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Interdisciplinary Visualization: The Search for Connectivity

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Visualization through imagery has been a method of communicating both abstract and concrete information since the beginning of time. The invention of computer graphics is one of the most significant discoveries in visualization. Applying visualization to a variety of disciplines has expanded its value.

The interdisciplinary nature of graphics has made our Journal more than just engineering design graphics. Our research has expanded into discovering how people learn using computer graphics. Our research has explored the interplay of visualization and interaction for domains such as science, humanities, engineering, and mathematics, using 2D and 3D computer tools. We have moved from hand-drawn sketching for drafting to quantitative evaluations and models of human-computer interaction. We have embraced not only a better understanding of spatial computer input, but of human behavior. In this issue of the *Engineering Design Graphics Journal* we have three articles presenting research on visualization applied to interior design, geometry, and psychology.

The first article in our Journal — *Rethinking Design Process: Using 3D Digital Models as an Interface in Collaborative Session* — is a pilot study conducted by Professor Suing Ding, incorporating a real-world learning experience in a university interior design classroom. She presented an innovative alternative design process using 3D digital models as a part of the learning process. The students in her class not only learned how to use 3D AutoCAD, but experienced collaborative session feedback, and traditional versus alternative space planning.

Professor Kevin L. Devine of Illinois State University is one of our new members of the Engineering Design Graphics Division. His article — *Using a Parametric Solid Modeler as an Instructional Tool to Teach High School Geometry* — was selected as *The Editor's Award* for its innovative approach using computer graphics technology to teach mathematics to high school students. His scientific study inspires us to continue to explore applying computer graphics technology as a conduit of interdisciplinary teaching and learning. This study builds a foundation of learning research using a parametric solid modeler to teach the mathematical principles of areas and volumes of solids.

Spatial ability research since the late 1800's is eloquently summarized in the third article — Dr. James Mohler's *A Review of Spatial Ability Research*. What is unique about his study is how psychology is tightly coupled with the concept of spatial ability throughout history. Years ago an article on psychology and spatial ability would have never made it into our Journal. Why now?

To be successful in the future, the content of our Journal must grow with the times. We need visionary mindsets, creative thinking, a *brazos abiertos* (open arms) approach. We need to continue to search for connectivity.

So there you have it... geometry, interior design, AND psychology... all intertwined with the common denominator of visualization and graphics. Here's to future collaboration and interdisciplinary research and applications ...

-- La Verne Abe Harris