**Using makerspaces as an opportunity for involving children in the development of Virtual Reality content and play**

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This paper reports on the German part of the MakEY project that considered how makerspaces can provide opportunities for children to create in Virtual Reality (VR). ‘VR is fast becoming a reality, with estimates that over 200m headsets will have been sold by 2020, and the market value for VR hardware and software reaching well over $20bn by then’ (Yamada-Rice et al, 2017, p.4). Reactions to children’s use of immersive technology have predominately focused on health impacts (e.g. vision, balance, sense of self). Bailey & Bailenson (2017) also found that research about children and VR has predominately focused on those with medical needs or learning difficulties.

Yamada-Rice led a previous in-depth commercially-funded study for Dubit, a digital games company that consisted of a large-scale global survey on children’s access to and knowledge of VR, which concluded that:

‘beyond basic questions…it’s critical…to ask how children can learn to critique VR content. As with any medium, we should want young people across cultures to be critically literate - choosing and engaging thoughtfully across diverse VR content, but also to be content creators themselves’ (Yamada-Rice, 2018 n.p)

One of the study’s key findings showed children wanted to take a physical object into VR to feel more grounded, which became the focus for the German MakEY case study which will be discussed thereafter, specifically reflecting on the potential of makerspaces to allow children to create VR content and take physical toys into this space to play with. This offers a means of enabling young children to participate in an environment from which they might otherwise be excluded. Insight will be provided on how children create in/for VR, differences between creativity in physical and virtual spaces and how these process can be used to provide children with a way of critiquing VR experiences by understanding better how they are made. As Ingold (2013) states, historically and presently there is a strong human connection between making and knowing. These insights are important because as VR grows it seems likely that children will access top-end devices in shared spaces, of which makerspaces could be one, and inclusive practices are important to consider in this context if the technologies are to benefit children across all ages, and all social and cultural groups.

**References**

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