Infrastructuring digital citizenship

Position paper for *C&T '17 workshop DESIGNING PARTICIPATION FOR THE DIGITAL FRINGE*
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1 INTRODUCTION

The Maker Movement is providing tools and infrastructures to unleash people's intrinsic ability to create, make, and innovate. This unleashing of creative processes refers to higher-order skills – such as digital literacy, creativity, critical thinking, problem solving, as well as collaboration and communication skills – that are commonly accepted to be essential for successful participation in society. Though the question remains ***where*** and ***how*** these skills can be learned. In previous work an initial infrastructure has been designed, where students learn how to use the latest digital technologies that are challenging traditional academic curricula, to explore where and how such creative and digital skills can have a place in education. The resulting lab for applied creativity, includes an official FabLab extended with a strong emphasis on electronics and sensor devices, the Internet of Things, and Open Data; the lab is at the heart of the school's curriculum, but also a creative hotspot open to citizens enabling making and prototyping a space for participation and co-creation (see for details Mostert-vanderSar, Mulder, Remijn & Troxler, 2013; Mulder, 2015). Interestingly, learning by collaboratively designing not only worked for the students, also the urban stakeholders learnt. In the remainder, two recent projects are introduced to elaborate upon this collaborative reflection and shared meaning making aiming to trigger a broader audience. In the workshop, more detailed insights illustrating how ***collaboratively designing*** enhanced digital literacy and digital citizenship are shared.

2 EMPOWERMENT THROUGH MAKING

Mulder, Pucci, and Havenaar (in press) used the same co-creative approach to broaden social participation in society through making digital fabrication technologies accessible to children and young adults living in low socio-economic communities in two different Dutch cities. Here, the bottom-up participatory design approach explicitly paid attention to the inherent learning potential of digital natives, and consequently, enabled reluctant learners or dropouts to transform into empowered individuals. Likewise, shared ownership of their co-creative process appeared key. It ensured a more effective and lasting learning experience, and enabled participants to shape their own explorations and learning activities in order to become co-learners and co-creators of knowledge. Finally, the lab itself appeared to be an important node for establishing a physical and digital learning network enhancing digital participation while lowering the threshold of access to digital fabrication.

3 BOTTOM UP HACKATHONS

Furthermore, the Horizon2020 CAPS project entitled ***Open4Citizens*** aims to broaden citizens' skillset towards meaningful use of open data (Morelli et al., in press). The corresponding Opendatalabs help in overcoming the cognitive gap the majority of citizens may have with respect to open data by making knowledge available, where citizens will experience the practical value of open data in the conception, modification, adaptation, and maintenance of urban services, and explores hackathons as new forms of collaboration through explicitly connecting bottom-up initiatives and top-down policies, through dialogue and co-creation. As open data are seen as a new common, the Opendatalab clearly distinguishes itself from related initiatives which are oftentimes data-driven as they start with a given open dataset, with a focus on empowering citizens in making meaningful use of these data and to support existing citizen initiatives. Preliminary results showed that bottom-up hackathons not only create civic engagement and data awareness but also demonstrated that digital citizenship pedagogy opens up new participatory ways of city-making.

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