Learning from technology, the concrete, and the threat of nature deficiency

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In Denmark, ninety-five per cent of three to six-year-olds have access to a tablet at home (Christensen, 2015) and to digital media in daycare (Socialt Udviklingscenter et al., 2015; Sharkins et al., 2016). Older children increasingly use the Internet as part of their daily lives via smartphones, while books have been all but replaced by iPads in so-called ‘iPad schools’ (Flewitt et al., 2015; Schilhab, 2017). To an ever greater extent, children head online to gather information and learn (Holloway et al., 2013).

In Denmark, 70 per cent of children aged seven to twelve are active YouTube consumers (Christensen, 2016). Their online activities present ever more opportunities to communicate and exchange text, pictures, and links via social media sites, such as Facebook, Snapchat, and Instagram.

Alongside the increasing use of technology is a decline in outdoor experiences (Fraser et al., 2010; Wohlwend, 2010), leading to what is known as ‘nature deficit disorder,’ where technology-based communication and indoor activities come to replace learning and playing outside (Louv, 2005).

What happens to learning if we acquire knowledge about the world through 2D-media and not in the physical, 3D-world? (Hattingh, 2017; Troseth et al., 2018).

Is a child’s understanding of the world compromised and what consequences does a lack of contact with nature have on learning in general?

From a biological perspective, understanding relates to perceptions and experiences. We understand as a result of embodied sense-making. And phenomena, episodes, events or occurrences make sense when they feel like something concrete that we may experience.

In this presentation, I draw on central themes within the embodied cognition paradigm in contemporary cognitive science to discuss what happens to perception and learning when engaging with the physical 3D-world is switched for engaging with 2D-media. My aim is to unravel what natural environments and 3-D experiences offer learning in light of the embodiment of knowledge. Special emphasis is on how nature-bound perceptions seemingly leave room for mind wandering and spontaneous thoughts which are under increased pressure from the mobile technology induced controlled thoughts.

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