C.O.M.P.U.T.E.R instructions for planners of informal environmental education1 settings

"The computer only does what you "tell" him to do." Thats something we were told when we started to learn how to deal with these machines. And thats exactly what we have to keep in mind, when we talk about the utilisation of informatics in informal educational settings.

To beginn with I would like to clarify what I mean by "informal education". Evans (1981, 28) provided us with a comprehensive conceptual framework which includes all learning activities of human beings:

* "Incidental education - learning which takes place without either a conscious attempt to present on the part of the source or a conscious attempt to learn on the part of the learner.
* Informal education - learning results from situations where either the learner or the source of information has a conscious intent of promoting learning - but not both.
* Nonformal (out-of-school) education - any non-school learning where both the source and the learner have conscious intent to promote learning.
* Formal (school) education - which differs from non-formal education by its location within institutions called schools, which are characterized by the use of age-graded classes of youth being taught a fixed curriculum by a cadre of certified teachers using standard pedagogical methods."

(emphazising in original text)

While nonformal education became more and more important over the years for school kids, especially the informal section is currently considered very relevant, last but not least for adults (e.g. Wohlers 2001, 9ff.). Whether children or adults, both groups are target groups for informal education institutions (e.g. zoos, botanical gardens, planetariums, science centers, protected areas, museums). To be most effective it seems evident that the methods which are used to convey a content to the visitor should be very well targeted. This should be especially the case when these tools are expensive, which is the case e.g. when you use something from the big storage of informatics (e.g. animatronics, video, interactive computer, GIS). In order to achieve this aim it is helpful to look at some characteristics for planning informal environmental education settings. These characteristics will be explained by using the acronym C.O.M.P.U.T.E.R. (for literature see Wohlers 2001):

C for CONTACTS.

Visitor research has shown over and over again that taking social contact between the visitors into consideration when planning helps to improve learning effects and attraction power of exhibits. The term "social contact" does not only refer to the interaction between visitors but also between visitors and staff members. Social interaction helps to foster identification with the group, it is the basis for social learning and it simply involves the visitor on a much more intense level then without any communication in the group.

O for ORGANIZATION.

Organization simply means that planners of informal education should make an effort to structure the contents of what is presented. This helps to remember the information presented and to contextualize it. The organizing pattern of a presentation has to be woven into the whole plan in order to be most effective. This starts even with the appearance of the architecture. An example for the organization of the content is e.g. the use of an easy to remember acronym like C.O.M.P.U.T.E.R.. But it could be a song, a rhyme, a simple numerical list, a symbol, etc.

M for MESSAGE.
This is something like the heart of the matter. What do we want to tell our visitors, why should they care? We definitely need to organize the information presented in a hierarchical form. The bottom line is that we should try to figure out the message of what we want to convey. This message should be

* formulated in a single complete sentence
* no longer then 10 words
* motivating
* suitable to get at the heart of what we present.

We need to concentrate on this right from the start of the planning process in order to have a chance that there is something hopefullyevery visitor takes home. The message also helps to look for organizing patterns.

P for PARTICIPANTS
"Wear your guests shoes". This marketing statement could be the summary of what one could say about visitor oriented presentation. To be visitor oriented we need to know as much as possible about our (potential) visitors. Depending on what we are planning there is a wide range of possible information and information gathering methods. These are the socio- and psychographic information which we need to get a first impression about the needs of our guests. Also important is a point-of-contact-analysis which basically means that we should check every little detail the visitor might get in touch with before, during and after his or her visit. Such an analysis also helps not only to look at a single object or (e.g. computer-)installation but to keep in mind that the visit is made up of everything the visitor gets in touch with. Therefore it seems mandatory to work towards an overall conceptual plan and not to concentrate on a couple of fancy installations.
General information about guests (or participants)are that they come voluntarily, and that there is usually a range of age groups which finally does not necessarily have any pre-knowledge.

U for USE.
What´s the use of the presentation or installation? Do we want to convey a certain idea, a certain feeling or maybe do we want to motivate our guests to do something. If the installation is in a protected area, the use of the presentation might be to make visitors want to get out and check out nature themselves or via a guided walk.
The use of a presentation or installation should be spelled out as detailed as possible because again it helps to focus concerning message and organization of the contents. This goes generally for every learning activity (see categories above) but my impression is that especially with tools provided by informatics sometimes the means become the end. Also e.g. CD-ROMs often seem to be the final "dump" for all the "important" information which could not be included in the presentation itself. These information-dumps often have a depth no visitor ever really uses. This is a problem when we think about the costs involved to develop and to maintain informatics.

T for TECHNICAL MAINTENANCE.
An example for bad maintenance in informal education are self-guided trails which usually are not keeped up after they are installed. But there are many others like touch boxes, posters or entrance situations. If we do not maintain what we present then we have almost lost our visitors. Depending on the kind of informatics used (roboter, CD-ROM, infrared-walkman devices) maintenance can be quite cost-intensive.

E for EVALUATION.
Although evaluation is another cost factor it should be an integral part of informal education. This goes especially for expensive installations which is common with informatics. Careful front-end analysis, especially a formative test phase of the installation and if possible a summative evaluation phase should be part of every computer installation. These evaluations should be accompanied by a structured expert planning process. Together these components of visitor research and expert panels form the overall planning process.

R for RESEARCH.
To be up to date with the research in the fields of informal environmental education it helps to check out visitor research results. Especially in north america the Visitor Studies Association offers a wide range of research results and groups in order to forward the presentation in informal settings. These data together with research results from national organizations should be taken into account when conducting the planning of informal education.

Literature:

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Wohlers, Lars: Informelle Umweltbildung am Beispiel der deutschen Nationalparke. Aachen: 2001.

1 Another term for "informal >education< in english is >interpretation< (Wohlers 2001, 1).