Youth interests as vehicles for the acquisition of technological competence: Insights from two participatory projects

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I. INTRODUCTION

This work-in-progress paper will provide insights into two educational research projects that are currently conducted by a research group at IFZ. Both projects use youth interests as a vehicle to the acquisition of technological competence [1, 2, 3]. One of them – useITsmartly – seeks to make adolescents aware of the environmental consequences of IT-use. The other one – transFAIRmation - aims to encourage critical media reception and political participation through media analysis and remixing. Technological applications thereby act as carriers of potential for (political) media participation or creative tinkering to save energy. The aim of this work-in-progress paper is to outline the underlying ideas and current stages of the two projects and to discuss their methods and implementation of the vehicle theory.

II. TWO PROJECTS, ONE APPROACH: VEHICLE THEOR

The vehicle theory has been developed by Isabel Zorn and Anita Thaler in the face of an alleged lack of interest young people show for technology [4, 5]. As digital natives [6], however, they grow up in a technological civic society [7] where many technologies are embedded/pervasive and not recognised as what they are. One could say that young people interested in technology-related fields but they are not aware of their technological relatedness. Therefore, it is important to promote technological competence [1, 2, 3] in educational contexts. Technological competence comprises not only the skills needed for the application of technological artifacts but also a reflexive knowledge of their social, ethical or environmental impact. The vehicle presents the technology-related field young people are interested in (music, photography, TV series, fashion, etc.) through which awareness for the embedded technologies and related issues are promoted. In two previous projects with Austrian schools, the vehicle theory has already been successfully tested as a didactical approach – using music as a vehicle to get high school students interested in IT [5, 8] and photography as a vehicle to raise awareness for issues of the representations of gender and technology in the media [9].

A. useITsmartly – Environmental peer-to-peer education for youths with focus on smart use of Information and Communication Technologies

This project (funded by the Intelligent Energy – Europe (IEE) program of the European Commission) aims to increase the awareness of youths for environmental impacts of IT use and how to save energy by using IT devices smartly. The invisibility of the seemingly immaterial, virtual services and goods and their effects on energy demand and on the environment are a challenging field of action connected to Europe’s 2020 goals. The project wants to close the still existing knowledge gap on adolescent IT practices by developing innovative solutions to facilitate young people’s capacity building of smart IT use. Furthermore youths themselves are raising ideas on how to reach peers with this topic.

UseITsmartly draws on two educational approaches successfully tested in previous projects: the vehicle theory [5] and peer education [10, 11]. In order to build capacity for (and get young people involved in) something that seems either little attractive or difficult to access for them on their own, it has to be made accessible via a vehicle [5], i.e. something the target group strongly identifies with or something that is an integral part of their everyday lives.

For each school involved in useITsmartly, a vehicle will support the multipliers in accessing the topic at hand (smart and green IT use) by experimenting and creating an innovative product or IT practice themselves which they can use or apply, to give an example for smart and green IT use to their peers.

One example to illustrate how the vehicle approach could work for useITsmartly could be solar fashion. It could be elaborated by pupils of a vocational school with a focus on design and fashion, who also would become IT-peers in the course of the project. The idea is to have them design and create fashion items (e.g. bags, jackets, etc.) that bear an additional function such as e.g. a solar charger for IT devices (mobile/smart phones, MP3 players, etc.). They could also be supported by professional designers so at the same time the youths would get insight into a field of further education and occupation. Working on their own ideas would help these future IT-peers to access solar energy and photovoltaic technology and to build capacity for making use of these technologies.

In order to measure the success of the respective vehicles, the following indicators have to be monitored:

- the level of motivation and satisfaction of the youths involved during and after working on their projects (e.g. by using a ‘mood barometer’ and occasional surveys to collect feedback) and
- the development of the underlying technological competence (i.e. not only the skills needed for their
application but also awareness for their environmental impact). This is measured by a survey before and after applying the vehicle approach, collecting information on initial experience with the topic and how this experience has advanced in the course of the project.

