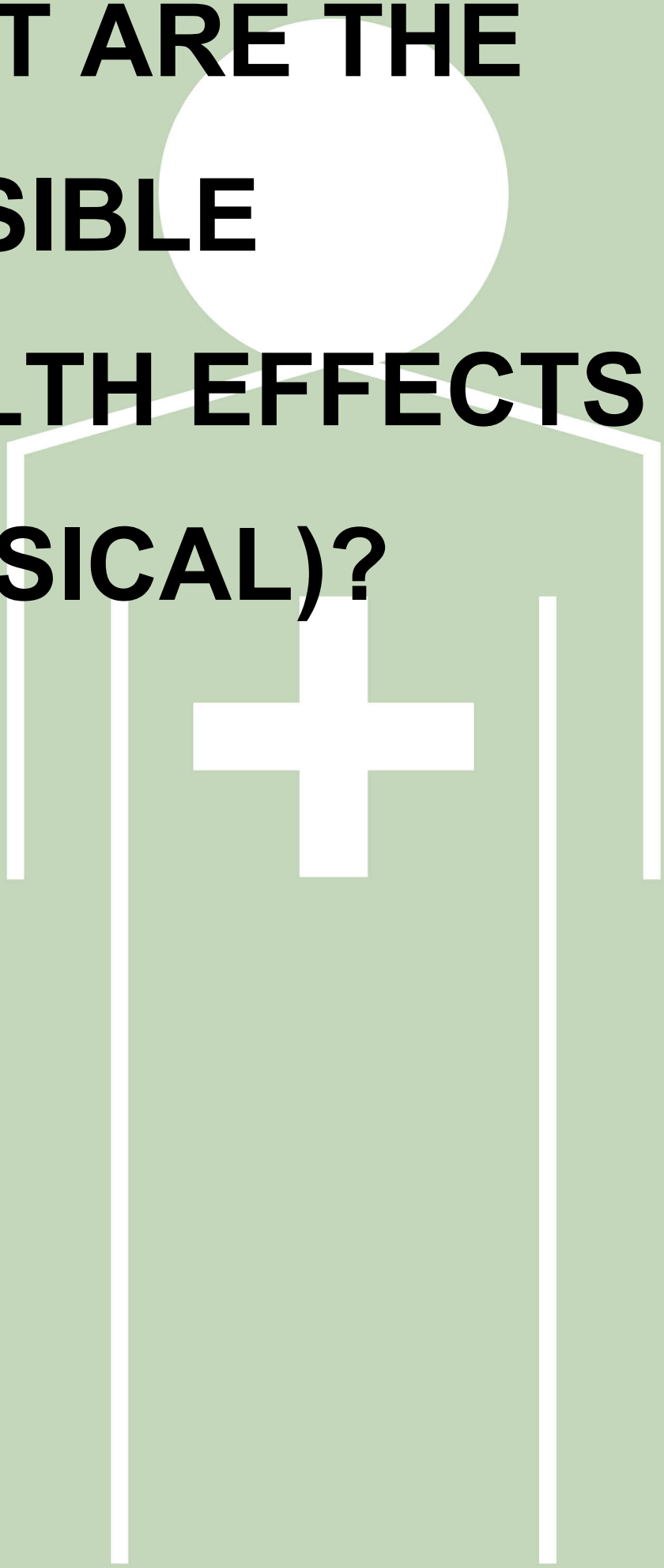
WHAT ARE THE POSSIBLE HEALTH EFFECTS (PHYSICAL)?



Digitisation

In media pedagogy, the use of screen media is considered to be problematic not only when screen times are excessive, but also when negative consequences are to be expected due to either inappropriate content or questionable function (e.g. obsessive or addictive behaviours). For child development, these negative consequences can impact the child's physical as well as psychosocial wellbeing. In general, average screen times in Germany over the past several decades have been twice as high as the maximum levels recommended by the Federal Centre for Health Education.

State of research

Scientifically proven health consequences of problematic use of screen media include:

- Delays in the development of motor skills, including postural defects
- Unhealthy eating habits
- Obesity with subsequent cardiovascular diseases
- Sleep disorders (less sleep, poorer quality of sleep)
- Permanent and temporary/transient myopia or short-sightedness.

