
HOW TO ENRICH VISUO-SPATIAL FUNCTIONS IN STUDENTS OF THE PRIMARY SCHOOL

M. Fastame¹, P.K. Hitchcott², D. Callai³

¹Department of Pedagogy Psychology Philosophy, University of Cagliari, Cagliari, Italy ; ²Department of Psychology, Southampton Solent University, Southampton, United Kingdom ; ³Secondo Circolo Didattico, Direzione Didattica Statale Selargius 2, Selargius (Cagliari), Italy

Introduction: Visuo-spatial abilities underpin different scholastic disciplines requiring the temporary maintenance or active processing and manipulation of visual (i.e. shape, colour, texture) and spatial (i.e. position) information, attentional and long-term memory processes, such as geometry, geography, drawing, sciences, and entering numerical data in columns (e.g., Alloway & Gathercole, 2006).

Objective: The current research was aimed at exploring the reliability of a training programme developed to empower visuo-spatial abilities in children attending the primary school.

Methods: Before and after training, 224 third, fourth and fifth graders, 108 males and 116 females, were presented several subtests of the Primary Mental Abilities Battery (Thurstone & Thurstone, 1965) assessing verbal meaning, spatial relations and speed of perceptual information processing, respectively. Hence, 104 children were presented the programme method developed by Fastame and Antonini (2011) to enrich visuo-spatial working and long-term memory, imagery, attention, comprehension, metacognitive and problem solving abilities. This programme is composed of both a software and of a pencil and paper components promoting both individual and collective cognitive tasks. The experimental group undertook 15 weekly sessions lasting 90 minutes, in which different activity types were presented by computer and pencil and paper combined training .

Results: Compared to the control group, only at the post test children from the experimental group showed better speed of processing and greater knowledge of spatial relationships and verbal information.

Conclusions: the training developed by Fastame and Antonini (2011) is a reliable tool to empower visuo-spatial processes in primary school level students.