Currently the consortium is conducting a series of focus groups within the target group of young people aged 16-20 across five EU-member states (Austria, Denmark, Germany, the Netherlands, and Norway) to gain a first insight in the various types of adolescent IT-use practices and environmental awareness. The analysis of the focus groups will lay the groundwork for creativity workshops and peer-to-peer education. Based on ideas gained in the creativity workshops in each country vehicles will be identified, i.e. topics of major interest for potential IT-peers, and didactical concepts will be elaborated on how to make use of the topics to trigger green IT use. However, it is important that the actual ideas will be brought up and will be developed together with the young people involved; this assures a higher target group acceptance when it comes to the transfer and dissemination of related contents in schools.

B. transFAIRmation - Transformative work on media with ICT as means for participation in political discourses exemplified by fairness in pop culture

TransFAIRmation is a regional project funded by Zukunftsfonds Steiermark and conducted by IFZ in cooperation with teachers and 53 12-15-year old pupils of a secondary school in Graz, Austria. The ultimate object of the project is a didactical concept suggesting political remix video (PRV) as a pedagogical and didactical instrument promoting technological competence, critical media reception, social skills and an awareness for how media technologies facilitate political (media) participation. The vehicle used for this project is defined by the TV-series the pupils involved like to watch. The technology-related activities aimed at are remixing original film material and thereby transforming unresolved scenes of discrimination into critical (political) statements.

The heart of the project consists of three phases: The first one is to discuss the idea of fairness in its various meanings during school lessons. In transFAIRmation this was done throughout two weeks fully dedicated to the project. The pupils, teachers and researchers involved discussed topics like mechanisms of inclusion and exclusion in education and politics, discrimination against minorities such as handicapped people, different ethnic groups, LGBTQs (lesbian, gay, bisexual, transgender, and queer people); sexism and human rights were raised as topics as well as environmental justice. In the course of this phase the pupils were already occasionally confronted with episodes of two of their favourite TV-series (“Two and a half men” and “The Simpsons”) in order to get familiar with the material to be analysed in the second phase of the project. The next step is to skim through episodes of both series to identify unresolved scenes of discrimination or scenes of ‘good practice’ in regard to fairness. Scenes selected in this media analysis are then to be remixed in the third phase of transFAIRmation. As the project title suggests, it is about transforming stories from ‘unfair’ to ‘fair’ plots or to highlight role models in this matter. The pupils not only acquire technological skills for applying media technologies for creating own videos but also learn about the potential of self-expression, stating one’s (political) opinion and participating in the public space created by internet technologies.

III. DISCUSSION

Both described projects are in their first empirical stages. UseITsmartly is currently gathering data by conducting more than 15 focus groups in Austria, Germany, Denmark, Norway and the Netherlands. TransFAIRmation started with the beginning of the 2013-2014 school year and began the process of familiarizing the students with various kinds of discrimination (sexism, homophobia, racism etc.). The first stage of the media analysis is in planning.

The vehicle theory approaches differ when the two projects are compared. UseITsmartly is trying to create a reproducible set of creative technological applications that will support the peer-to-peer education among youths to increase smart and energy efficient IT use practices. Contrary TransFAIRmation is using the media analysis of popular TV-shows as a pre-defined vehicle to engage youths with various social issues. A comparison of these two vehicle theory implementations will provide further impulses for the practical use of this method.

In both projects one of the challenges raised so far is the inclusion and continuous collaborative work with the specific target group of youths. On the one hand, in useITsmartly building awareness about green IT use in youths ranged between 16-20 years old in five different EU countries. Here aspects of access, inclusion of a diverse teen population and a variety of domestic situations in youths (living at home, residential schools, flat-sharing community) has taken into consideration when IT practices and sensitiveness towards greener living or green IT use is of central interest in this project. On the other hand, transFAIRmation comprises work in a regional context with a heterogeneous group of students aged 12-15 (variety of competences, skills, educational background and learning disabilities), remains a challenging issue for the continuous development and achievement of the project goals.

REFERENCES


