**Statistics-I. Group ARA, 2022/23**

An educational psychologist wants to test whether a novel typeface (font) makes reading easier for children with dyslexia than an ordinary font. She recruits a group of 20 children (8-14 years old) with dyslexia, who have to read silently two texts (matched in difficulty and number of words). One of the texts will be presented in the novel font DYSL and the other text will be presented in Times New Roman (i.e., an ordinary font). Half of them will receive the text in DYSL font first, and the other half will receive the text in Times New Roman font first. She measures the reading time spent by each participant in each of the texts.

(1a) Is this a between-subject or a within-subject experiment? Justify your answer.

(2b) How many rows and columns will you need to analyze these data in JASP (or SPSS)? Justify your answer.

(2a) What type of variable (i.e., which scale for JASP/SPSS) will be Reading Time? Justify your answer.

(2b) Let’s assume that, on average, the children read faster than text in DYSL than in Times New Roman. From an educational perspective, what steps would you do next (i.e., further research) to ascertain that DYSL is indeed preferable to a standard font? Justify your answer.

We have the following database (<https://www.uv.es/mperea/SWT.sav> or alternatively, in JASP format, <https://www.uv.es/mperea/SWT.jasp>), which contains a number of variables in a sample of participants. We ask the following two questions.

(3) We want to examine whether lower-neuroticism individuals differ in perfectionism from higher-neuroticism individuals. For the variable “NeuroticismGroup”, we define the lower-neuroticism individuals as those with a value in neuroticism less than 50—the others will be part of the in the higher- neuroticism group. Please indicate in one/two sentences the main conclusion with the support of statistics and plots.

(4) Please select only those individuals of 30 years old or younger. With this subsample, does the variable Perfectionism follow approximately a normal distribution? Please indicate in one/two sentences the main conclusion with the support of statistics and plots.