Designing a study with sequential intervention groups Shared by Jill



I'm planning a research study, can you help me design this? Its an educational study. I have access to 30 participants for three weeks, and everyone needs to receive the control, a simple educational resource that takes 1 week to go through. I have an intervention, which is a complex educational resource which takes 5 days to do, but I can only give it to 7 people at once. How can I design this study to maximise my power?

s is a great case for a **crossover design** — specifically a modified crossover that you maximise statistical power while working within your constraints. Let me out the logic and then show you the design.

have 30 participants, 3 weeks, and a capacity constraint of 7 people at once for intervention. The key insight is that since everyone must receive the control way, you can stagger the intervention across groups while the others are doing control — meaning no time is wasted, and everyone contributes to both arms.

e's how it works: you split your 30 participants into 5 groups of 6. The ervention runs for 5 days and fits 7 people, so running one group at a time across 3 eks is feasible. But since the control takes a full week, you can run intervention l control phases in parallel for different groups, maximising the use of your 3- ek window.

e optimal structure is a **within-subjects crossover** where all 30 participants nplete both conditions, giving you paired data and roughly double the statistical ver compared to a between-subjects design with the same N.

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