

- Child development

## Harmful Effect of Video Games in the Brain of a Child

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Children and teenagers who play computer games for a long time could be harmful in their brain development and have more chance of becoming more violent, according to scientist. Based on a new study, children and teenagers who play computer games use only the part of the brain which is linked to vision and movement may lead to violent behavior because other parts of their brains are left developed. In the contrary, teenagers who carry out simple arithmetic exercises also use the part of their brain most associated with learning and self-control. Evidence already shows that computer games are linked to aggression. But it was previously thought that the violence was a psychological result of playing computer games, rather than biological. Based on the latest study by Professor Ryuta Kawashima of Tohoku University in Japan found that frontal lobe of the human brain plays an important role in learning and in turn works hard at keeping behavior in check. He says brains of teenagers and children are undeveloped that is the reason why they often do things they should not. Professor Kawashima found that activities such as arithmetic thicken certain fibers connecting neurons in the brain which in turns strengthen learning and behavior patterns. As a result, he concluded that the more the brain is stimulated, the more fibers are thickened – and the greater ability a child has to learn and control behavior.

Professor Kawashima involved students in the research and given small doses of a radioactive drug, like a dye which allowed a scanner to map out a colorful image of their brains at work. The more activity that took place in the brain the redder the image. The results showed that there was a much higher level of brain activity during arithmetic than with when watching or playing computer games, particularly in the areas of the brain associated with learning. Professor Kawashima has also shown that arithmetic stimulates greater brain activity in children than simply listening to music or reading. In particular, reading out loud can help stimulate the activity in the frontal lobe. Dr. Mark Brosnan, a psychologist at the University of Greenwich in London also studied the effects of computers on children's behavior.

He said that this is a step forward in helping to understand how children's brains react to computers and research already shows that aggression is linked to computer games but the jury is still out on whether it is biological or psychological. But he said, there were some possible contradictions in Professor Kawashima's study.

He said although many computer games are violent, there are some which are not and involve strategy and planning. Such games are likely to activate the frontal lobe of the brain. He also said that the research needs to test younger children because college students are already likely to have developed brains. This means their frontal lobes will be strong and less likely to be affected by violence.