

Emotion Capsule - A New Form of Communication Designed Together with Teenagers

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Abstract

As of today digital technologies have entered the field of education, introducing new possibilities of getting and sharing information and continuously changing the way we communicate. Starting from this phenomenon, COSTORY project asks critical questions about the use of technology, involving teenagers in the design process, to explore and fulfill their needs and desires through a practice-based action-research. The research first implied a series of co-design workshops involving 24 participants (14-15 year old) in Scandicci (Florence) and the tangible result of this process, a smart object called "Emotion Capsule", was created. Later, the object has been tested and shared with various cohorts of students in 12 classrooms (9-15 year old); overall the project involved 350 students in the different phases of the project. The activities were observed and analyzed from ethnographical and design perspectives. This article addresses the methodology and tools used during the first workshops and addresses new anthropological questions related to technology and new forms of social communication resulting from the experiences with participants in the project.

Keywords: *emotion, co-design, technology, action research, anthropology of education, digital anthropology;*

1. Introduction

Today's children have access to digital technologies that offer them limitless information and connection, to the point of affecting the way they experience the world around them. Being a child in this network society produces countless benefits and poses new, unforeseen challenges as it brings about problems concerning *relation, identity, privacy, bullying etc.* [1]. Moreover, children relation with technology has drastically changed: they are no longer mere consumers of digital information, they have become producers of digital content or even new digital devices. To make them active participants in developing new technologies, there are educational initiatives related to programming and robotics [2]. All those activities warrant a more integrated process of co-projecting and an ethnographic analysis to begin with, to enhance kids' awareness of how technology works and make them see it no longer as a closed box, but as an open system that is easy to play, hack and invent.

In our experience children become design partners [3], in each step of the design process; researchers and 'informants' in collecting data with their 'MyTechDiary'; testers of the prototype and finally users of the final object.

2. Designing Together with Digital Natives

This paper presents the ongoing research project COSTORY, inspired by the methodology of cooperative learning [4], and of action-research [5]; it is part of a larger anthropological and educational project named 'Sguardi Oltre. Esperienze ai confini del Quotidiano' aiming at improving and enlarging the space for interrelations in the schools.

The action-research originates from the request to face problems aroused during the co-project phase from teachers, parents and school directors, who have reported difficulties in interpersonal relations, bullying behavior and altered perception of oneself and of the other, instead of facing bullying behaviors directly, something that may jeopardize the efficacy of the action. As one teacher reported 'teens work on such matter without being aware of it'.

The anthropological project has faced the issue obliquely, through lateral tools, though central to the resolution of the problem. Among them, enhancing a creative and critical approach to new technologies aimed at growing their awareness and finding personal resources to solve the issues mentioned above.

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3. Methodology and Tools

Co-design workshops took place at first in a public secondary school with 24 individuals (14-15-year-old). The instructors (an anthropologist and a design researcher), and the class teacher being present, conducted 4 weekly iterative design activities. A single workshop took 3 hours and entailed various activities: summary of the previous week activities and reflections (except the first day), presentation of the new activity, design activity, presentation of ideas and short discussion. The project was later replicated in further 12 classes, and has involved a total of 350 children and teens of primary and secondary school cycles. In this paper, we will focus only on the first phase.

The workshops were conducted by using various design tools developed to enhance children participation and imagination for generating ideas of smart objects. These tools were given to every group of participants during the first meeting in "The Futuring Box" encompassing: Round-Table paper indicating the roles and design questions What, Where, Who, Why, role stickers: Team Captain, Mediator, Reporter, Recorder, (roles to be played according to the methods of cooperative learning [4]), 'MyTechDiary' with 10 activities -interviews, observations, etc.- to reflect on usage of technology in daily life. The participants kept the diaries during the workshop period, and compiled them at home. Cooperative learning gave each participant the chance to have equal roles in decision making. This method has an important impact on learning new skills through working in groups to accomplish a common goal [6]. At first anthropological sight, such modality has allowed an approach to the activities based on a more relational and collaborative mode, to which the teenagers were not used in their schooling routine. In fact, despite they live the experience of closeness in the classroom, such activity has evidenced their reluctance to collaborate and the embarrassment provoked by this free working mode where physical contact is stronger. Such aspect has emerged already in the course of the first class activity, when teenagers changed from a rigid posture and physical detachment to a more relaxed one, in search of a visual and bodily contact with their schoolmates working in the same group.

The workshops were conducted in the following way: 1. Presentation of the project, warming up of motivation, and confidence in the group's participants. Round-table idea generation. 2. Scenario building with the interactive objects 3. Role playing - group plays. 4 Testing and verifying the prototype.

The most significant theme that emerged during the first session was "self-communication". The groups were developing concepts of smart objects to face problems of communication, lack of physical contact, singling out their needs to express themselves.

