Technology driven prevention: supporting development of resilience

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Technologies have already found an important role in detecting and helping treat mental health difficulties. However, much less is known about applying technology within prevention approaches, with the aim to promote resilience of those at risk and mitigate the occurrence of mental illness later in life.

My research seeks to understand how technology can meaningfully support the development of specific aspects of resilience—such as self-regulation, coping with stress, or conflict resolution—in real-world contexts. These competencies are consistently shown as a basic requirement for a happy and fulfilling life, with effects on life outcomes comparable in size to those of IQ or family social status.

Despite the long history of designing for interpersonal interaction in HCI and CSCW, little is known about what the key challenges involved in fostering social-emotional competencies are, if and how technology could meaningfully help address these, and what might be the underlying learning mechanisms and design principles guiding the design of such systems. Our initial research in this area focused on two long-term case studies: an extensive study of social-emotional learning programmes in primary schools leading to a TOCHI review paper [2] and a proof-of-concept system [4, 5]; and 3-year long engagement with an MA counselling course in Nottingham, resulting in the design of a reflection tool that is now fully embedded into the MA program [1, 7]. Combining the research findings across the two social-emotional learning contexts, my collaborators and I have developed a 'Reflective Practicum framework to support transformative reflection within personal informatics [3], receiving Best Paper Award at CHI17.

If this initial work can be seen as mapping the opportunity space at the intersection of HCI and social-emotional learning, the two current projects are moving on to examine novel intervention mechanisms: the first project explores the potential of physical computing and smart textiles, as a proof-of-concept example for physical interventions that can be situated directly within childrens everyday practices. The second examines the opportunities for social-emotional interventions in digital multiplayer worlds, where children spend more and more time while encountering many interpersonal challenges arising from gameplay; with initial results presented at this year's CHI [6]. Both of these projects rely on international collaboration—including Anna Freud Centre in London, Oxford University, UC Irvine, Cornell University, UC Santa Cruz, and Committee for Children (CfC)—to bring complementary skills and expertise.

A common theme across all of these projects is developing an understanding of how the well-established learning mechanisms from formal training contexts could be re-interpreted into technology-facilitated interventions in-the-wild: delivering situated interventions that fit into participants everyday lives. By developing and deploying interventions across varied contexts (such as a counselling training program, a tangible smart toy, or an online gameplay), the research programme aims to not only address specific social-emotional learning challenges, but also to identify the overarching design mechanisms that can inspire new models of technology-facilitated interventions.

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