Correlation between results of paper and digital visual attention tests

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Introduction

Nowadays everything becomes digital and that is the reason way this research is done. Digital version of the test makes task easier to understand and accomplish. Trial making test (TMT) is orginally constructed in 1938 and at the begining it was called Partington's Pathways' and it was the part of Army Individual Test Battery.

Purpose is to establish if TMT paper version can be replaced by a computerized version of TMT. Main targets of the reaserch is to make time norms for computerized version of TMT and find out if there is correlation betweeen results of paper version and digital version.

Methods

Participants of the research are students from first to twelve class, their age is between seven and nineteen years. Research is done in the schools were they are learning. Tests contains from two parts – A, B. In the first part participants have to sort numbers from one to twenty-five in ascending order. In the second part they have to sort numbers from one to thirteen mixed with alphabet from A to L. In this part numbers are followed with letters (1-A-2-B). Participants are told that test has to be done as fast as they can.

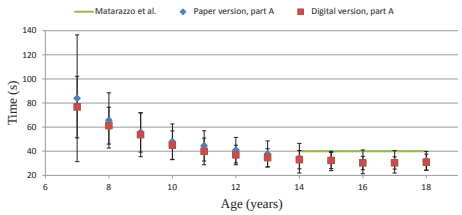


Figure 1. TMT paper time results compared to digital time results

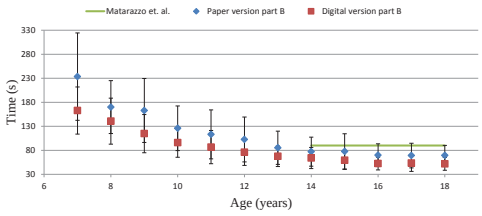
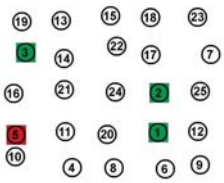


Figure 2. Part B TMT paper time results compared to digital time results



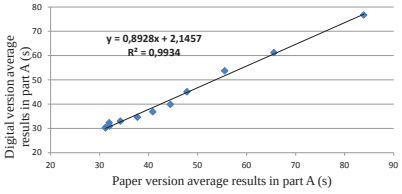


Figure 3. Correlation of part A paper and digital version average values

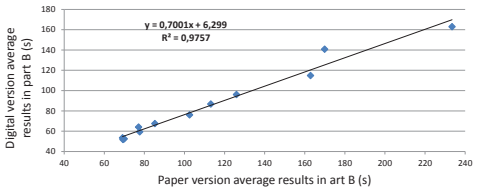
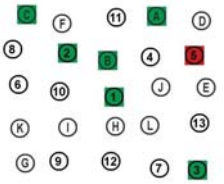


Figure 4. Correlation of part B paper and digital version average values



Results

This reserch included 2432 participants. They were aranged by age, class and gender. The value of referrals differ in part A and B, because those who didn't know alfabet were excluded from task. The norms are made for each age group and they are compared to normative studies by Matarazzo et al. for adults and adolscents which include children from 14 years. Comparison of results shows that data are valid and in norm limits.

Figures 3 and 4 represents correlation between results in paper and digital versions of the test. Correlation coefficient describe that there is correlation between those data, but results of digital version are higher with more errors. Data were compared using ANOVA, the results indicated that after age of 14, time results do not depend on age.

Reference:

1. Strauss E., M. S. Sherman E., Spreen O. (2006) A compendium of neuropsychological tests. Third edition. (655-658)

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