

# Formative Evaluation Scheme for a Web-based Course Design

Authors:

Veijo Meisalo, Jarkko Suhonen,  
Erkki Sutinen and Sirpa Torvinen

# Virtual Approbatur

- 15 credit units University-level Computer Science studies
- to the High School Students
- first time in Fall 2000
- studies last 1,5 year
- content: basics of
  - Computer Science (5 credits)
  - Computers and computing (3 credits)
  - Programming, Java (7 credits)

# Studying

- via the Internet: WebCT –learning env.
  - course materials, exercises, examples, visualizations, animations, interactive applets
  - e-mail, discussion forum, calendar, chat, whiteboard etc.
- group activities, learning by writing, netbus consulting, some days at campus
- face-to-face learning situations are minimal (one week ”summerschool”)

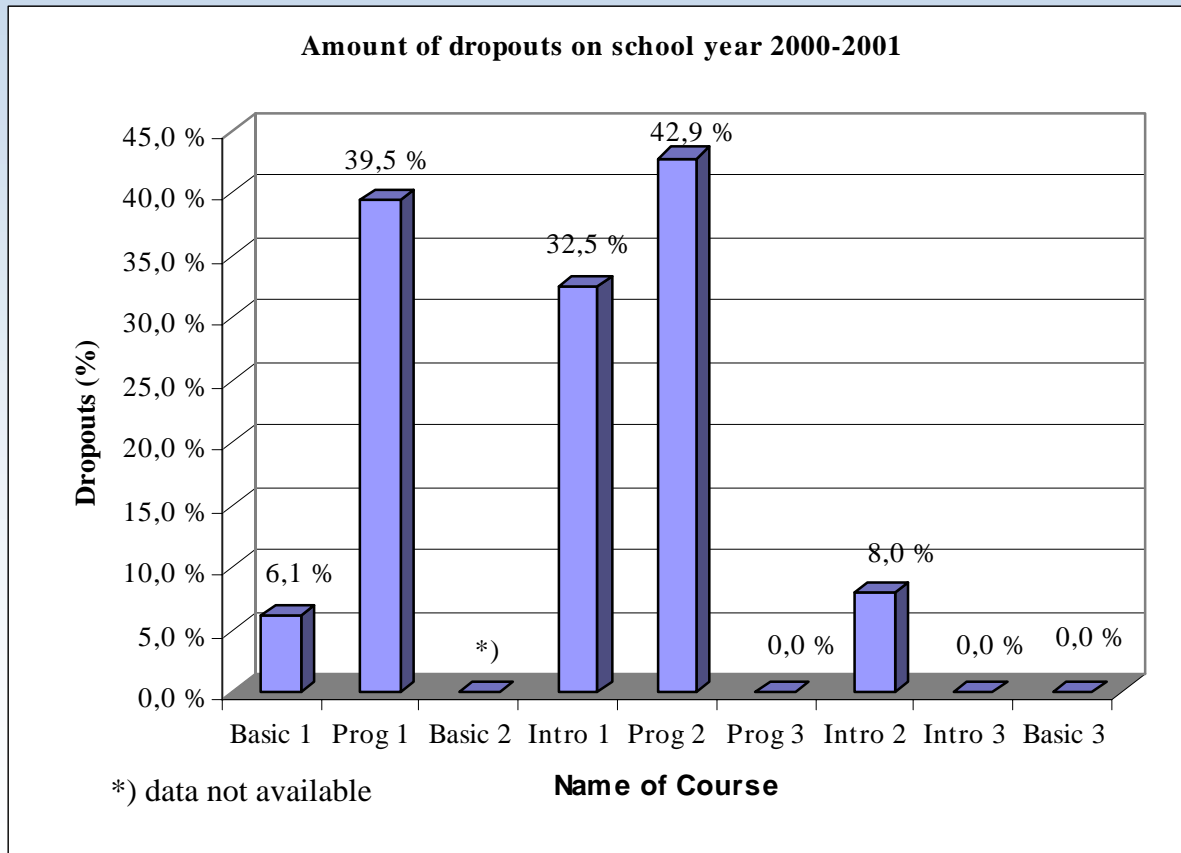
# Design principles

- real human contacts
- printed material linked with an activating learning environment on the Web
- learning-by-doing
- simple interface
- light technology

