20 Theses from the perspective of Brain Research,
July 25, 2017 Teuchert-Noodt

(1) Brain research shows: The richer a child's former years are filled with physical activities, the better it affects the maturation of mental functions. Children are dependent on a variety of physical movements to anchor real experiences in space and time in their brains. Running, climbing, tumbling, balancing are therefore the initial stimulants. Without them, interconnections in the motor and the downstream brain regions cannot develop normally.

(2) The brain of homo sapiens is not genetically prepared to import mental abilities via apps. Instead, over the first two decades of life, the maturing of differentiating neural networks in the cortex serves to create ever-finer patterns of interconnections in cortical fields - such as writing, calculating, reading and creating new memory contents and also mental performance.

(3) When computers and tablets determine primary-school child learning, the maturing neural networks in associative cerebral fields in the cerebrum become susceptible to neuronal over-activation. The basis for thinking is diminished because the preparation of differentiated connections does not take place.

(4) Digital media, like substance drugs, have the potential to be addictive. This is because limbic circuits in the brain of the child of a highly sensitive neural adaptation of receptors and neurons are subject to any environmental stimuli and to (non-) material drugs. As children fall in love with tablets etc., an indelible desire for more arises, and an opioid addiction enshrines itself in the available circuitry of the so-called "reward system".

(5) It is a fallacy to assume that due to the minimal technical effort involved the brain of children and adolescents can directly take over the handling of digital media from adults. Thinking and remembering cannot be digitally implanted into the brain but can only be acquired through independent learning and memory exercises.

(6) According to brain research findings, the child's brain will not be prepared for a content-related approach to the media for the next thousand years. The human brain naturally matures very slowly and is subject to genetic regulatory mechanisms, which, like clockwork, interlock with one another and are functionalized in an environment-related manner.

(7) The all-knowing smartphone in the school bag automatically releases the student from the effort to really program the necessary school knowledge into the cerebral fields of the brain.

(8) Only learning content that is actively and repeatedly recorded through mental work leaves a living mental concept, training alertness and curiosity, creative thinking and awareness. Only knowledge creates awareness and more knowledge expands the consciousness.

(9) The progressively matured forebrain acting as an overriding control instance can only start to cooperate with the subconscious limbic circuits from adolescence

on. Only then can it consciously prevent an addiction and deal with media in a meaningful way.

(10) The forebrain is man's most valuable possession, which matures in a human's former years through imitation, experience and reflection.
Why would one believe in the digital age that the forebrain can be accelerated along with technical advances? No builder starts building a house with the roof, no farmer plants his newly plowed field with maturing grain, and no society would allow children to take their driving licence.

(11) The forebrain manages the formation of memory, rational thinking and acting and creates cultures. The components required for this are plastic neural networks and neurotransmitters, which the child/ adolescent has to activate over and over again in order to train and make competent neuronal associations. It would be the end of human society if these qualities were replaced by "cognitive computer science".

(12) From brain physiology's viewpoint, the life of digitized children remains doubly endangered throughout their lives: the so-called "reward system" is in charge of directing the forebrain. That is, that the forebrain undergoes a non-invasive lobotomy (the undercut of the ascending dopamine pathway) just as neurosurgeons used to alleviate the condition of mentally very ill people in the last century.

(13) When adolescents expose themselves to a high influence of smartphone and co, the forebrain is decoupled from human space and time processing. But what do we do in the real world with the many virtual worlds specialists?

(14) Only permanently trained muscles perform well. Only the greatest possible self-activation of the cerebrum accomplishes mental performance. Therefore, it is advisable to use the brain (= brainy) more than a mobile or satnav.

(15) Only sustained training of cerebral cortex fields responsible for psycho-cognitive abilities in the associative cortex produces mental capabilities. The "digital assistant" releases the cortical nerve cells of the possibility to think creatively and to acquire a self-determined life.

(16) Brain arrhythmias have recently become the number one common disease. Due to the high use of digital media, brain-specific oscillators and neurochemical metabolic processes lose their necessary basis for communication.

(17) Cyber Attack on Nerve Networks: Media users override parts of the control centre (= forebrain) in their brains. The subsystems that are particularly attacked are those responsible for memory formation and cognitive-emotional performance. This can lead to loss of judgment, trigger anxiety and addiction syndrome, burnout and depression.

(18) For life, psycho-cognitive functions remain under the control of the spatiotemporal work of the neural networks. For the first time in human history - triggered by digitization - this neural basis, which is absolutely necessary for thought processes, is disputed.

(19) Also, and especially from the point of view of the current findings on the capabilities and limits of the human brain, it is urgently necessary in socio-political terms to redefine human workplaces and adapt them to the neural capacities of the employees.

(20) From a biological point of view, the ecological niche of Homo sapiens is specifically due to a newly developed brain structure, the forebrain. Conscious thinking, planning and action puts man into a position superior to all living beings. It allows him to create on this planet his own world of space and time which up till now does not exist in the animal kingdom. Man can establish himself in it and it allows him to develop cultures and cultivate traditions.
Precisely that is being prevented by the digital revolution!