

Jugend hackt

<CONCEPT>

Jugend hackt is a program designed to promote young coders. While competitions such as 'Jugend musiziert' and 'Jugend forscht' have been established in Germany for decades, there are very few opportunities for young talents in the area of software development. To fill this void, Open Knowledge Foundation Deutschland e.V. and mediale pfade started to organize Jugend hackt in 2013. Since then it has become a successful and well-established hackathon for young coders from all over Germany.

"To code a better world" - that is the slogan of Jugend hackt. Together with like-minded peers, its participants use Open Data to work on prototypes, digital tools, and concepts in order to contribute to their vision for a better society. Volunteer mentors with technical expertise guide them through this process. It is the goal of Jugend hackt to empower young coders in their technical skills, show them creative and political opportunities to apply these skills and thereby foster experiences of self-efficacy.

<SELECTION OF MENTORS>

The mentors are a core aspect of the program's concept. It is their task to guide the young coders with help and advice, from the development of ideas to their realisation. The mentors are highly experienced and skilled developers, designers, scientists and hardware-experts. Many of them are recruited from the technical environment of the Open Knowledge Foundation Deutschland, including its nationwide network of experienced developers found in the OK Labs. OKF DE also has strong ties with the Chaos Computer Club. Before every event there is a mandatory workshop for the mentors in which they are trained by Daniel Seitz, the project's leader of media education. Additionally, at least one trained media education professional is present for the whole duration of every event.

<SCHEDULE OF THE WEEKEND>

The participants arrive **friday** afternoon. After an official reception and an introduction game, short input talks are held. These may contain information on a given thematic focus, interesting data-sets for certain issues, visual thinking,

available hardware and the developer platform GitHub. Thereafter, the young coders form groups based on preselected topics provided by the organisers. In the past, these topics included e.g. education, society, the environment, and surveillance. They then discuss these topics in a guided brainstorm session. In the course of this session, they develop project ideas which are presented for all on a poster.

On **saturday** morning, the participants and the mentors get together in project groups. Then, an intense working-phase begins in which the groups are meant to efficiently use the time to advance their projects. In the afternoon, short optional lightning-talks (approx. 15 minutes) on various technical and digital topics are held by mentors or external experts. Additionally, one or two mentors already advise the adolescents for the final presentations of their projects on Sunday.

On **sunday**, the groups have a short timeframe to add finishing touches to their projects. Around noon, the event is opened up to the interested public, friends and family. The presentations themselves are also a central aspect of the event. They offer the participants a stage to present their skills and ideas, which in turn is a strongly rewarding experience that they often lack in every-day life. They learn, that their technical skills empower them to have a societal influence.

<STRENGTHEN THE COMMUNITY>

The exchange with other peers is at least as important as the experience of self-efficacy and the public attention given through the presentations on stage. For many, it is the first time that they can apply and share their skills with like-minded individuals. Moreover, the contact with mentors and other experts offers inspiration for their own professional perspective. Results, example projects, measurable outcomes

<THE PROJECTS>

The program's efficiency can be understood most clearly when looking at the projects developed by its participants. In the short time-frame of a weekend they realise ideas in the realm of soft- and hardware (<http://jugendhackt.de/projekte>) that are challenging but also highly relevant to society: 'Awearness' is a self-designed and 3D-printed bracelet, that vibrates once one enters the vicinity of a surveillance camera; 'TreeFi' is a working model of a WiFi-hotspot within a tree, that is operated with electricity generated with a bicycle or a swing. The female team-members of 'TreeFi' considered Internet access a basic right, but also wanted to create

awareness for the environment. 'Dein Müll' ('Your Garbage') is an app that encourages its users to recycle their garbage in a playful manner. 'Game of Life' is a game, that intends to show how different privileges impact the course of our lives.

<SCIENTIFIC EVALUATION - MEASURABLE OUTCOMES>

The scientific evaluation of the program further indicates its efficiency. The impact analysis made using pre- and post-tests has shown, that the self-perception of the participants has significantly aligned with their definition of a prototypical developer. On the one hand, this means that Jugend hackt strengthens the positive relation of its participants with their own technical skill-set. On the other, it indicates an increased probability of the participants giving preference to an informatics-related field when making future professional and career choices. The participants' preference for working cooperatively and learning in the context of project-based programming was also significantly higher after the event. This indicates that the participants have recognized the value and the advantages of working cooperatively and have gained in their own competency in this regard. For an event of comparatively short duration these statistical significant results are exceptional and emphasize the intense character and unique quality of Jugend hackt. One can find the whole evaluation here (German): <http://jugendhackt.de/files/2015/03/Jugendhackt-Vollversion.pdf>

<FEEDBACK FROM EDUCATORS>

Educators consider the innovative combination of technological expertise and aspects of media education especially positive when evaluating the program. The high number of participants and the comparatively high amount of female participants are also positively perceived. Much credit is furthermore given to the participants' project ideas and their realization by technical experts as well as the community of educational sciences due to the demonstrated level of technical execution and the inherent pedagogic value. Jugend hackt is one of the first projects to promote the future learning field of 'Code Literacy' in this manner and scope.