**Focus Questions – Class 3 -- Controlled Studies**

How does making design decisions based on a design evaluation using the scientific method different than making decisions using your own experience? What do you think some of the strengths/weaknesses of each approach are for the design of a new biofeedback app for sport training?

What are the main differences between quantitative and qualitative design evaluation usability studies? What kinds of evaluation goals (what you want to find out) are a good fit for quantitative studies? Qualitative studies?

Write an example of a hypothesis involving two UI designs and a quantitative measure of user performance (dependent variable). Use the template from slides: a1 is better than a2 for causing b. Now, write the null hypothesis. Why do you need a null hypothesis? [See if you can use form of the white swan argument from slides applied to hypotheses.]

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List some of the reasons the results of a controlled experimental study about input device and task time with children might not generalize to a population of adults. Consider important characteristics of children/adults.

What are some examples of an independent variable related to interface or system design? What are some examples of “direct” dependent variables related to user performance, opinions or experiences about using interfaces or systems? What are some examples of “indirect” dependent variables … ? [See slides and Readings Chapter 2/7]. Which type of dependent variable is likely more valid? Why?