

OEHA! *How does my mobile phone affect the environment?*

Free learning materials to support ecologically responsible media use in schools and beyond

Why is using the internet bad for our climate? What is inside my smartphone? Under what conditions are the individual parts produced? How can we shape our digital future in a way that brings us forward socially, but does not pollute our environment and climate? Discussing and finding answers to questions like the ones mentioned above is the main concern of our project OEHA or, in German, ÖHA!

[“ÖHA!”](#) stands for “ecologically responsible media use”. We chose this title because it is, on the one hand, easy to remember and, on the other hand, in some Austrian dialects the expression “ÖHA!” is used as an exclamation to say “Stop! The situation is starting to become critical!” And that is exactly what our project is supposed to show. Its main aim is to make children and teenagers aware of what the lifecycle of a smartphone has to do with climate change and what impact the development, production, use and disposal of a smartphone can have. We want to demonstrate “ÖHA! - the exploitation of our planet has to stop” and, furthermore, provide a lot of sudden insights and interesting aha- or “ÖHA!-experiences” on issues of digitization, ecology and media literacy.

It is important for children and teenagers to understand that living sustainably does not just mean to separate rubbish. ÖHA! considers the ecological implications of digitization and sustainability on three levels – locally, globally and “glocally”. While the local level refers to our own region and our sphere of activity, individual actions are probably less decisive at a global level. However, what happens locally is linked to the global level and vice-versa. The knowledge and awareness of which global developments are currently prevailing are necessary in order to align one's actions accordingly and be able to consider global processes critically. The connection between a local and a global perspective is called “glocalization”.

ÖHA! was initiated by the [Centre for Learning Technology and Innovation \(ZLI\)](#) of the [University College of Teacher Education Vienna \(PH Wien\)](#). The project ran between 09/01/2019 and 12/31/2020 and was partially funded by [the Innovation Foundation for Education \(Innovationsstiftung für Bildung\)](#). Carried out “at eye level” with students and teachers from three partner schools and supported by a number of interesting project partners, learning materials (a free app, videos, quizzes, augmented reality (AR) elements, worksheets and much more) were created and provided for free download on various websites. One important aspect during the whole project was that the learning material was produced BY students FOR students. Our project partners included [Socius](#) (Alliance against Poverty) and [Amlogy](#), an augmented reality (AR) and virtual reality company that can bring worksheets to life. By using AR, it is for instance possible to visualize the blueprint of a smartphone or the countries of origin of various cell phone components on a map in 3D.

Digital sustainability is embedded in the Austrian curriculum for Digital Basic Education ([Digitale Grundbildung](#)) and in the framework of [www.digikomp.at](#). It is therefore particularly important to introduce children and young people to this topic as early as possible. Digitization does not only evoke revolutionary social changes, the production and use of digital technology also leave an enormously large ecological footprint. For example, the energy consumption and exhaust emissions caused by the Internet today have reached dimensions that can be compared to previous “energy guzzlers” like heating systems and air traffic. This will continue to be an upward trend, not least due to the corona pandemic. While we are becoming more energy conscious in various areas, we often

do not worry about our media behavior. Data consumption contributes to the fact that the noble goal of climate neutrality at the moment seems simply unattainable.

By making learning materials as attractive to young users as possible, ÖHA! aims to make the topics mentioned above accessible and understandable for younger age groups, especially for children at primary and secondary level. The ÖHA! learning resources are supposed to open young people's eyes and minds and thus bring about greater justice, equity and human rights. The resources can be used individually as well as in school or as home-schooling assignments. The ÖHA! App can be downloaded free of charge from the App Store or Google Play Store. It is optimized for tablets but can also be used on a mobile phone. In all our materials, Alex, our smartphone avatar (created by students), accompanies users through the five steps in the life cycle of a smartphones (development, raw material extraction, production, media use as well as disposal and recycling) and provides users with videos made by students, augmented reality elements and interactive quizzes. Young people thus learn to see the “big picture” and the “glocal” perspective, which allows them to develop social identification with and involvement in various areas of the community.

Following the citizen science approach, a number of people including university tutors, teachers and students have contributed to the success of the project by continuously giving advice and feedback during the creation process. Thus ÖHA! can also work as a model for other stakeholders, showing like teachers on how to build strong relationships with supporters to inspire students to see beyond the immediate task and help them become productive members of society. Apart from that, the project has the potential of scaling up its concepts and solutions on various levels, because the protection of our planet inevitably requires education about the ecological implications of digitization as well as awareness for all challenges that arise when we talk about ecologically sustainable media use and literacy. The project enables learning which is not limited to the classroom but can be transferred into various contexts and inspires learners to take an active, participatory and critical role. In order to achieve this goal, we need all the support we can get!