Chapter 3
The Role of Geography Education in Sustainability in a Digital Age

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ABSTRACT

This paper intends to illustrate the role of geography education concerning sustainability in a digital age. In current everyday life, (non-)sustainability and digitalization are closely linked to each other, including societal issues beyond technology and ecology. For instance, digitalization may be a key to solve certain sustainability problems and is the source for challenges to sustainability at the same time. Geography education has both strong links with an education for digitalization and with an education for sustainable development. Therefore, it is an ideal learning environment to teach about the complexity of the linkages between both fields, and the necessity of thinking them together. Alongside with specific thematic examples for the classroom this chapter provides a number of didactic approaches that are a starting point to design subject-oriented classroom settings, appropriate to the complexity of the issue, and aimed at an emancipatory education for sustainable development.

INTRODUCTION

In 2018, a youth movement emerged that gained visibility due to its physical presence – and absence. Following the example of Greta Thunberg, a remarkable number of youngsters decided to use one of the rare weapons their generation has: cutting school time to demonstrate for climate protection, thus, breaking the institutional regulations of socialization that adults have set for them. Empty classrooms should convince adults to reflect on their role in the global catastrophe of climate change. Furthermore, they should also reflect on their demands towards the youngsters in contrast to the world they have prepared for them. The school strike symbolized a deep intergenerational conflict on the mistakes young generations convincingly claim adults are responsible for. During the Corona pandemic, the school strike weapon was blunted, but the struggle went on with active web and social media communication. Hashtags, tweets,

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and images kept the discourse alive (at least more than it would have been without those communication channels), particularly at a time the world was facing pressing crises such as old and new wars. Using social media, and thus, digitalization, for participatory issues is nothing new. However, this example, among many others, illustrates that the pursuit of sustainable development goals and digitalization meet at several points. However, they can also clash with many others.

Both digitalization and sustainability are complex concepts, full of promises and problems. Sustainability will help to shape human-human and human-environmental relations in a way that assures global justice and preserves the world for future generations, working to stop and compensate for the overexploitation of the Anthropocene. However, sustainability cannot fulfill all promises of reaching economic prosperity, social equality, cultural protection and development, and ecological protection at the same time (Hasse 2006). Digitalization is a technological revolution that permeates every aspect of human life and comes with many side effects. For instance, Stalder (2017) illustrates the social consequences and changed everyday practices in his reflections on *The digital condition* (A *Culture of digitality*) (e.g. support and control of human actions by algorithms). Digitalization can also be a part of the technological solution for certain problems around sustainability, for instance, aiming at digital education, dislocated communication, and efficient production and distribution. With this, resources and energy might be saved and carbon dioxide production reduced. On the other side, digitalization comes with other side effects that challenge sustainability, in particular *accelerated* energy and resource usage. Thus, and as always, there is only a thin line between sustainability and non-sustainability. Didactically, both concepts face the problem of invisibility of their phenomena, which makes them difficult to comprehend: For instance, algorithms are a complex 'black box' while CO_2 cannot be 'seen'.

This paper reflects on the links between sustainability and digitalization in educational contexts. A certain emphasis is placed on geographical education as this subject has strong links to and roots in both concepts, and as both concepts have spatial linkages (e.g. bridging distances with digitalization; global impacts of unsustainability). The paper highlights different aspects of this complex relation. Firstly, the relation of sustainability and digitalization is analyzed briefly on an everyday basis, outside the educational context, to provide a background and subject knowledge basis and, as a sideline, examples that can be useful in class (2). Afterwards, the role of geography education concerning sustainability on the one side and digitalization on the other side is presented (3). Then, different approaches of geography education are presented that can be used to teach competences related to digitalization and sustainability in the classroom, using adequate examples from tech companies to overtourism (4). This chapter involves approaches aimed at teaching competences to reflect and analyze (un)sustainability, but also to act politically and participate in sustainability processes with the help of digital tools. Finally, additional pedagogical implications are sketched to enrich the conclusion and round-up the whole picture (5).

DIGITALIZATION: HOPES AND THREATS FOR SUSTAINABILITY

The Corona Pandemic has at least shown that mankind *can* – under certain circumstances – produce less carbon dioxide (Liu et al. 2022). A lot of the savings came from a shutdown of certain industries that caused significant economic backslash in some regions. But in everyday life, another factor was omnipresent: people were less mobile. Many did not fly away on vacation (and used local alternatives, when possible), and most importantly, many could work from home and were prevented from going to the office. Digital communication (mainly video conference applications), replaced personal meetings