**SciX 2020 Summer School Lesson Outline + Debrief**

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| **Day** | **Time** | **Main Points** | **Description** | **Debrief** |
| Monday | 10:00-11:00 | 1-hour lecture  Introduction to Cognitive Science/Psychology | Introduce the topic of cognitive science and cognitive psychology and an overview of the week presented by Steve | First 10 mins spent going through some housekeeping and ice breakers. Steve’s lecture went over by quite a lot so no time for individual activity |
| 11:00-11:30 | Individual Activity – Research article | * Each student will be assigned to read 1 research article (dependent on their hypothesis) with key paragraphs highlighted that they should focus on * *Make sure to set up who is assigned to what paper before summer school officially begins* * *Make sure to tell students they will have more time tomorrow to finish reading the paper and answer questions related to the papers* | Had to skip this, but time scheduled tomorrow for students to read the papers anyway |
| 11:30-12:00 | Question from every student | Each student will post a question prior to the start of the summer school about anything they want (e.g. R, university, psychology, etc) | Didn’t have students post a question because they were posting questions in Teams before anyway, so just used this time for general questions |
| 2:00-3:00 | 60-minute workshop  Overview of pre-registration and psychology experiments | * Overview of data collection and ethics (10 mins) * *Slide 8 needs to be edited with number of participants* * *Make sure ethics forms and sample pre-reg is on Teams* * Overview of pre-registration, go through our sample hypothesis (10 mins) * Students will pre-register their own hypotheses (40 mins)   *\* homework: complete a draft of their pre-registration*  *\* goal: understand the process of data collection and complete own pre-registration* | Started about 15 minutes late because students were trickling in from the 1-2pm session. Slides took about 30 minutes and pre registration example took the rest of the time, so had students work on their own pre-registrations during the mini group session |
| 3:00-4:30 | 3-4 student mini groups | Answer questions primary focus: pre-registration and then if time R | Mini group session was overwhelming because it was 1 session to the next to the next with no breaks and so many questions from the students, but used the time to answer any general questions and pre-registration questions which I think was really helpful for the students |
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| Tuesday | 10:00-10:45 | Individual Activity (30-45 mins) | * Students will review the research paper they read from yesterday and answer a series of questions * Should be prepared to present answers to class * *Make sure to post these questions beforehand on Teams* * If time, they can fill out the Big 5 Inventory (optional) |  |
| 10:45-11:30 | 45-minute lecture  Review of cognitive tasks and questionnaires | * Group discussion on the papers the students read and go through the tasks in more detail and the surveys   *\* goal: have a solid understanding of each of the tasks and measures used in our experiment* |  |
| 11:30-12:00 | Share hypotheses |  |  |
| 2:00-3:00 | 60-minute workshop  Introduction to data analysis and stats overview | * Intro to Stats lecture * May need more time on Wednesday to finish   *\* goal: learn some basic statistics*  \**homework: think about what variables in your hypothesis. E.g. What type of variables are they? Do you predict a positive or negative correlation?* |  |
| 3:00-4:30 | 3-4 student mini groups | Answer questions |  |
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| **Day** | **Time** | **Main Points** | **Description** |
| Wednesday | 10:00-10:45 | 45-minute lecture  Data analysis R script | * R tutorial - using our sample hypothesis, go through a live demo of how to read in the data, filter the columns of interest, and organize/clean the data * More tutorials on analysing data in R (e.g. reverse coding, t tests, plots) * Try to record these R sessions so students have the option to go back and view later   *\* goal: use R to reverse code if necessary, conduct a t test, make a plot* |
| 10:45-11:30 | Individual Activity | Students will have time to practice:   * Reverse coding * Get descriptive statistics (mean, median, mode, max, min, etc) * Conduct a t test * Making plots |
| 11:30-12:00 | Progress report | It will probably be best here to check in with students on how they are doing with R (e.g. making sure everything is installed and working properly, making sure no one is completely overwhelmed, providing resources for anyone who has specific questions or problems with R) |
| 2:00-3:00 | 60-minute workshop  Data analysis  Finish r script and begin data analysis | * Continue data analysis that they started during the individual activity * Students will most likely spend most of this session playing around in R and figuring out what analyses they want to do * Students will have to submit a plan for what analyses they will do in R   \**homework: complete analysis plan (e.g. descriptive statistics, graphs, statistical tests, etc)*  *\* goal: create an analysis plan that will be used in their final reports* |
| 3:00-4:30 | 3-4 student mini groups | Answer questions­ |
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| Thursday | 10:00-10:45 | 45-minute workshop  Data analysis | Students will continue data analysis |
| 10:45-11:30 | Individual Activity | Students from last year said they would have liked more time on data analysis, so this workshop will be dedicated to data analysis, too. If students have extra time, they can generate new questions from their data and conduct exploratory analyses. |
| 11:30-12:00 | Research plan |  |
| 2:00-3:00 | 60-minute workshop  Flexible | Students can use this time as they see fit, whether it’s continuing with data analyses, beginning to work on their 5 minutes presentations, or even doing a literature review  *\*homework: put together a draft of their 5 minute presentation (will have time Friday morning to finish)*  *\*goal: feel prepared to put together their 5 minute presentations* |
| 3:00-4:30 | 3-4 student mini groups | Answer questions­ |
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| Friday | 10:00-10:45 | 45-minute workshop  Student presentations | Students will work on presentations of their journey from choosing an experiment and pre-registration all the way through data analysis and conclusions and will present his/her work. |
| 11:30-12:00 | Slides |  |

**Pre-Summer School**

* 1 hour of an introduction to cognitive psychology experiments (used this in last year’s pre-summer school work)
* Roughly 4 hours of tutorials from <https://rladiessydney.org/courses/ryouwithme/>
* Tutorials are grouped into 3 sections and students will be asked to post questions/comments after each one (BasicBasics, CleanItUp, and maybe VizWhiz – depending on how long it takes to go through the first 2 sections)

**Project-specific delivery risks**

* Students struggling with R. I think the pre-summer school work will make a huge difference here and I’ll make sure to be in touch with the students during the pre-summer school to see what questions they have along the way and make sure everyone has everything set up.
* In my lesson plan, I mentioned possibly recording the lectures/workshops which use R, would this be possible? I think it would be really useful for the students to be able to go back and re-watch the coding sessions in case they forget or couldn’t keep up.
* I’m a little bit worried about trying to help 10 students with data analysis online at the same time, especially given they will all have unique research questions. They’ll be using R for I’m assuming the first time, so I anticipate a lot of questions. I think it will be important to work out some sort of system where students will raise their hand if they have a question but make it clear I can only spend so much time helping with any one question, especially if other students are waiting. I’m not sure what platform we’ll be using, but it may be useful to try and practice running through a mock session and maybe seeing if there’s some way to use breakout sessions if I’d be allowed to talk 1-on-1 with students when they have questions so we aren’t disrupting everyone else.