TEACHER TRAINING FOR ICT USING ODL METHODS

(Change of paradigm in teacher training)

The use of new technologies in Education. Teacher Training Programs.

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The main issue of the presentation is that a change of paradigm could be observed in the fields of teaching and training in the last few years. One of the most important fields of this change is the field of teacher training, since all influences have a multiplied effect in this field. The new paradigm gets to more and more people through teachers.
At the Berzsenyi Dániel College in Hungary we recognized the need for change, so we introduced a new course two years ago. Its name was Introduction to Information Technology. The goal of this course is to broadcast this new paradigm to students, who are going to become teachers, and to make them able to play an important role in shaping this new paradigm. After a year's experience, last year we changed the methods of this course. In a few groups, we started to use ODL-methods instead of the traditional teaching methods. We have been using Web CT in the course this year. The presentation is about this 3 years experiment.

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1

Paradigms are essentially scientific theories or ways of looking at the world. They fulfill two requirements: they must be "sufficiently unprecedented to attract an enduring group of adherents away from competing modes of scientific activity," and they must be "sufficiently open-ended to leave all sorts of problems for the redefined group of practitioners to resolve" [1]

In formulating new paradigms, social factors may affect how scientists choose to interpret the facts they directly glean from nature. A paradigm represents more than just a collection of known facts; it represents a plan of the universe through which they can at least temporarily look at the universe and further their research. In other words, once they have adopted a paradigm, they can then test the limits of its scope. Thus, while the paradigm is essentially based on observed facts, the ideas and creativity that go into articulating the paradigm may be the result of cultural or metaphysical notions. [1]

According to my point of view, if we start to apply all the things mentioned above to training and especially to teachers' training, we can make the following statement: if we look at the training as a special way of communication, then: information technology changed all the kinds of communication dramatically, thus it's obvious, that it changed the ways of training in such a way, that it can be observed as a change of paradigm. Think of the Greek scientist walking under the palm trees and his students, and on the other side, think of the professor and his student, who are thousand kilometers away and communicate through the Internet.

2

The term distance education represents a variety of educational models that have in common the physical separation of the faculty member and some or all of the students. As with all types of education, the various distance education models are built around the central components of the

instructional process: presentation of content; interaction with faculty, peers, and resources; practical application; and assessment. Each distance education model uses technologies in various ways to address some or all of these components.

The various distance education models differ not only in the types of technologies that are used, but also in the locus of control over the pace and place of instruction. In some models, the faculty and institution have primary control, as is the case in a traditional classroom environment. In others, the control rests with the student [2]

There are lot of models of distance education. We used in our work the following models.

Descriptions

Model 1: Distributed Classroom

Interactive telecommunications technologies extend a classroom- based course from one location to a group of students at one or more other locations; the typical result is an extended "section" that mixes on-site and distant students. The faculty and institution control the pace and place of instruction

Model 2: Independent Learning

This model frees students from having to be in a particular place at a particular time. Students are provided a variety of materials, including a course guide and detailed syllabus, and access to a faculty member who provides guidance, answers questions, and evaluates their work. Contact between the individual student and the instructor is achieved by one or a combination of the following technologies: telephone, voice-mail, computer conferencing, electronic mail, and regular mail.

Model 3: Open Learning + Classroom

This model involves the use of a printed course guide and other media (such as videotape or computer disk) to allow the individual student to study at his or her own pace, combined with occasional use of interactive telecommunications technologies for group meetings among all enrolled students.

Characteristics of Model 1:

- class sessions involve synchronous communication; students and faculty are required to be in a particular place at a particular time (once a week at a minimum)

- number of sites varies from two (point-to-point) to five or more (point-to-multipoint); the greater the number of sites, the greater the complexity -- technically, logistically, and perceptually
- students may enroll at sites more convenient to their homes or work locations than the campus
- institutions are able to serve small numbers of students in each location
- the nature of the experience mimics that of the classroom for both the instructor and the student [2]

The main thesis of this paper is that a paradigm change can be observed in the fields of teaching and training the last few years. One of the most important fields of this change is the field of teacher training, since all influences have a multiplied effect in this field. The new paradigm gets to more and more people through teachers. In the first part of this paper, I would like to guide you through the theoretical background of this phenomenon.

At the Berzsenyi Dániel College we recognized the need for change, so we introduced a new course three years ago. Its name was Introduction to Information Technology. The goal of this course is to broadcast this new paradigm to students, who are going to become teachers, and to make them able to play an important role in shaping this new paradigm.

