Correlation Between the Development of the Prefrontal Cortex and Reaction Time

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The purpose of our experiment was to compare the differences of reaction and decision making times between teenagers ages 14, 16, and 18 years old. Our hypothesis was that the 14 year olds would have a slower reaction time compared to the 16 and 18 year olds and the 16 year olds would have a slower reaction time compared to the 18 year olds. We tested these reaction times with a slide show that we created with various words and asked them to click the timer when a certain word appeared. We tested 50 fourteen year olds and found the average reaction time was 0.9146 seconds compared to the 50 sixteen year olds. The sixteen years old average reaction time was 0.7722 seconds. We tested 50 eighteen year olds and found their reaction time was 0.6691. Our hypothesis was supported. The 14 year olds had a slower reaction time compared to the other ages and the 16 year olds also had a slower reaction time compared to the 18 year olds. We also noted the number of mistakes of each age group during the experiment. The 14 yr olds made an average of 2.03 mistakes compared to the 16 yr olds who made 1.23 mistakes and the 18 yr olds who made 0.90 mistakes. A mistake was if they clicked on a slide that was not the word they were looking for. In conclusion, this data supports that perhaps the prefrontal cortex of younger people is not fully developed and linked to making more mistakes and slower reaction times while driving. This info supports that perhaps 14 years of age is too young for kids to start driving.

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