Unité Mixte de Recherche - Sciences Techniques Education Training

Informatics in the French High School Curricula: Recent Moves and Perspectives

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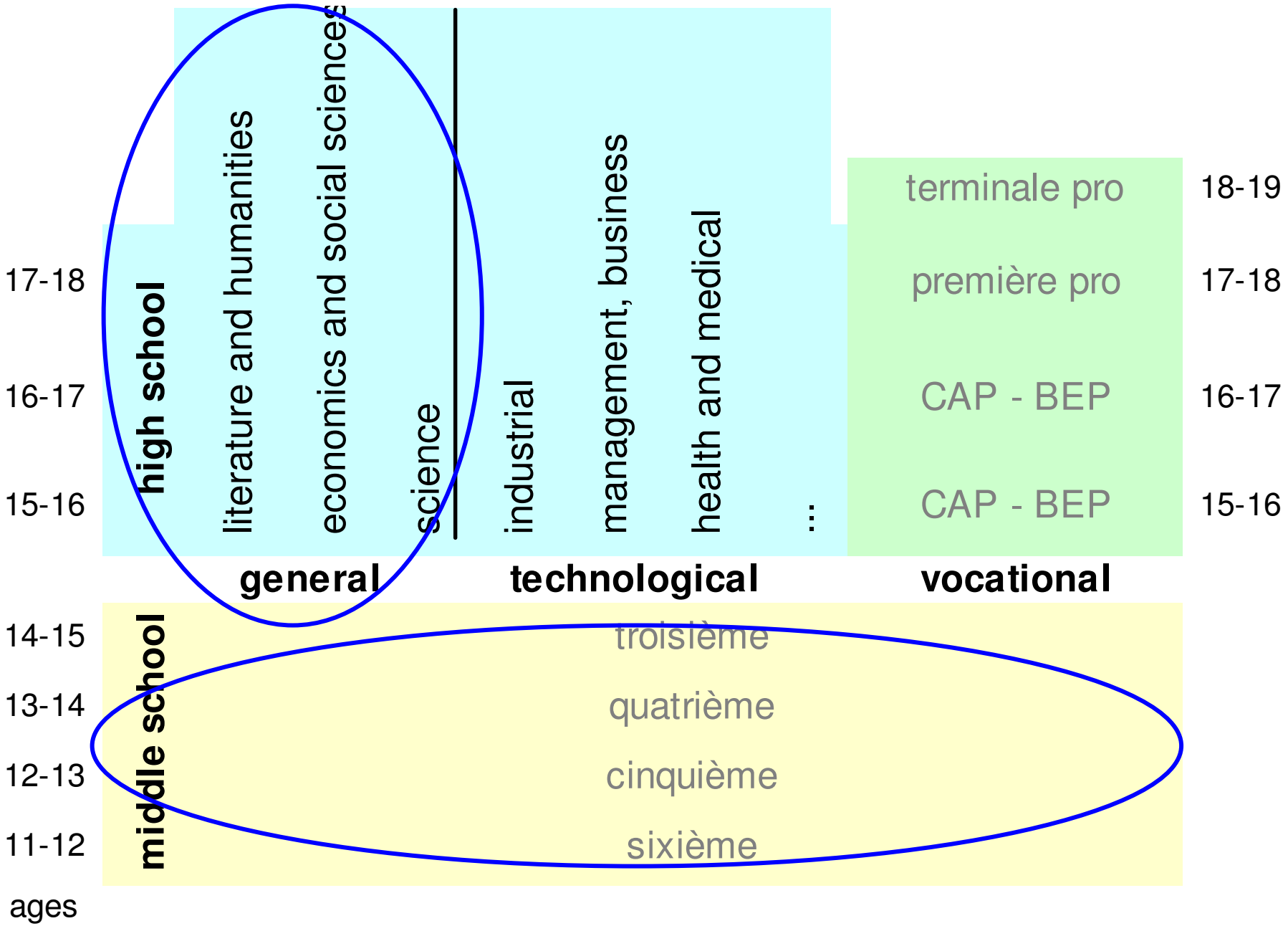
French educational system



Key dates 1970-2000

1970

1974 « the 58-high schools experiment »

1979 « 10,000 computers experiment »

1980

1981 An optional course of informatics, in the General stream of study, by specialized teachers (algortihmics and programming)

1990

1994 The optional course disappear

90's ICT use within other subjects

2000

2001 « B2i, C2i »: ICT skill certifications for all students… but no curriculum.

Debates (1980-1990)

1970

1st Conference on computer and education (IFIP, Amsterdam), and another in Paris (OCDE, Paris)

- Computer Science as a **way of thinking**, usefull to other subjects

1980 1990

A national report « informatics for all citizens » (Simon)

- Is informatics a **subject** to be taught **or** a **tool** for teaching and learning?

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A strategy for education based on IT uses in education.

- The « informatics as a **tool** » approach is mainly adopted in education.

Why did the optional course dissapear?

- Optional and Selective
  - chosen mainly by « scientific » students, good students, boys
- Costly
  - A one-year teacher training
- Under debate
  - Algorithmics and programming… or not?
  - … and software use?

ICT at school
The case of spreadsheet

- Middle school (12 to 15): in *technology classes*
  - 15 hours on very basic functions
- High school (16 to 18): integrated into other subjects
  - Does not explicitly occur except in mathematics and management
  - Only recommended tools, with an emphasis on skills, rather than concepts

➢ Rarely used at school … or at home

(Results from Didatab project 2005-2007)

Recent changes in the general stream of studies

- (2009) Algoritmics in mathematics at 1st year
  - Way of thinking for mathematics
  - Not reduced to programming - Paper and pencil
- (2012) « Informatics and numerical society »
  - Optional course
  - Scientific stream
  - Trained teachers
- (2012) Optional « Exploratory courses » as introduction to futur specialities, among which 3 with computing related to industry and technology

« Informatics and numerical society »

http://www.epi.asso.fr/

- 1. Information
  - Representation - structure and control - databases and IS
- 2. Language
  - - programming language - automata and grammar - check and verification
- 3. Algorithmics
  - -classical algorithmics - computability and complexity
- 4. Computers
  - Architecture - networks
- 5. Didactics

Conclusion

- Do we repeat the past?
  - An optional course for scientific students…
  - A debate ICT vs CS not closed.
  - No real education strategy, opportunities

- Do we prepare the future?
  - Informatics at lower grades in junior and senior high school.
  - Taking into account both ICT and CS, to give an education not only to future CS experts but to all citizens.
  - 'Bottom up approach' (from the Science to the education) is not enough.