The name of the course:

Foundations of information technology:

The period of teaching the course:

2 semesters, 2 lessons per week

Curriculum

Opening lesson

Windows foundations

Internet I - E-mail, WWW

Word processing I

Word processing II

Word processing III

Word processing IV

Internet II - foundations, E-mail

Internet III - WWW

Internet IV - IRC, ICQ

Internet V - FTP, Outlook

Test

Presentation creation I. (Microsoft Word)

Presentation creation II. (PowerPoint)Presentation creation III. (PowerPoint. Using wizards. Working with objects)Presentation creation IV. (Table. Notes. Animation. Action. Printing. Stand-alone presentation.)

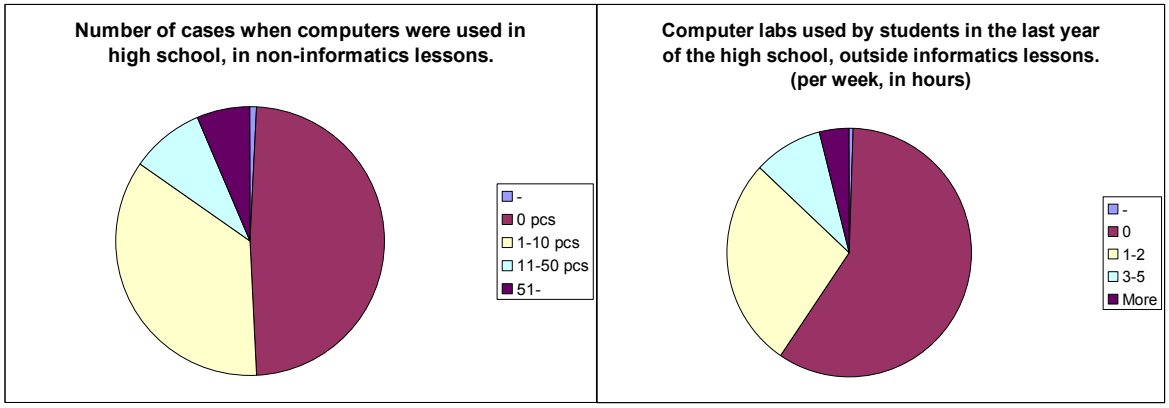
Image processing I. (Monitors, video cards)Test

Image processing II. (Microsoft Photo Editor)Sound processing (Physical properties of sound Windows and sound. Sound recorder. Media player. CD Player.)HTML editing I. (Parts of a web page, foundations Word and HTML)

HTML editing II. (Word and HTML (objects) PowerPoint and HTML)Test

1st year

In the first year we planned the training and made some measurement. All the students were trained with the 'face to face' method
The following diagrams shows some of the outcomes.



2nd year

After a year's experience, last year we changed the methods of this course. In a few groups, we started to use ODL-methods instead of the traditional teaching methods.

Experiment:

Does open and flexible learning help teaching without teachers being there all time, with the help of the Intranet of the college?

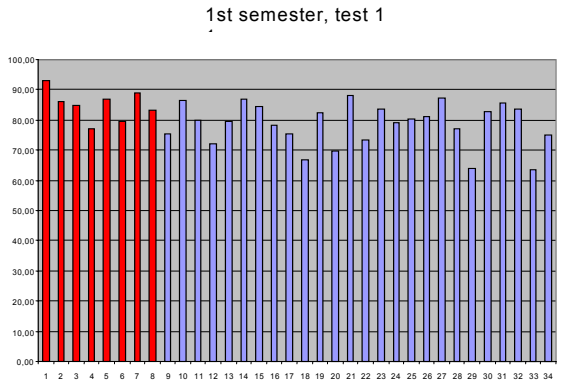
Hypothesis:

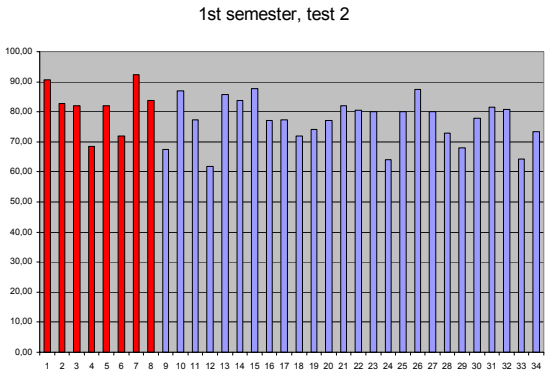
If students have a good grounding in information technology, then they can be educated without the presence of teachers, with using the Intranet of the college.

