Robert Eckardt (Friedrich Schiller University Jena, ignite education gmbH), Henryk Hodam (Ruhr University Bochum) and Andreas Rienow (Ruhr University Bochum, ignite education GmbH)

East and West, Science and Society – Revisiting the Interactive Mediation of Earth Observation Data Literacy with EO College

Abstract

"Man must rise above the Earth – to the top of the atmosphere and beyond – for only thus will he fully understand the world in which he lives". Following the quote of the Greek philosopher Socrates, the bird's eye perspective of satellites enables mankind to explore the spatial patterns of our Earth detached from the limited scope of the human eye. Highly developed sensors extend the perception possibilities to the global and the invisible supporting the monitoring of the sustainable development in a constantly changing world. To transfer the mathematical and physical knowledge from science to society, the Universities of Jena and Bochum established a research alliance integrating the variety of outreach projects focusing on the development of easy-to-use and accessible teaching resources which enable people not only to learn about the benefits of remote sensing but also to apply the data. Over the years, a rich portfolio of curricular sounded materials was created, integrated, and disseminated to the public with the platform EO College (eo-college.org). This presentation introduces the development of the theoretical, technical, and didactical concepts needed to cover the different educational stages starting in early childhood education and continuing in primary and secondary education to university education and vocational trainings. We follow a road map towards a comprehensive learning portal on earth observation, based on a modular content management system comprising interactive videos, practical tutorials, massive open online courses, simple work sheets, easy-to-use image processing tools, augmented reality apps, adaptive learning paths, and moderate constructivist teaching modules. The digital content is accompanied by in-situ workshops and summer schools, such as "SAR-EDU" or "Interactive Earth observation in school lessons". Throughout the years, multiple exchanges of ideas with stakeholders, teachers, and companies have shaped the development paradigms of EO College. Simultaneous to the rise of new sensors, the teaching resource pool was expanded by products addressing European earth observation, e.g. SAR, LiDAR, hyperspectral, and very high resolution imagery but also ISS-based remote sensing focusing on coupled human environment systems. We will critically reflect the challenges and weak spots not only of the past development, but also on the way to ensure the sustainability of more than a decade of work in remote sensing education in future international, collaborative networks and spin-offs.