There are a number of additional influencing factors that cause these problems. In complex effect models, the use of screen media proves to be an independent factor with a significant negative influence. The strength of the negative effect is assessed as medium to low. However, the younger the child, the stronger the negative influence of screen media. The negative consequences of the use of digital media are explained principally by time displacement: Time spent in front of a screen is not used for activities that foster child development, such as exercise or sleep. Moreover, problematic usage patterns occur more frequently in children from socially disadvantaged backgrounds, who, on average, are more likely to have their own digital devices in rich, industrialized countries. When children have their own devices, usage times are roughly doubled and the use of age-inadequate content is about six times higher.

Purchased for learning, used for gaming

In educational institutions, students spend more and more time in front of screens. The multitude of studies which examine how this affects learning outcomes show inconsistent results. However, there are no sound scientific studies about health consequences of increased use of screen media in the classroom. What we know is: The use of digital technologies in educational institutions is connected to the use of screen media outside the classroom and is related to health consequences in at least two ways (see fig. 1). First, the use of digital media in the classroom increases the existing (on average excessive) levels of screen time for children. Second, the availability of digital devices at home is increased – either through laptops or tablets provided by the school, or because parents purchase more devices assuming that they are helping to improve their child's education. Both are likely to exacerbate the negative consequences listed above. What we also know is that educational staff are seeing increasingly negative consequences of problematic screen use in children's free time (e.g. 'Monday syndrome') and are calling for training about prevention. However, only very few such teacher training opportunities are available at the moment.

Education

Example 1

In a "Learning-PC raffle" in Romania, socially disadvantaged youth were able to win a personal computer. The idea was to enable them to access digital devices and the internet as a learning resource (like their more privileged peers). However, in reality, the devices were mainly used for unintended purposes, resulting in longer screen times and significantly worse academic performances for the 'winners' of the raffle.