# Experiences 1/2

- students need to be ready at work independently via Internet
- plenty of time is needed
- learning programming is the most difficult
- high school students need more specific instructions for what to do

# Experiences 2/2



# Evaluation Scheme 1/2

## Feedback

- feedback from students
- feedback from tutorteachers
- given by
  - e-mail
  - discussing forum
  - course evaluations (at the end of courses)

# Evaluation Scheme 2/2

## Case study

- during Spring 2001
- continuing Spring 2002 (and 2003)
- among students who dropped out
- questionnaires
  - 2001: 25 completed
  - 2002: 42 completed
- more detail information
  - follow-up questionnaires by e-mail
  - interviews

# Viewpoints of evaluation

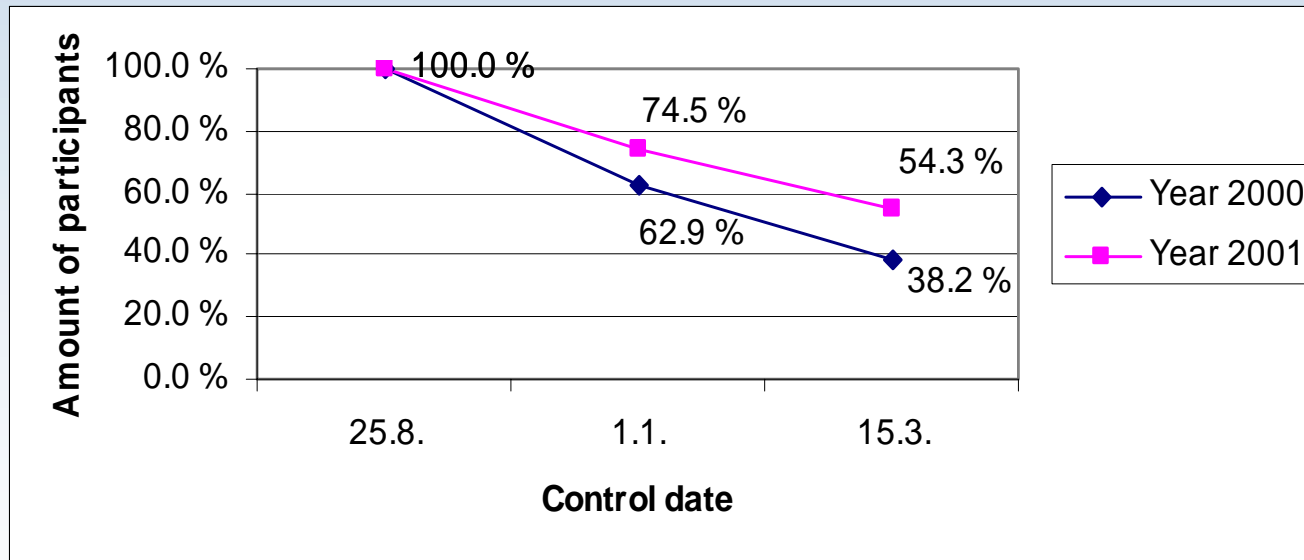
- learning outcomes:
  - results of exam dropped out versus continuing students
- students' attitudes:
  - reasons to drop out
  - difficult topics of programming
  - how to improve the courses
- exercises submitted versus results of exam

# Results 1/2

- scheduling is very important
- learning by doing is obvious
- high school students need more support for learning process in Web-based courses
- learning programming independently over Web is regarded as difficult
- especially mid-performers benefit on visualizations

# Results 2/2

## Participants in VA



# Future

- continue "with open eyes and ears"
- improve the courses and arrangements further by formative evaluation methods
- based on the
  - feedback given by students and tutorteachers
  - analyses of questionnaires and interviews
  - experiences

# Contact

Virtual Approbatur -project:

[www.cs.joensuu.fi/lukioyt/virtual.htm](http://www.cs.joensuu.fi/lukioyt/virtual.htm)

Contact Author's e-mail:

[sirpa.torvinen@joensuu.fi](mailto:sirpa.torvinen@joensuu.fi)

*Thank you for your interest!*