# Collaborative work on informatics education of noninformatics students: a pilot project proposal

*Eric W. van Ammers*
*Department of Informatics, Wageningen Agricultural University*
*Dreijenplein 2, 6703 HB Wageningen, The Netherlands*
*e-mail: Eric.vanAmmers@users.info.wau.nl*

**Abstract**

This short paper actually is a proposal for a pilot project to set up a database for the field of informatics that can be used in various 'tailored' ways through the Internet by the informatics educational community. The implementation of such a database, preferably in an international context, requires a range of activities that are identified in this proposal.

**Keywords**

Informatics, informatics majors, noninformatics majors, curriculum (general), role of CIT

## 1    STATEMENT

Teachers would be greatly served if they could compose their curricula by drawing material from a database. This is even more effective when standards have been set on the level of knowledge the students are to attain.

Desirable features of the database are that the material should be:

- available electronically in a form that is optimized for import into the more popular document processing systems;
- divided into *independent* elements requiring say at most 8 hours to master;

- easy to adapt for a teacher to fit the local didactic context, i.e. no specific didactic principles should be imposed.

It would be worthwhile to set up such a database for the field of informatics and make it available to the informatics educational community through the Internet. Its primary audience will be those who are involved in teaching informatics, but it will also be highly useful to noninformatics majors.

The database would allow the efficient construction of educational material tailored to a particular learning situation. It would stimulate the transformation of teachers from *originators* of to *managers* of teaching material.


## 2    ACTIVITIES

The implementation of an *Informatics Curriculum Database* looks like an impressive effort. Roughly speaking it involves the following activities.
- Identify disciplines to be served (e.g. medicine, law, physics, biology, etc.).
- Identify levels of depths and competence the material has to expose. Most likely students in higher vocational institutions will be taught on a more shallow level than university students.
- Divide the outlined curriculum into individual learning elements subjected to the following restrictions:
  > the time an average student needs to study an element is limited to say 8 hours;
  > elements are independent of each other, i.e. they do not refer to (parts of) other
     elements;
  > every element supplies a list of concepts considered a prerequisite to understand the
     material presented;
  > an index relating individual concepts to associated learning elements should be made
     available;
  > every element is illustrated by at least one specific example for every discipline;
- Work out the learning elements into documents that:
  > supply an explanation of the particular element to be used by teachers as a
     starting point for their own statement of the matter;
  > are 'neutral' in style (i.e. not strongly biased to some didactic form);
  > will be reviewed for acceptance by a committee;
  > are written by means of an agreed upon standard text processing system;
- Scan the Internet for existing material that qualifies (possibly after some adaptation) for the database.
- Set up a glossary to standardize the terms of the database.

- Transform the accepted elements into the text formats for distribution purposes and add the element to the database.
- Design procedures to maintain the database and to deal with matters of royalties.
- Set up a server to take care of Internet access to the database.

The database should be *certified* to a certain extent. That is its users should be confident that the entries of the database are refereed by a team of recognized experts. Evidently it would be wise to run a pilot project first on a sample of the curriculum.


# 3    ACKNOWLEDGEMENTS

The idea for this project germinated from A.K. Dewdney's book *The Turing Omnibus: 61 Excursions in Computer Science*, published by Computer Science Press (1989).


# 4    BIOGRAPHY

Eric W. van Ammers got involved with programming through his physics studies at the Groningen State University in the sixties. After his graduation he joined the Software Department of the Philips-Electrologica Company. He joined the Wageningen Agricultural University in 1977. His activities consist mainly of curriculum development and lecturing. His research remains focused on programming methodology. He conducted early experiments with literate programming. Van Ammers has published papers on programming methodology and he has designed two tools to support the techniques of literate programming.