Multi-dimensional In-depth Long-term Case Studies (MILCs) [1]
CMSC 734

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How do we evaluate visualization tools?

Study users as they use the tool!

But there are many dimensions of experimental design from which to chose:

- In-lab vs. Field studies
- Qualitative vs. Quantitative
- Novice vs. Expert Users
- Simple vs. Complex Tasks
- Real-world vs. Artificial Data/Problems

Each choice affects the validity of an experiment.

Also, what do we want to learn from this type of study?
What Constitutes a MILC

- *Multi-dimensional*: many modes of observation and participant interaction
- *In-depth*: researches work *with* participants
- *Long-term*: *make* expert users, hopefully help participants accomplish something meaningful
- *Case Studies*: real-world user solving real-world problems

Tools can evolve of the course of the study, observation tactics may change to adapt to conditions, studies may take a *long time*
Goals for MILCs

1. Find strengths/weaknesses in tool
2. Provide evidence that further study is warranted (by solving actual problems)
3. Understand mental/societal mechanisms that influence if/how a tool is used

Success Story

Valiati et al., *Using multi-dimensional in-depth long-term case studies for information visualization evaluation* [2]
B. Shneiderman and C. Plaisant.
Strategies for evaluating information visualization tools:
multi-dimensional in-depth long-term case studies.
In BELIV ’06: Proceedings of the 2006 AVI workshop on
BEyond time and errors, pages 1–7, New York, NY, USA, 2006. ACM.

E. R. A. Valiati, C. M. D. S. Freitas, and M. S. Pimenta.
Using multi-dimensional in-depth long-term case studies for
information visualization evaluation.
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