

I have learned many, many useful things in this course. I now know how to test differences amongst 3 or more means to determine if any of the differences are significant and how to determine which pairs of means are significantly different. I am also now able to set up experiments in which the subjects may vary in a couple of different ways (e.g. by age and by sex); within such an experiment in which subjects might vary in these ways, I know how to do the calculations to determine if there are significant differences in the groups represented under each factor. I also know how to test to see if there are significant interaction effects in these designs.

For my research, I am most interested in trying to figure out how to deliver the most effective and efficient treatment programs for young preschool-aged children with motor-based speech and language problems (e.g., articulation problems, stuttering). ANCOVA will definitely be a research design that will be very useful to me, especially since I will be wanting to compare two or more different treatment approaches for a specific speech and language problem. A common research approach in our area, is to have a co-variate such as percentage of sounds pronounced correctly on an articulation test. Then, two groups of children would get two different treatments and then the two groups would be compared again on the same post-test. ANCOVA is very useful in this situation to determine if the differences in the adjusted post-test scores for the two groups are different, and thus if there is any significant difference between the two treatments.

Another very useful tool that I learned in this course that I could see myself using in the future is repeated measures analysis. Sometimes, in our area, we may randomly assign clients to two groups, one that would begin treatment immediately and the other for whom the start of treatment may be delayed for one or two months. The reason why this design is useful in this situation is that it can show whether or not the differences over time are due to the treatment or not. My research is focused on very young children and, in some cases, we will see improvements over time simply due to maturation. This is not uncommon for this age group. It is therefore important in my field to be able to determine if it is natural maturation or the treatment that is causing the improvement. A split plot repeated measures design with one group beginning treatment immediately and treatment being delayed for the other and which includes at least a few levels of the within (time) factor would be quite appropriate in this situation, I think. I've also learned that this repeated measures design can be combined with other designs taught in this course. I am intrigued by this and look forward to the challenge of trying to figure out how to implement these combined designs in future studies of mine.

Christine, 2011