18th annual ECSS Congress Barcelona/Spain, June 26-29 2013

Effects of playing behaviour on mental representations and balancing skills in preschool children

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Introduction
For preschoolers associations between coordination and cognitive abilities have been demonstrated, especially in the sector of visual and spatial perception and spatial thinking (Payr, 2011). In the context of decreasing movement occasions for nowadays children, the present study aims to investigate the influence of playing behaviour on mental body representations and coordination skills.
Methods
As part of the School Entry Health Examination 1,489 children (726 female, 763 male, Mage = 5.8 years, SD = 0.3) completed a balancing test (backwards on a 6 cm wide beam) and a man drawing test (MZT) (Brosat & Tötemeyer, 2007). Children's outdoor playing behaviour and playing time with electronic devices were recorded by a parental questionnaire. Using a path model, the influence of these two variables on cognitive representations of the human body (MZT) and to the balancing skills was tested.
Results
All paths in the model were significant ($p < .004$, $chi^2 = 52.4$, $df = 9$, $CFI = .97$, $RMSEA = .057$). Increased playing time with electronic devices was significantly associated with a reduced outdoors playing time (β = - .17) and had a negative im-pact on the performance in the MZT (β = - .08). Both a high level of outdoors playing time (β = .07) as well as a good score in the MZT (β = .11) were associated with better performance in balancing.
Discussion
A well-developed coordination and mental representation of the body are important enrolment requirements. The findings underline that in kindergarten long term use of electronic media have a negative effect on it. By contrast, pre-schoolers, who frequently have motion-based interactions in the direct environment, generate skills that are supportive for the cognitive and motor development.
Literatur
Brosat, H. & Tötemeyer, N. (2007). Der Mannzeichen-Test nach Hermann Ziler. Münster: Aschendorff.
Payr, A. (2011). Der Zusammenhang zwischen der motorischen und kognitiven Entwicklung im Kindesalter. Eine Metaanalyse. Konstanz: Universität Konstanz.

Topic: Motor Learning

Presentation form: Poster