



Risks of ICT Usage and NTC Learning System

Our researches show that children are getting worst every generation. They are worst concerning gross and fine motor skills and concentration. They have poorer vocabulary and poorer general knowledge. Eminent authors in the field of cognitive development, psychology, education and medical sciences describe the connection between movement and development of cognitive abilities (both in children and adults). As a result of a statistical review of the literature (Sibley, B., & Etnier, J. (2003)), it was concluded that there is a significant positive relationship between physical activity and cognitive functioning in children. Piek et al. (2008) ascertained that the development of gross motor skills during the first four years of life is the predictor of cognitive development in early school age, especially of information processing speed and working memory.

There is a big percentage of children living a sedentary life. The results of our research conducted in Serbia, Croatia and Italy on 1286 kids are that nearly 40% of them watch TV up to 3 hours daily, while nearly a bit less than 10% more than 5 hours daily. Some of them are facing the risk of developmental problems (Ružić-Baf, M., Rajović, R., Debeljuh, A., 2016).

Among teens, the use of ICT devices is widely present. Younger and younger children are now using smartphones, a device which has become "a must have" and the life of children would be almost "unthinkable" without one. These devices have replaced the alarm clock, home phone, camera, tablet and other devices. Their use and possession have become a part of the everyday image of young people. Apart from the positive aspects, the use of smartphones has also some downsides. For instance, free time in the recent past, was usually spent in nature, playing, doing sports or other activities enabling children an adequate psychophysiological growth and development. Internet addiction disorder (IAD) is currently becoming a serious mental health issue around the globe. (Lin F. et al., 2012)

The results of the research conducted in the sixth and seventh grades of three primary schools in Pula in 2016 on a sample of 117 students showed that most students spend the school breaks using their smartphone. It is a worrying fact that students use a mobile phone during the classroom hours for purposes that are not related to the needs of that lesson. We have to think about addiction and about the importance of preventive education. In fact, teachers need to constantly educate their students (and student parents) about the benefits and disadvantages of using smartphones and other IT devices (Ružić-Baf, M., Keteleš, V., Debeljuh, A., 2016).

An excellent tool to understand the risk of inappropriate use of smartphones, tablets, computers, and other ICTs is the NTC table (Rajović R, 2017.) This table purpose is proper game selection according to the part of the brain we want to develop. The NTC learning



system is based on neuroscience. Given the dynamics of brain development, Rajović proposed a tool to categorize games according to which specific regions of the brain we want to stimulate. The NTC table lists activities through which certain regions of the brain develop in the early age. The early stimulation is very important. According to NTC learning system, through the early stimulation the child develops fully. The NTC learning system has three phases. The first, and most important for early childhood, is the development of the biological potential. In this phase, motor skill (gross and fine) activities are predominant. The second phase is related to associative learning and the third encourages the development of functional thinking. The goal of the NTC learning system is to let a child learn to think, link information through games that include symbols that are part of our culture. Understanding the importance of early stimulation is crucial to the proper development of children.

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