool, for instance. Just altering the color appearance of a food product can alter its taste. Items colored pink or light blue are generally perceived as sweet tasting and therefore lend themselves to cake frosting rather than loaves of bread. In the case study by Oliver Saks entitled, The Case of the Colorblind Painter, Mr. I has lost his color vision. His now gray meals are tasteless and hard to eat. Colors are also known to evoke association with smell and touch.

Bringing Color into the Classroom

Because color has an emotional valence, assigning and associating color with elements of course content might improve the memory of that material. As such, learning would be enhanced. Because there is a connection between physical movement and brain changes, the act of applying color to images of objects relevant to course content might improve the memory of those images and, ultimately, the content they represent. As such, learning would be enhanced. Because learners benefit from modalities which tap into more than one sensory channel, associating color with course content may increase the channels of information. As such, learning would be enhanced.

Art education is often deemed peripheral to the mission of our schools. As such, in recent years we have seen a trend to devalue and discontinue art education in the schools. This project seeks to demonstrate the short-sightedness of such a decision. Our contention is that art, in the form of color application, can and should be incorporated into many and perhaps all parts of a curriculum and that it benefits both children and adult learners.

Methodology

In this demonstration project, college students were asked to create a color palette and related resources for a specific area of course content. Their target was usually either an elementary school or middle school student audience. Students were assigned a subject area such as, the American Revolution, the Reformation, Freud's concept of human personality, U.S. national parks, world geography or teaching hygiene to preschoolers. They were then required to develop a 'teaching packet' for their subject, the primary element of which was the definitive set of eight crayon colors representing the salient content.

Preliminary Findings and Implications

The results have clearly indicated that colors can be assigned to course content in a meaningful way. That developing these materials requires a solid rationale and enhances the subject matter for the adult learner/developer. While pilot tests of the materials with

other adult learners proved successful, our next step would be to test this method of delivery with appropriately aged children. Going forward, we expect that his technique has implications for other arenas of adult education and to corporate training programs.

References

1. Ortony A, Clore G, Collins A. Cognitive Structure of Emotions, Cambridge University Press; 1990
2. Ekman D, Davidson R. Nature of Emotion: Fundamental Questions. Oxford University Press, USA; 1994.
3. Walsh V, Pascual-Leone V. Transcranial Magnetic Stimulation: A Neurochronometrics of Mind. MIT Press; 2005
4. Bucko R. Toward a Brain Compatible Elementary School. Classroom Leadership 1998; 2:3
5. Barkman C. Patterns, the Brain, and Learning. Classroom Leadership 2000; 4:3ASCD 2000
6. Allen R. In the Front Row: The Arts Give Students a Ticket to Learning. Curriculum Update ; Spring 2004
7. Lubliner S. Reciprocal Teaching: An Alternative to Gatekeeping Practices. Classroom Leadership 2001; 5:3
8. Silver H., Strong R., Perini M. So Each May Learn: Integrating Learning Styles and Multiple Intelligences, Chapter 6. Teaching Learning Styles and Multiple Intelligences to Students, ASCD 2000
9. Gage, J. Color and Meaning: Art, Science, and Symbolism, University of California Press; 1999
10. Saks, O. An Anthropologist on Mars. Vintage Press; 1995

Author Biography

Margaret A. Miele received both her undergraduate and graduate training in psychology from The City University of New York. Since then she has been on the faculty at the Fashion Institute of Technology in New York City. Her areas of specialty are Color Psychology, Industrial/Organizational Psychology, Research Methods and Assessment. She has served on the Board of the ISCC and is the current Education Chair.

The student contributors to this paper all attend FIT. Their backgrounds and majors are diverse. They are all keenly aware of just how much color can impact on the human experience.