

5 most useful resources on the CreativeIT wiki

1. **Creativity Support Tool Evaluation Methods and Metrics.** Tom Hewett, Mary Czerwinski, Michael Terry, Jay Nunamaker, Linda Candy, Bill Kules, and Elisabeth Sylvan. In **Report of Workshop on Creativity Support Tools, 2005.**

Summary: This report from the previous workshop was very helpful to me as someone who is relatively new to the CreativeIT field, as it gives a nice overview of where the field stands. There is a nice overview of the most seminal thinkers, relying heavily on Sternberg's Handbook of Creativity, such as Csikszentmihalyi's flow concept, Boden's P- and H- creativity, Gardner's different types of creativity. They also discuss Mayer's summary of research approaches to studying creativity. The article lists three HCI objectives in studying creativity (from Linda Candy): to enhance the personal experience of the person who wants to be creative, to improve the outcomes and artifacts and to support the creative process by providing functional tools. A main point made in the report is that in measuring creativity tools, various measurement techniques must be combined with others in appropriate ways to address the complexity of the creativity construct.

The report ends with two case studies of current best practices in the study of creativity within HCI. The first study outlines the work of Terry and Mynatt who have done extensive work in developing systems aimed at allowing multiple alternative options to be explored (and affected) simultaneously. The second study outlines the multiple research methodologies for investigating CSTs performed by George, Nunamaker and Valacich.

2. **Informing the design of computer-based environments to support creativity.** Hewett, T. T. (2005). International Journal of Human-Computer Studies, 63, 383-409.

Summary: The virtual workbench model is proposed as a way of approaching the development of CSTs. While some tools would be domain specific, other would be general purpose, domain-independent tools. Three domain independent components of a virtual workbench: context-sensitive hypertext help, a notebook/event report module and a communication support/digital archive for sharing. In addition to presenting the virtual workbench framework, Hewett analyses the questions of whether it is possible to effectively support creative work, whether creativity differs significantly across domains and the importance of insight.

3. **Who's afraid of a cognitive neuroscience of creativity?** By Arne Dietrich. Elsevier 2007.

Summary: This short, six-page article gives a very nice overview of some of the issues facing cognitive neuroscientists as they attempt to localize the creative process in the brain through modern brain imaging techniques. The main point of the paper is that creative is a high-level complex phenomenon which cannot be localized. Neuroscientists continually claim to have found the part of the brain that 'does creativity', but they are treating some sub-task of creativity as the whole thing. Also, Dietrich points out that there are different types of creative thinking, and some types of creative thinking may use different parts of the brain than other types of creative thinking. In the paper, Dietrich debunks four common myths about creativity in the brain, which I summarize here. Myth 1: Creativity is divergent thinking. Reality: creativity involves both divergent and convergent thinking (and, divergent thinking is a compound construct in itself, so finding a part of the brain linked to divergent thinking isn't helpful). Myth 2: Creativity is in the right brain. Reality: this is a fallacy, creativity involves both hemispheres, and creativity is such a complex construct that is thoroughly distributed throughout the brain. Myth 3: Creativity occurs in a state of defocused attention. Reality: yes, that's possible but creativity can also occur in a highly focused state of attention. Myth 4: Altered states of consciousness facilitate creativity. Reality: certain alterations (drugs, mental illness) may facilitate a specific type of creative thinking, but the prevalence of this happening is low.

4. **Brain and Creativity.** by Alberto Oliverio, in Progress of Theoretical Physics Supplement No. 173, 2008.

Summary: This article discusses the measurement of creativity through neural imaging, and the difficulty of teasing out creativity from the more specific activity of problem solving. This paper discusses the Darwinian approach to creativity, in which creativity is characterized as variation-selection task that encompasses two distinct states: the generation of novelty followed by the evaluation of novelty. This paper then looks at the brain areas that are likely to be involved in these two separate processes. This article comes to conclusions that are similar to those of Dietrich: mainly that creativity is a complex construct that cannot be relegated to specific functional areas of the brain.