

Response Time and Puzzle Solving Skills in Gamers vs. Non-gamers

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ABSTRACT

Video gaming requires rapid response times, problem solving skills, adaptive learning and attention to detail by continuously engaging cognitive and physical reactions to cues provided via visual stimuli. Gaming more than nine hours a week has been said to positively affect individuals' reaction times and problem solving skills. Given the advancements of technology and video gaming, an increase in research on the effects gaming has on motor and cognitive skills has yet to come. **PURPOSE:** To compare the response times and problem solving skills between gamers and non-gamers. **METHODS :** Subject (N=68) were required to complete a survey, the tower of Hanoi puzzle, and a set of ten trials on a MOART board designed to measure response time. Gamers 9+ hrs/wk (N=24), sometimes gamers 1-8 hrs/wk (N=18), non-gamers 0 hrs/wk (N=26). On day 1 participants completed a series of 10 trials on the Moart Board which measured their reaction and movement times. On day two, individuals completed three trials on the Tower of Hanoi which was used to measure problem solving skills. Their objective was to move the stack of blocks from peg one to peg three while following two rules; only move one block at a time, and do not stack a bigger block on top of a smaller block. A one-way ANOVA ($\alpha = .05$) was used to compare the aggregated mean scores in the Tower of Hanoi puzzle and the Response time of the MOART board. **RESULTS:** There was no statistical significance when comparing the groups for puzzle completion and error time when solving the Tower of Hanoi until the third trial. During the third trial of completion the significance between gamers and non-gamers was ($p=0.016$). Response time was only noted as statistically significant when comparing gamers and non-gamers ($p=0.007$). **CONCLUSION:** There was not statistical significance between gamers and non-gamers in many of the trials. However, there was a notable trend in the percent of subjects completing the trial. By trial 3, 80% of gamers completed the tower compared to only 38% of non-gamers. Not only were gamers solving the puzzle faster than the partial and non-gamers but there were more gamers solving the puzzle than any other group. There was no significance between gamers and sometime gamers (0.130) or sometime gamers and non-gamers (0.620). However, significance was present between gamers vs. non-gamers (0.014).