Based on the anthropological observation and results of the first workshop, the designer developed 9 different interactive objects - "things to act with" [6]- to be used in the second workshop to turn the concepts into tangible ideas (Fig.1).



Figure1. Interactive objects for triggering tangible interaction in scenario building

Modular Bluetooth-connected sensors and actuators [7] were embedded into the objects and given to each group to further develop their ideas by enacting the product scenarios. The modularity of the objects gave them the possibility to de-construct and re-construct them. In this workshop, the participants worked in the same groups, but exchanged their roles. Each group developed a scenario for their smart object, focusing on self-expression, and wrote/drew their scenarios on sheets provided. In the end of the workshop, each group's Reporter presented their scenarios. The anthropologist worked to facilitate the group to get to a consensus as to how to develop one idea; it was chosen to be further developed as a working prototype for the next workshop.

4. The Emotion Capsule as a container of stories

It was developed based on smart object scenario chosen in the second workshop. Although the participants imagined a big scale object, the designer proposed a small scale one, dubbed by students at the end of the process "Emotion Capsule".

The Emotion Capsule is a digital/physical container and storyteller. It contains stories told by children and further shares them *when activated*. The capsule is made of wood and 3D printed PLA (plastic) material, embedded with Samlabs [7] (light sensor, RGB Led) and a Bluetooth speaker (Fig.2). When activated, the capsule plays a random sound file.



Figure2. Emotion Capsule prototypes (Final one is on the left end)

After an introduction of the capsule, a series of activities (role play, group playing etc.) were conducted by the anthropologist, connecting the capsule to the theme of 'communication'. The activities created ad-hoc have activated forms of free and creative writing whereby anonymously they could narrate personal stories and thoughts about the topic of multiple discriminations, all with a very high emotional content. In the following meeting the anthropologist has proposed the use of the capsule to listen to their thoughts, provided they would have stayed anonymous and no parts of them could be attributable to anyone. The kids accepted it and the written texts were collected and recorded as a sound file with an anonym voice during a 30 minutes' break. The sound files were uploaded into the capsule and in a following session of the workshop, the participants sat in a circular setting and one by one activated the capsule to hear a random story written by someone in the class. They heard the sentence written by their fellow classmates without being able to ascertain who wrote what. The testing session finished with a discussion on the actual object and how this object should be called, such as emotion capsule, story capsule, mirror of the soul, etc.

5. Conclusive thoughts

The anthropologist had to motivate the participants and was required to closely monitor the activities to provide them a key to understanding what was emerging from the group. The designer had to come up with ad-hoc solutions, quickly and effectively, to be applied in the next workshops. To achieve a tangible result, the designer acted as a mediator who translated the ideas of the participants into real-life objects by resolving formal and technical details. The anthropologist and the designer's roles in this phase were crucial to welcome the right inputs from the participants and turn them into new proposals which would be returned to participants to iterate on the new idea.

The dialogue between school and anthropology has evidenced the quality of ethnographic research as a tool for having the complexity emerge that the practices of the school system tend involuntarily to obscure. In fact, the anthropologist serves as a *trait d'union* between a general theory of learning as educational experience and its practical effectiveness and utility, so that the result may be something that makes sense as it is rooted in the real needs of schoolboys. The process of authoriality that characterizes the method of research brings the collective researcher (student, teachers, professional researchers) to produce together with others [5]. In such a context, the teacher too abandons a rigid posture of control to become a co-actress in the production of knowledge of the (new)group.

For the method of research, the anonymity adopted enforces the "contract" based on trust that the teens had subscribed. Through the safety of anonymity, the teens were able to accept the anxiety and vulnerability that led them to withdraw their thoughts and feelings, so that they could write without impediments.

Everybody, during the communicative/sensorial experience with the prototype listened, touched, observed what came out of the capsule, entering relation with the most intimate and corporeal dimension of their peers. If the most authentic mode to get to know someone is that of understanding him/her from his/her viewpoint, once aware of not being able to perfectly understand the other, the teens had the opportunity to experience a mutual relation.

After such activity, as emerges from the reports collected, the general perception in the classroom changed substantially.

Through a creative, active, participated, empathic and above all, not moralizing and judgmental communication, it was possible to reach a sense of community and liberation that was variously voiced by the participants. For many, listening to their thoughts has been the opportunity to confess a secret feeling, to express their rage, to come to terms with an unacceptable emotion; others have seen in it a tool to facilitate the interpersonal and intergenerational dialogue.

The predilection for an ethnographic analysis and the dynamic idea of culture, seen as something continuously created, orient the learning action in the creation of a path that, even if defined in its fundamental aspects, is kept open and susceptible to change and therefore becomes a producer of cultural and social innovation.

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