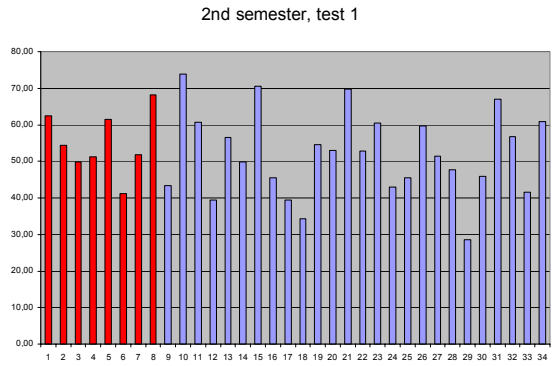
Dates:

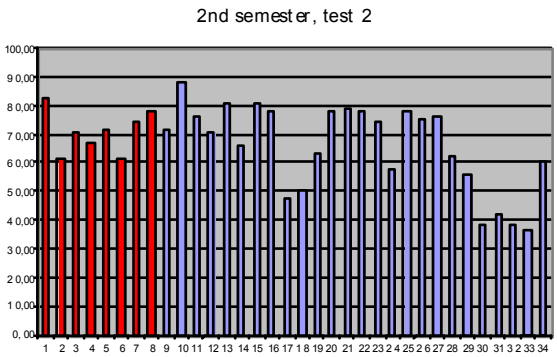
Number of students:	314
Students who are educated using flexible and open learning methods:	93
Number of face-to-face groups:	26
Number of ODL-groups:	8

The following four diagrams show the achievement of the special and the traditional groups. The achievement of the special groups (8 groups) are marked red, the achievement of the traditional groups are marked blue.

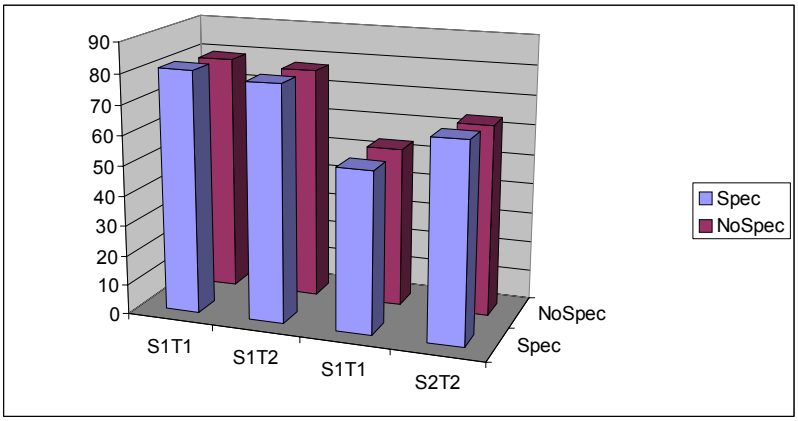






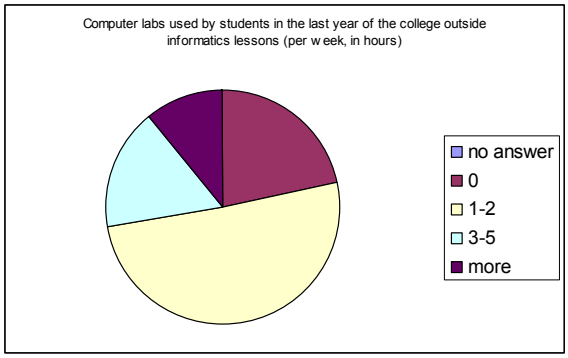


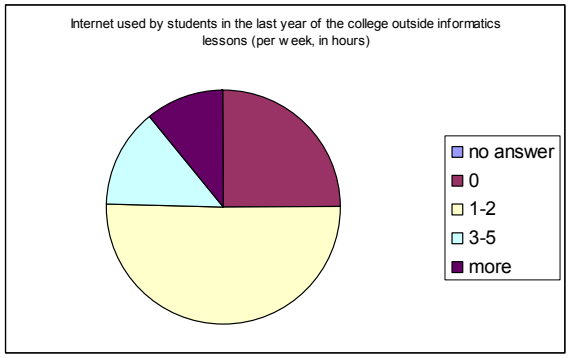
The last diagram shows the average score of the groups in the last four tests. According to the diagrams, the following statements can be made: there's no significant difference between the achievement of the groups trained by the ODL method and the groups trained with the traditional face-to-face method.



3rd year

In the third year we introduced the special (Hungarian) form of the Distributed Classroom model.
The consequence was:
In efficiency, there where no significant differences between the 'face to face' method and our model .
The following diagrams shows some of the outcomes.





Bibliography

[1] Thomas S. Kuhn, *The Structure of Scientific Revolutions,* First edition 1962, revised edition (Chicago: The University of Chicago Press, 1970).

[2] Models of Distance Education
A Conceptual Planning Tool Developed by University of Maryland University College for the University System of Maryland Institute for Distance Education
http://www.umuc.edu/ide/modlmenu.html