Digital dimensions of environmental communication

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1. Theoretical framework: what is environmental communication?

Before going deeper into the digital dimensions of environmental communication, a satisfying answer to the question 'What is environmental communication?' has to be found. The following orientation attempt refers to the explanations of Michelsen, Adomßent et al. (1998).
Similar to other cases, there is no clear-cut definition for this term within the social sciences. Far from becoming a mere fashion expression, environmental communication stands for new pathways within the development of actual social perception and processing of environmental problems. To analyse the way, environmental topics are handled and coping strategies are developed, scientific findings of different disciplines like psychology, sociology, communication sciences and conclusions of theories of epistemology, and systemic, discourse and behavioural approaches have to be taken into account.
Environmental communication means a complex and dynamic phenomenon within our societies, integrating all kinds of different actors and groups. Its range encompasses private exchanges of thoughts and ideas as well as communicative activities of mass media, entrepreneurial or administrative sources (Adomßent 2000). A broad variety of media like books, brochures, or school lessons are part of environmental communication as well as methods that reinforce participation like round tables, future workshops or local discussion platforms within local agenda 21. In saying this, the close interrelationships between information, education, counselling and participation become obvious.

For all kinds of purposes of environmental communication, the internet is a abundant marketplace for different kinds of services, all to be used by personal computers. Internet-based services may be divided into information and communication devices (see following table).

Table: Synopsis of internet-based services

Communication Devices	Online Information Devices
e-mail Newsletter Mailing Lists Chat Newsgroup (UseNet) Voice-mail Telephoning via TCP/IP Video Conferences WWW Visitors' books WWW Discussion forums	WWW (World Wide Web) FTP (File Transfer Protocol) Downloads (Software etc) Databases WebCams Virtual Reality

This paper focuses on information and communication technologies (ICT) as a means for educational, counselling and participation purposes within environmental communication.

2. Digital approaches of environmental education

Concerning educational approaches, ICT may be used in different fields of action from kindergarten, schools, universities, and continuing education. For a long while the majority of information offers was text-based - or more precisely: text-dominated, but meanwhile, the intensive use of multimedia has become somewhat of a 'killer application'. A multitude of soundfiles, animations, and all kinds of pictures are integrated into different interactive and presentation features like CD-ROMs and websites. All of these applications are software-based, no matter if we are talking about tools, games, or presentations in exhibition halls like museums or other show rooms.
ICT is also fostering other important educational aims like co-operative learning, but these aspects shall be neglected this time. What is important to mention in this context is the distinction of learning environments into knowledge-based, problem-oriented/focused, and

exercise / training-based approaches, all of which are suited for both face-to-face and telematic learning environments.

2.1. Information tools

There are a lot of different programs, either to be used offline or online for the production, collection, administration, and evaluation of information. Concerning environmental education, Jelitto (2000) distinguishes different areas suited for the utilization of software like:

- Education: environmental education, focus is laid upon the education of the user (classical learning software approach);
- Edutainment: educational entertainment with environmentally themes playing a minor role;
- Entertainment: entertainment within environmental context;
- Infotainment: environmental information prepared in an entertaining way;
- Information: information offer closely focused on environmental issues (eg databases).

We will not go deeper into the depiction of these editors, standard software etc. at this time and place.

2.2. Games

Games have become one of the predominating software utilities on computers. For educational purposes they are extremely useful, because they do represent reality and allow all kinds of simulations without harming the real environment. This is a didactic surplus that cannot be reached by any other means. Their challenging offer to cope with complex matters and problems, similar to real life conditions make them very useful, eg. for thoroughly going into the difficult matters like sustainable development, integrating social, ecological and economical perspectives.
Another field of action within environmental education are role-plays. Again, this is a didactical method worth wile to be integrated into all kinds of curricula. Needless to say that this learning goals can also – or even better? – be reached by face-to-face approaches.

2.3. Exhibitions

We like to open a discussion on the usefulness of computers for the use of exhibitions, for example in museums, environmental centres or fairs. In Germany, 10 % of museums are already using computers integrated into their concepts and operating as digital brochures, for games and quizes or as controlling tools for slide projectors etc. Didactically they guide and encourage visitors and fulfill many more functions. (for more detailed information see http://ausstellungsmediumcomputer.de/ziele/index.htm).

3. Environmental counselling online

Environmental counselling belongs to environmental communication as well as environmental education. It can be described as a demand-oriented service, offered by administrations, associations, enterprises or by independent consultants. Michelsen (1999) describes the major goal of environmental counselling, to raise an awareness and consciousness on the side of the addressee, that motivates to live without harming the environment or at least to lessen problematic burdens. Environmental counselling influences production cycles in enterprises as well as political planning or authorization processes. But its core can be described as a classical face-to-face situation of a person in need of information and a consultant trying to satisfy these requirements (Michelsen 1997). Again, there is a variety of applications suited for the use of ICT, such as public relation, presentation, informational offers, communication with customers, professional exchange, or advanced training. Following Jelitto (2001), environmental counselling can be carried out in different digital ways: passively (as a “pull”-service; eg use of FAQs or databases), communicatively (question-answer model, e.g. by e-mail), actively (as a “push”-service; eg newsletter) or within virtual communities.

4. Participation

The importance of political commitment and participation in planning processes and/or political decisions can be seen as the core paradigm of Agenda 21. The question, wether ITC support the participation principles of sustainability is considered by Adomßent (2001).

5. Discussion

Questions to be discussed in more detail in the final paper are:

- Can ICT serve as a substitute for direct contact to nature or is it supposed to be a digital supplement within environmental education?
- What about the environmental benefits concerning the use of ICT (resource problems)?
- Are there other possible fields of action of digital media within environmental communication?
- Can the digital divide be bridged by digital environmental education?
- What about the pros and cons concerning didactic ideas and findings?

6. References

Adomßent, M. (2000): Umweltkommunikation in der Kommune – Anforderungen an Städte und Gemeinden. - uvp-report 14 (3): 136-139

Adomßent, M. (2001): Do Information Society Technologies support the participation principles of sustainability? – In: Hilty, L. M. & Gilgen, P. W. (Hrsg.): Sustainability in the Information Society. Part 1: Impacts and Applictions. – S. 161-166, Marburg

Jelitto, M. (2000): Einsatzmöglichkeiten digitaler Medien in der Umweltbildung – ein Überblick. – DGU-Nachrichten 21; 16-20

Jelitto, M. (2001): Umweltberatung online – Möglichkeiten und Praxisbeispiele zu Chancen und Nutzen des Internets. – Bremer Umwelt-Beratung (Hrsg.): Verbraucher, die unbekannten Wesen? Professionelles Marketing und neue Medien in der Umweltberatung – ein erfolgversprechender Weg. – Tagungsdokumentation, S. 35-40

Michelsen, G. (Hrsg.; 1997): Umweltberatung: Grundlagen und Praxis. – Bonn

Michelsen, G. (1999): Umweltberatung. – In: Brilling, O., Kleber, E.W. (Hrsg.): Hand-Wörterbuch Umweltbildung. – Baltmannsweiler, S. 251-253

Michelsen, G., Adomßent, M. et al. (1998): Umweltkommunikation - eine theoretische und praktische Annäherung. - InfU-Diskussionsbeiträge 1/98, Lüneburg