Writing the Method section

Welcome to this module on writing the method section of your report.

Slide 2: What is the purpose of the method section?

What is the purpose of the method section? Well, this is the most important part of your report in terms of convincing your reader about the validity of what it is that you're studying. Therefore, it means you need to describe exactly what research was conducted, why you chose the rationale, or the methods that you did. And your goal is really to have very clear and precise writing because he would like to make sure that if someone else wanted to reproduce what it is that you've done, they could do so. So this replicability of the study is very, very important. And if you don't provide all the details, then it is unlikely they'll be able to reproduce it. And of course, as we said, the purpose of this section is to be able to convince the reader of the validity of your results and the conclusions that you draw based on those results.

Slide 3: Components of the methods section [write in past tense]

Now, the components in the methods section, which is written in the past tense, typically starts with a description of the subjects, participants, etc.- if relevant - that participated in your particular study. So if you involve other people, then you need to say who these other people are and why you picked them. It is also important that you talk about what ethical considerations there are in your study. Now, the next part is a mandatory part. And that is, you have to describe the preparations, the materials, the testbed, and the hardware and software that you use for your data collection - because this describes what you used. That means if you use the model XXX computer from vendor YYY with the CPU running at zero point two GHz with four gigabytes of memory, and Intel blah, blah, internet interface, and this type of router with these modules in it, etc. Then you need to explain that, because the person who comes along afterward who is trying to reproduce your research may find out that actually, it was critically important that you use that particular version of the software for the data collection, that you used that precise hardware, and if they use something different they might get a different result. And that might be part of what they are studying, but if they use the same equipment as you did, then they should be able to get the same result. Now, you have to describe, of course, the procedure, which is the research protocol, your experimental design - in terms of the sequences of steps that you carried out. You need to identify the independent and the defendant in your control variables. Then you have to describe the measurements that you made and the calculations that you did. This means you need to describe to your reader, how you made the measurements, and how you performed the calculations. But remember that you're going to have a separate section where you're going to actually have the results of those measurements. So this is about how you made the measurements. And finally, you have a section on data analysis; we are going to do a description of how you did your analysis. For example, what statistical test you use and what

your p-value was. It is very important to distinguish between the methods section and the results and analysis section - as they have very different purposes. The method section is to describe what you did and why you did it, but not the detailed results of your measurements, that is for later.

Slide 4: Avoiding common mistakes

Now some common mistakes to avoid, of course, are burying your readers in the very beginning in lots and lots of very very fine details - when they don't have a big picture of what it is that you're trying to do. So write the most important things first, and then focus on down to the less important things. Now in some cases, the chronological order that you did things is very important - in which case you need to document that. This is the place in your report where you do that. So as I mentioned previously, don't mix methods your results. You have got an entire results section later to report your results. And don't leave out details of the hardware and the software that you used. And it's very common that you can place this in a table and then you can simply say, "for the details of the hardware used, see Table 3.2, for details of the software used in each of these machines table see Table 3.4". If you have participants, it's important that you remember to include the appropriate demographic details and why they were selected. And again, it's very common to put this or a summary of this into a table. And of course, if you have an ethics or internal review board that made a decision, that "Yes, it is appropriate to carry out the study" they typically give you a document number - so be sure to specify it in this section.

Slide 5: Useful tips

So a very useful tip is if you organized in your introduction each of your aims, hypothesis, and questions into a separate subsection - now you can easily refer to them with a cross-reference in your methods to describe why it is that you did specific things in terms of your aims, hypotheses, and questions.:

Slide 6: References

And finally, for more information, there are two references. One from the writing center at the University of Wisconsin-Madison on writing the method section. And one paper by Richard Kallet called "How to write the methods section of a research paper" in Respiration Care. I think you find both of these very useful. Best of success in writing your method section.