THE COMPONENT SKILLS OF PROBLEM SOLVING: A CHINESE AND HUNGARIAN COMPARISON STUDY

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Problem solving skills have been hotly debated in the current educational science research. With the development of educational assessment, the assessment of problem solving in educational context has evolved from paper-and-pencil to computer based assessment and, in parallel the used problems are also evolving in order to have a better fit for the requirements of real life (Greiff, Holt & Funke, 2013). Problem solving was measured in the most prominent international assessment project, PISA as well. According to the results, China (mainland) belongs to the top performers, while Hungarian students' performance is under the average (OECD, 2014). The main aim of this study is to find the reasons of the difference between the problem solving achievement of the Hungarian and Chinese 15 year-old students by detecting and finding the factors impacting the developmental level of problem solving. We have compared the European and Chinese (mainland) large-scale researches in the field of problem solving conducted by the main assessment centers and institutes. As a result, the mainstream of European problem solving research is about domain-general problem solving (Funke, 1995), while Chinese researchers are mainly focusing on domain-specific problem solving. Research on domain-general problem solving is in the initial stage in mainland China but has shown its great potential. There are several factors that may impact people's problem solving skills, such as some cognitive skills like reasoning (Funke, 2001), memory (Wüstenberg et al., 2012), creativity (Herrmann, 1995) or demographic data (OECD, 2014), learning habits (Mayer, 1998) and ICT literacy (Greiff et al., 2014). As a secondary result of this project a comparison study between Chinese and Hungarian students (age group: 10-12-year-olds) was elaborated. The questionnaires (including ICT literacy, demographic data, learning habits) and the cognitive tests (problem solving, inductive reasoning, visual memory, creativity, working memory, combinative reasoning) measuring the component skills of problem solving will be delivered online through the eDia platform. As a result of this complex data collection the structure of the component skills of problem solving can be modeled and compared regarding Chinese and Hungarian students. Also, it can be indicated how background factors can impact one's problem solving skills. The present study contributes to the issue of assessing and defining the component skills of a cross-curricular skill, problem solving, which is inevitable in successful participation in the 21st century's Western society.

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