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INTRODUCTION

Spatial ability has emerged as a salient psychological characteristic among young adolescents who go on to develop expertise in STEM (science, technology, engineering, and mathematics) domains (e.g., Lubinski, 2010).

As there was no appropriate tools for measuring spatial abilities in Estonia, the first goal of this study was to construct an original standardized scale to assess ability to generate, retain, retrieve, and transform well-structured visual images. The second aim was to compare the performance levels in the spatial abilities scale between IT and non-IT professionals to evaluate the usefulness of spatial abilities test as a personnel selection method in the information technology (IT) sector.

METHOD

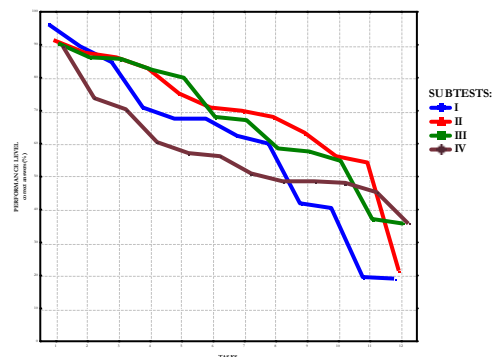
PARTICIPANTS

The data were collected in 2010 using two groups of Estonian-speaking individuals (67% males; mean age of 32.4 years, $SD = 8.2$) with similar educational backgrounds. First, the IT professionals ($n = 176$) were drawn from 7 leading companies operating in the field of information technology and telecommunications in Estonia. Second, 59 professionals were recruited from non-IT related fields of activity as a reference group.

MEASURE

The constructed Tripod's Spatial Abilities Scale (Tripod's RVS) consisted of four subscales (Embedded figure task, Form rotation, Surface development, 3D rotation), each containing 12 progressive time-limited tasks (Figure 1). The RVS had good psychometric properties and all the scores of the subscales were distributed similarly to normal curve. The internal reliability of the total scale was $\alpha = .81$ for the IT specialists.

FIGURE 1. PERCENTAGE OF CORRECT ANSWERS BY SUBTESTS.

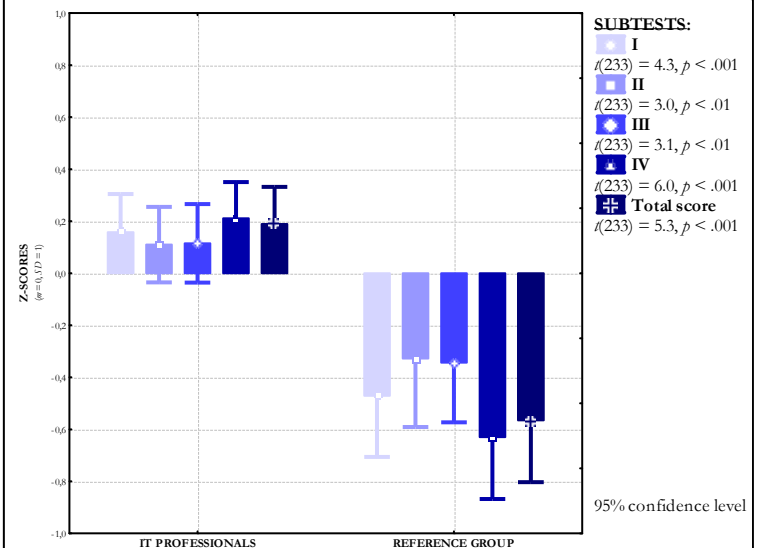


RESULTS

Analyses revealed that the mean scores were significantly higher for the IT-professionals compared to the reference group across all the subscales and total score of the RVS (Figure 2).

Possible effects of gender and language were controlled for. The highest scores were obtained by information systems programmers.

FIGURE 2. THE MEAN LEVELS OF THE RVS SCALE BETWEEN IT AND OTHER PROFESSIONALS.



Notes. I = Embedded figure task, II = Form rotation, III = Surface development, IV = 3D rotation.

CONCLUSION

Assessing spatial abilities with the Tripod's RVS scale has considerable potential to be applied in personnel assessment procedures in the field of IT.

REFERENCE

Lubinski, D. (2010). Spatial ability and STEM: A sleeping giant for talent identification and development. *Personality and Individual Differences, 49*, 344–351.