Example 2

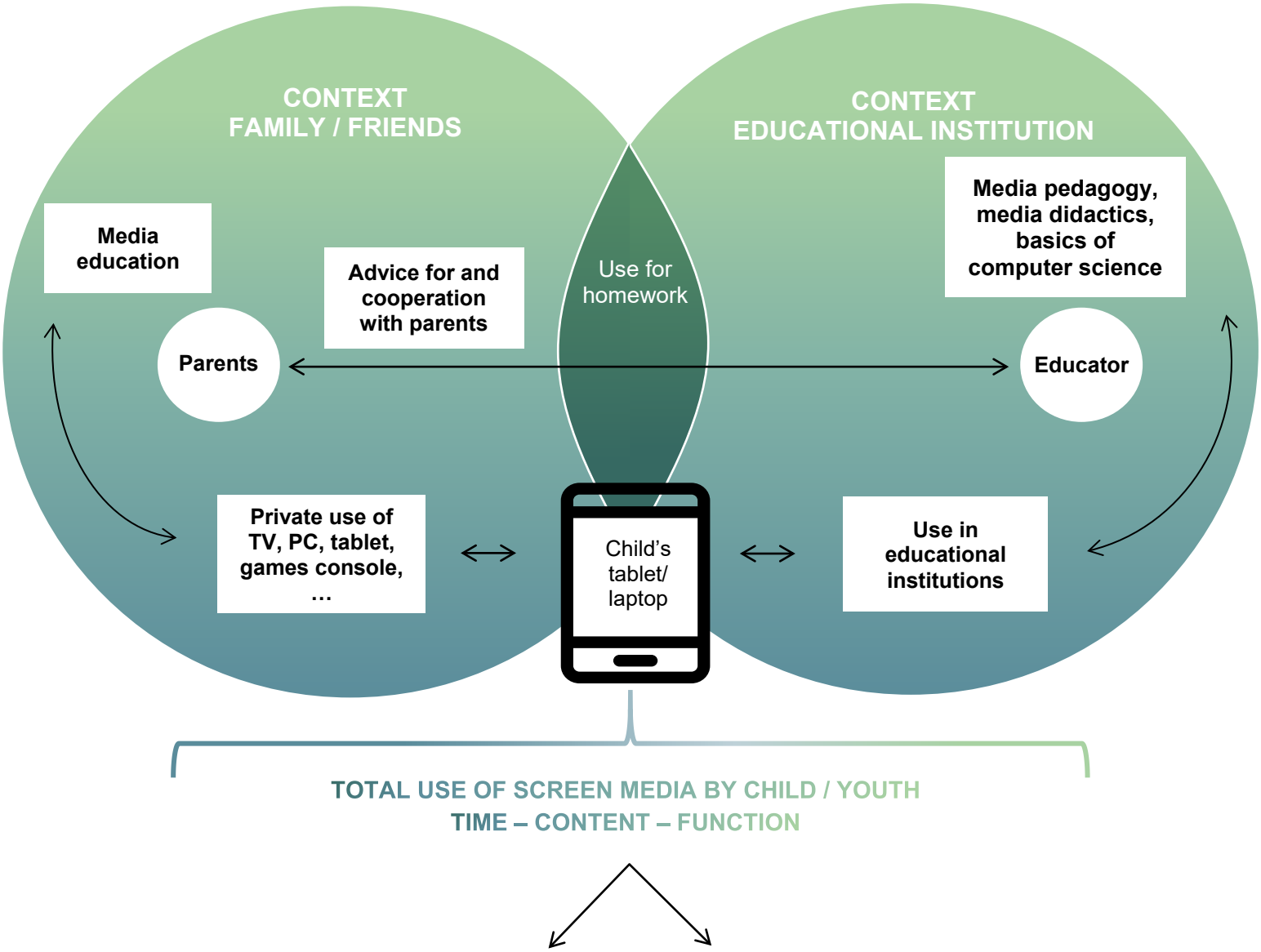
A grammar school in North Rhine-Westphalia, Germany gave advice to parents and included them in the development of a media concept for their school. Together they came up with regulations for mobile devices including: a step-by-step introduction for working without personal mobile devices in the younger classes, prevention measures against media addiction, and prevention against other health consequences.

Example 3

The prevention programme "ECHT DABEI" ("Really Present – growing up healthy in the digital age", earlier called MEDIA PROTECT) for kindergartens and primary schools brings together health promotion and media literacy promotion in an age-appropriate manner. Between 2017 and 2019, the initiative trained over two thousand educators. Roughly eight thousand children saw the initiative's theatre plays, with written material handed out to over eleven thousand families.

Questions

- What can we do to limit the negative health consequences of digitisation?
- Which learning goals can be reached just as well – or even better – without the use of digital technologies?
- Do we as an educational institution have ready-to-use alternatives in case of technological failures?
- Are we cooperating with sports clubs, music schools etc. to support screen-free student leisure activities?
- How can teachers of different subjects coordinate with one another to make sure that students' total screen time does not exceed the recommended amount that is acceptable for their physical health?



TOTAL USE OF SCREEN MEDIA BY CHILD / YOUTH
TIME – CONTENT – FUNCTION

PHYSICAL RISKS	
Disturbances in the development of motor skills / postural defects	Obesity and secondary diseases (diabetes, cardiovascular diseases)
Sleep disorders (duration, quality)	Short-sightedness

PSYCHOSOCIAL RISKS		
Disturbances in social development (language, empathy)	Concen-tration disorders	Loneliness, depression
Addictive use of digital media (computer games, social media, online pornography)	Stress through quantification and measurability; self-optimisation in school and online self-portrayal orders (duration, quality)	

Chart showing the physical and psychosocial consequences of a problematic use of screen media
in children and adolescents taking into account the interdependence between, and factors influencing their use, in private and educational contexts.

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UNBLACK THE B</>X

UNBLACK THE BOX is a network initiative founded in 2019 by researchers from education science, sociology, information technology, media and health education, as well as teachers in schools, universities and pedagogical training. Our goal is to enable educational institutions and teachers to respond to the growing datafication and digitization of education with enlightened, critical and conscious decision-making, even without extensive IT knowledge.
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