Message from the Editor

Imagineering

By La Verne Abe Harris, Ph.D.
Purdue University, West Lafayette

Let's engineer our imagination. This semester my students at Purdue University started using an IdeaBook in one of my classes. It is a sketchbook of ideas for projects and graphical interpretations of reading materials. They have been reading chapters in their textbooks or listening to lectures and drawing mind maps of the content. They are learning to make their thoughts visible. Galileo used graphic diagrams and sketches of perspective to revolutionize science, while all the other scientists described their thoughts verbally and in algebraic terms. Creativity intensified substantially during the Renaissance when ideas began to be documented through drawing and sketching. Get the relationship? Hmmm.

Do you notice how computer graphics professors still play with toys? I see those Legos in your classrooms. I see Buzz Lightyear sitting up against my window, and I see that giant transformer on your desk. Why is this? To be childlike is to be in good company. Albert Einstein was childlike his entire life by playing games with numbers. Creative thinkers are constantly combining and recombining ideas into something innovative.

I remember when I was on a team of academics assigned to work collaboratively on a virtual project that another university presented to us. I had more questions than answers. I could not get my hands around exactly what they wanted no matter how many questions were asked. I found out later they did not know what they wanted. The project was a failure. It did not get past the research phase of comparing competitive products. I realized that failing was a good thing. I learned so much about what not to do. So the first step to creative thinking is understanding that failure is an important part of success. Failure forces us to explore the unanticipated or walk the unexpected path. It forces us to grow. It gives us creative opportunity. As teacher-scholars, it invites us to continue to approach teaching with creativity and innovation, and to bring that out in our students.

In this Winter Issue, we have four great articles focusing on creative and innovative approaches to studying spatial ability and learning styles. Using innovative tools, such as alternative view screen and physical model rotator, Brad L. Kinsey and Erick Towle of the University of New Hampshire, and Richard M. Onyancha of Rose-Hulman Institute of Technology, experimented with the effectiveness of spatial ability targeted training tools. Retention and achievement in engineering, mathematics, technology and science disciplines is positively related to spatial ability. More research is underway.

James L. Mohler and Craig L. Miller of Purdue University discuss improving spatial ability with a creative approach to sketching. Their qualitative research uncovered evidence that a teaching technique called *mentored sketching* is effective for teaching visualization skills to freshman engineering students.

In the article *Students' Preferred Learning Styles in Graphic Communications*, Jeremy V. Ernst and Aaron C. Clark of North Carolina State University studied the changes in dominant preferred learning styles of university students. Instructional presentation of course content was found not to influence change in learning style. The article had actually been accepted for publication in the Journal before it was presented at the EDGD MidYear Conference in Virginia Beach. It subsequently was recognized with the Oppenheimer Award.

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MESSAGE FROM THE CHAIR

Kathryn Holliday-Darr
Penn State Erie, The Behrend College

What an exciting year for the Engineering Design Graphics Division! At the last Mid-Year conference in Norfolk, Virginia, the executive committee saw a need for the Division to re-evaluate our current committee structure and charges. The discussions on which charges, or duties, are still relevant to the Division and what changes should be made were interesting and lasted throughout the conference. We are now in phase two, asking the membership for their input via the EDGD listserve. The discussions have been great, but I encourage everyone to share your thoughts. It is YOUR Division!

The first listserve discussion was about moving the Journal 'online.' This topic is currently being examined and will be reported back to the membership. One thing I can tell you is we have found online software that looks very promising.

The 2008-2009 Berkeley, California, Mid-Year Conference Program Committee has also stepped up to the plate and will be implementing some new ideas, such as reaching out to the Freshman Program Division.

Speaking of conferences… the Engineering Design Graphics Division is a great forum for the exchange of ideas. Tried something new? Write a paper and share it with others by submitting it to one of our conferences and the EDG Journal. Never presented at one of our Division conferences? Try it. We would love to hear what you are doing. Stuck and need help? Attend one of our conferences. Remember, you do not have to present to attend. The 2008 Annual ASEE meeting will be in Pittsburgh June 22-25. The 2008-2009 Mid-Year EDG Division Conference will be held in sunny Berkeley, California, January 4-7, 2009, and the Annual ASEE Conference will be held in Austin, Texas, June 2009.

The Call for Papers for the up and coming Mid-Year conference in Berkeley has been issued. The abstracts are due September 5th, 2008. For more information go to http://www.me.berkeley.edu/edgd-midyear/

See you in Pittsburgh for a great annual meeting.

Message from the Editor

-- continued from previous page --

In the article *Spatial Visualization by Realistic 3D Views*, Jianping Yue of Essex County College tested a modified version of the Purdue Spatial Visualization Test-Visualization by Rotation on four groups of students. The findings indicated enhanced performance on the special visualization test with realistic 3D views.

So there you have it. Great research. Great writing. Great ideas. And happy *imagineering*!

I leave you with this thought:
Thomas Edison inspires me, and so does Leonardo daVinci and Albert Einstein.
Pessimists are often right, but optimists are more productive.

-- La Verne Abe Harris