



Sustainable Geography Learning and ICT

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1. Geographical Education – an indispensable discipline to the development of responsible and active citizens in the present and future world

2. Information and Communication Technology for Sustainable Geography Learning

ICT and research in Geography Education

ICT and international co-operation

2.1 Teaching about Sustainability with Digital Devices

2.2 Sustainable Geography Learning with ICT

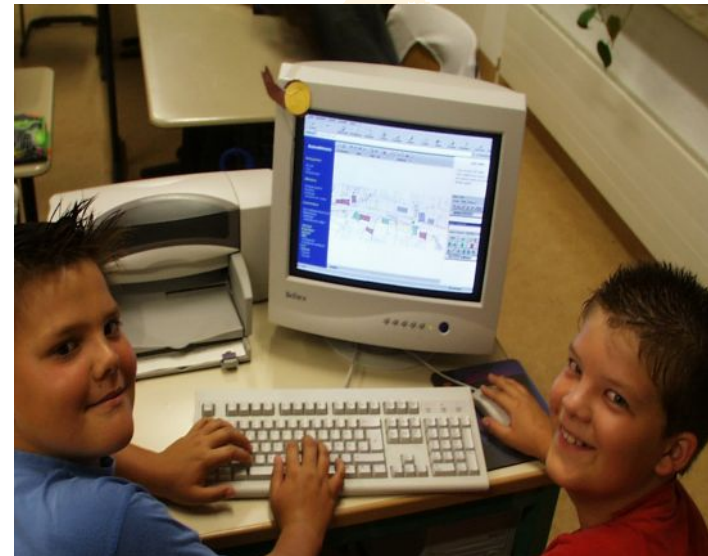
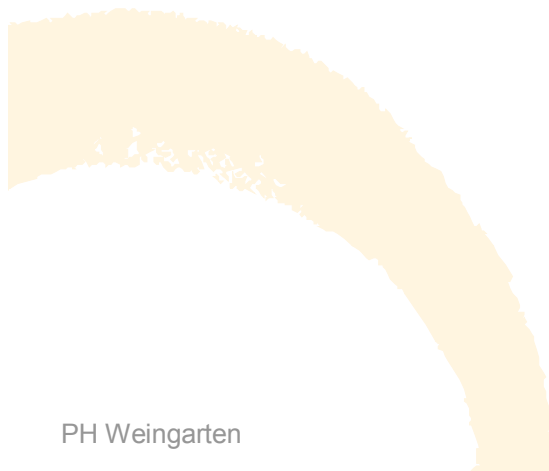
2.3 Sustainable use of resources: ICT and Geoinformation

2.4 Concepts for Sustainable Projects around ICT and Geoinformation

Conclusion

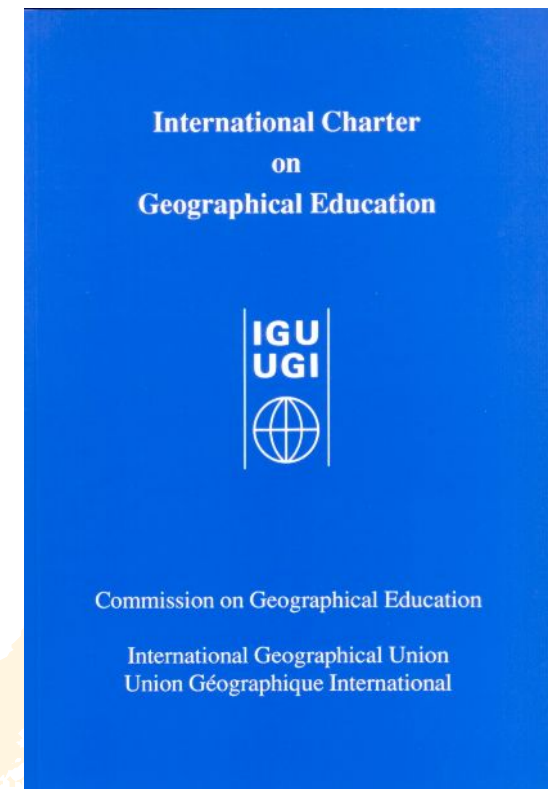
Introduction

- How can ICT and Geoinformation contribute to sustainable geography teaching?
- How can we teach sustainable considering the challenge of ongoing innovation in the field of software and hardware?



