What should we teach in high-school computer science classes to make the students free?

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France: an underdeveloped country for computer science in high-school

No computer science classes in high-school

In junior-high-school : technology classes (from mechanics to computer science)

The B2I (Informatics and Internet Capacity):

- software use (text processing, spreadsheet, navigator, ...),

- no specific teacher,

- evaluated by the Head of the school.

(slightly) angry french computer scientists

A joint ASTI-EPI working group

ASTI: a french scientific society in informatics

EPI: a association of high-school teachers

Letters

Meetings

Curriculum proposals

Support from the French Academy of Sciences (Nivat, Berry),
INRIA and some Universities

The Future (in France)

In 2012 a new course will be offered

In informatics

For scientific students

Optional (more math, more physics, more biology, some informatics)

What kind of curriculum?

II. Opinions

Three steps

1. Learning to use common software (search engine, ...)

An opportunity to ask good questions (where is the information stored?, how does it travels?, how is an image displayed?, ...)
Elementary school and first half of junior-high-school (6-12)

2. Learning to write a program

Do it yourself and understand: what a program is, how it is written, how wrong it may be, what is the source of a program, ...
Junior-high-school and high-school (13-18)

3. Learning informatics as a science

Turing machines, networks, data bases, grammars, automata, ...
University (19-∞)

Four concepts

At all steps: a balance between the four concepts of informatics:

Algorithm

Machine (including networks)

Language

Information

Learning a programming language to write algorithms that run on a machine and process information

Employ specific teachers

Weak point in the reform: no university degree to teach computer science

Teachers (mostly math teachers) with a specific adult training (one day a week)

Why does it matters for the free open source software community?

Because free software ought to be used in schools?

Of course, but this is not the main point

Open source software is about empowerment ... as is education

Learning fundamental concepts and how computers are programmed empowers, learning how to click on a button does not

We need support from industry and the free software is part of it

We need infos about other countries

One member of our group: in charge of benchmarking

Towards joining efforts at in international level?

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