

# MULTIMEDIA IN PHYSICS TEACHING AND LEARNING

## WORKSHOP 1998

University of Sciences and Technologies of Lille (France)

### PROGRAM

**Sunday (Sept 27)**

**20:00 to 22:00 : Buffet in Ascotel**

**Monday (Sept 28)**

**Room "Jean Lemaire" P7 building on the campus**

9:00 Welcome

9:15 Introduction to the workshop

#### **A : Full multimedia education system and pedagogical environment**

9:30 RISLEY John (USA)

Presentation on WebAssign, our new web-based homework delivery, collection, grading and recording service. This new program offers a revolutionary way to incorporate student interaction with Java applet multimedia modules. In addition, WebAssign has copyright agreements to include problems from introductory physics textbooks with many US publishers

10:00 JODL Hans Jörg (Germany)

„ First year physics major education for off campus students “

Since 1997/98 we are running a project (FIPS) to teach about 50 students in the first year who are located somewhere in Germany. We use a multimedia lecture, interactive exercises, virtual and remote laboratory inclusive virtual tutoring. This report includes the description of technical, political, administrative problems, solutions, experiences and so on.

10:30 Coffee break

11:00. VINDEVOGHEL Monique, Jean-Marie BLONDEAU (France)

"The french national project : "University on Line". Seven modules on the WEB for first year students with simulations, video documents, interactive exercises and self-evaluation."

11:30 BACON Dick (UK)

"Evolution of the STOMP project. Presentation of the mechanics module"

12:00 COGNE André, DAVID Jean-Pierre (France)

"Training experiment using a Knowledge Pool System and authoring tools "

12:30 : lunch

14:00

SPERANDEO-MINEO RosaMaria (Italy)

„ In-service Teacher Training Course concerning Physics Models “

Teachers will be trained in the using different kinds of modelling software that will experimenting in they classrooms and will discuss problems and results using an appropriate E-mail network.

BOSIO Stefania and PARMEGGIANI Paolo (Italy)

"A multimedia proposal for informal education in the scientific field."

14:30 COSTE Jean-Paul (France)

"Model of competences evaluation. Development of a system applied to physical sciences."

15:00 MULDER Cees (The Netherlands)

"How do pupils use ICT in investigations"

15:30 Coffee break

16:00 - 18:30 Discussions 1 & 2

*Discussion 1 :Pedagogical environment of multimedia*

What are the problems encountered to make a full multimedia formation system (eventually grading)

What is the pedagogical environment of these formations ? What is the new part of the teachers ?

How do the students react to these new teaching methods ?

How can we evaluate our students

What are the conclusions of the first experiments ?

*Expected conclusions : list of technical, political, administrative problems that must be taken into account to make a new multimedia formation*

*Discussion 2*

How to form the teachers to multimedia activities and to new pedagogical methods ?

In every of our countries, what is the real number of students concerned with a multimedia formation ?

How to do to increase this number ?

How to convince the teachers to use multimedia ?

*Expected conclusions : political, technical solutions to increase the using of multimedia.*

19:00 Welcome from Jacques Duveau, head of our University. !

20:30 Dinner

## **Tuesday (Sept 29)**

### **Multimedia and experimental activities**

8:30 BORGHI Lidia (Italy)

„ Multimedia integrated to experimental activity in high school “

8:50 ELLERMEIJER Ton The Netherlands)

"A new multimedia learning environment for practical work and investigations"

9:10 HARMS Ulrich (Germany)

„ Virtual and remote laboratories “

9:30 HILSHER Helmut (Germany)

"Demonstration of the CD ROM "hands-on-experiments""

9:50 DOMON Michel (France)

How to use an oscilloscope . Java applets

10:10 Coffee break

10:30 - 11:20 Discussion 3 :

How does multimedia allow to help and to improve the experimental activities of the students ?

How can we do to avoid that experiments are missing in far-learning teaching, particularly on the WEB ?

### **Knowledge and gathering or our resources**

11:20 TSAKONAS P., KALKANIS G.(Greece)

„ Common Technological Applications trigger Teaching/Learning Physics by Computer Simulation Programs “

11:40 KUEHNELT Helmut (Austria)

"Netscience. An attempt to develop with teachers material for modern physics courses in high school/first years at university"

12:00 GOTTFRIED C., HABISON P., OBERHUMMER H. (Austria)

„ First steps in the development of the multimedial teaching aid ESPACE in the field of subatomic physics and astronomy “

12:20 lunch

14:30 - 18:00 Discussions 4 & 5

Discussion 4

Gathering of our resources

What is the list of the multimedia products that we have made ?

How are we complementary ?

Are the products free of charge ?

Are they distributed by an editor ?

Is there a possibility to translate our own products in an internal way, to realize a resource-bank in physics, available for any member of our group ?

What kind of contract must be planned for such a bank ?

Discussion 5

Future actions of the group

The next european contracts.

How can we answer to them ?