1. Geographical Education – an indispensable discipline to the development of responsible and active citizens in the present and future world

- The International Charter on Geographical Education declares, that “geographical education is indispensable to the development of responsible and active citizens in the present and future world”. (Haubrich, 1992, p. 1.3)
- How can ICT and Geoinformation contribute to these topics facing sustainability and geography teaching?



2. Information and Communication Technology for Sustainable Geography Learning

- ICT has greatly influenced Geography Education.
- They can contribute meaningfully to the pursuit of the defined aims of geography teaching found in the International Charter on Geographical Education.
- Consequently, we need to keep in mind the bandwidth and potential of ICT for use in sustainable Geography Learning.
- The use of ICT in Geography Education contributes to the aims of general media education
- For Geography Education itself, media add a general value to teaching in terms of organising, processing, interpreting, and presenting information

2. Information and Communication Technology for Sustainable Geography Learning

■ The specific potential of New Information Technology includes interactivity, self-directed learning, cooperative learning, and special learning set-ups such as e-learning.

■ All add considerable value to geography teaching, especially in the fields of intercultural learning, global learning, as well as bilingual learning.

■ ***ICT and research in Geography Education***

■ ***ICT and international co-operation***

2.1 Teaching about Sustainability with Digital Devices

- Apart from “traditional” or general digital devices and software (like office-tools) that are used by many academic disciplines, “geographic”-tools provide specific opportunities for teaching about sustainability and geographic issues.
- Remote Sensing Systems are most widely used to measure and monitor environmental change.
- Computer based information systems, such as GIS are essential tools in developing management strategies for sustainable development and environmental protection.

2.2. Sustainable Geography Learning with ICT

- What can digital Media contribute to sustainable Geography Learning?
- Digital Media and E-Learning can add in particular to self directed learning: students can navigate and control the speed in the learning-process; they can even repeat features/applications such as simulations or animations in order to deepen their understanding. Even in big groups of students each of them has a chance to take an active part. E-Learning is a chance for interaction and cooperation between students and teachers – even in different parts of the world.
- The general question for geography teacher remains: How to integrate the wide range of digital media and e-learning possibilities for sustainable geography learning?

2.3 Sustainable use of resources: ICT and Geoinformation

- It is still relatively easy to find the money for the investment (new software, licences etc.) compared to the aim to persuade teachers to share experiences and digital devices with others.
- Until today it seems to be common procedure that each geography teacher needs to acquire his or her own digital device and training to implement technology in geography lessons.
- Outside the academic world and outside the world of schools and universities we ask for specialists and experts to solve our needs. But inside the systems we claim to be experts in all categories of a discipline.
- The development and implementation of innovative team-teaching concepts is required to share the knowledge of several experts under the pressure of ongoing technical innovations.

2.4. Concepts for Sustainable Projects around ICT and Geoinformation

- Funded projects often end up as an enormous data collection after funding is used up. Integration of user-feedbacks and the general maintenance of online material is an unsolved problem.
- Therefore grants for projects need to be designed to allow the investors to update and improve existing material.
- From an economic perspective it seems also relevant to disseminate information regarding existing tools or online-material to promote an intense and wide use.

(Schiewe, J., Grendus, B. & Plass, C. 2006)

Conclusion

- Theoretical thoughts about sustainability should be followed by practical patterns in projects and teaching concepts by using ICT sustainable.
- Geography educators therefore need to set examples for sustainable use of ICT and Geoinformation.
- Students and investors are ready to follow!

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