

**EMBODIED INTERACTION AND USER EXPERIENCE:
A STUDY OF INTERACTIVE, 3D GRAPHICS IN PROCEDURAL
INFORMATION**

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ABSTRACT

This dissertation describes the collection of data from observing a new mediation method for procedural information. The mediation is accomplished with experimental software designed by the researcher, called *SphereView*. Examined will be the user effects of delivering information virtually, via a human-computer interaction (HCI) with interactive, 3D graphics, as users follow that information in an assembly task. I follow a protocol informed by situated action as described by Suchman (1987), to observe individual users performing purposeful action, *in situ*. One third of users will work with still graphics set to 45° angles; one third will work with interactive, 3D graphics; and one third will work with interactive, 3D graphics with automatic presets to 45° angles. Among other dependent measures, time to build and accuracy rates will be compared between groups. The distribution of user angular preferences will be compared to angles prescribed from relevant literature (Blanz et al., 1996; Heiser et al., 2002; Agrawala et al., 2003; Heiser and Tversky, 2004). Additionally, data from Likert scales will look for differences in user experience. The graphical instructions are viewed on Dell 18-inch flat-screen monitor and manipulated with a mouse (click and drag). The data from this research may reveal new insights into users' exploratory behavior, when they are presented with interactive, 3D graphical instructions, as a tool. Data about user image angle preferences may help inform 2D presentation of information. Visual data may inform us about the users' experience of reading *to do* something.

“Even the mere act of manipulating and rearranging the data in an interactive graphic has value—the user becomes a participant in the discovery process, not just a passive observer. This can be invaluable. [T]he process of manipulating ... puts [the user] face-to-face with aspects of the data that she may never have noticed on paper.” *Designing Interfaces*, Jennifer Tidwell, O'Reilly Media, 2006