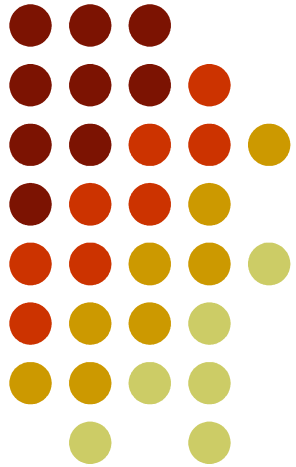
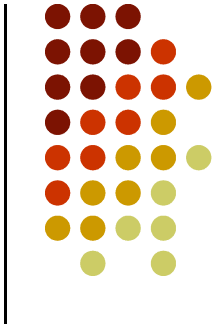
# E-LEARNING IN POLISH UNIVERSITIES: BETWEEN MISSION AND COMMERCE

R. Robert Gajewski
Division of Applied Computer Science
Faculty of Civil Engineering
Warsaw University of Technology
R.Gajewski@il.pw.edu.pl
RoGaj.il.pw.edu.pl

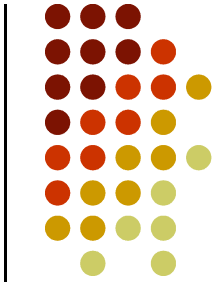


# Moral problem…



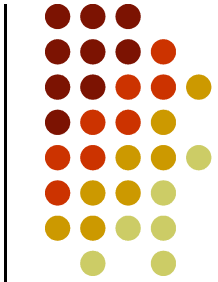
- The Humboldt university model characterized by the unity of research and teaching at the same place and time is loosing its power in Global Information Society
  - Modern universities use more and more Information Technology in their curriculum and are distributed in space and time
  - In Poland we not only face technical, social and financial problems but also a dilemma or even moral problem: to make a good business from education (selling knowledge) or fulfill educational mission

# Agenda



- Introductory remarks
- Three models
- New Polish Law
- Preparation of Materials
- LMS, CMS and… pedagogy
- Multimedia
- Learning Objects

# Pressures…



- One of the main pressures on the universities is nowadays the rapid development of information and communication technologies
  - Open and Distance Learning
  - Life Long Learning
  - All new technologies can be applied to traditional intramural students in a form of blended learning
- Discussion about the future of universities

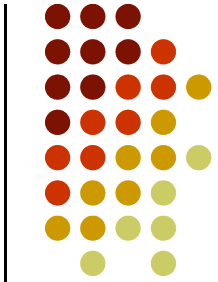
# Economic, social and political pressures

- A reduction in the willingness of the society to pay more for university education.
- A demand on the universities to equip people with the skills of LLL combined with the increasing heterogeneity among students.
- A commercialization of knowledge which generated opportunities for new markets and threats from new competitors.
- The impact from the age of information - universities no longer have monopoly on the production and transfer of knowledge

# Common opportunities, threats and constraints

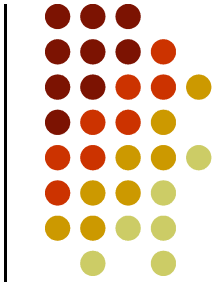
- Rapid changes in ICT are an opportunity to change the education from **teacher-centered** and **paper-based** to **learner-centered** and **network-based**.
- Advances in ICT and increase of available information provoke fear of non-structured mass of information which could not be managed by a university.
- The telecommunication infrastructure in Poland is not as good as in other European countries or US
- Another Polish constraint is the cost of using new technologies and the way in which resources can be reused in efficient way.

# Pressure to change
# Resistance to change



- Teachers' attitudes are a major obstacle to the introduction of changes.
  - When it comes to creating course package there is no motivation for an academic to get involved in a process for which there is no reward.
- Students' demands (those who have access to Internet) are a powerful factor forcing universities to exploit the potential of new technologies

# Open question by Cheese

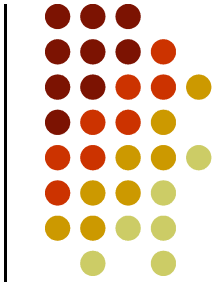


- What keeps universities from embracing e-Learning?
  - Universities do not see themselves as educational “content providers” because they have a proud tradition of combining learning, research, teaching and professional development.
  - The absence of many of the technical skills needed as well as the experience in marketing and customer service necessary to support and develop e-Learning.
  - Funding e-Learning at university level is yet another challenge.
  - Universities are also suspicious of the corporate side of e-Learning.

# Potiomkin village model

- Potiomkin Village means trickery, magnificent facade built in order to cover a shameful and unwished situation
  - e-Learning is getting popularity, so in some cases University authorities are willing to “have it on the board”.
  - In terms of investments it means concentration on infrastructure and commercial content production
  - It is clear that it does not lead to real and full implementation of e-Learning.
  - Virtual Technical University started nearly three years ago belongs to this category and is still very virtual a

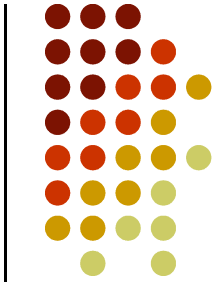
# Commercial model



- University is an enterprise which is supposed to produce high quality graduates and to create profits.
- Knowledge is a kind of good which could and should be sold like cars or houses.
  - Not too much is known about the details…

**Knowledge should be distributed for free for poor Polish society…**

# Blended model



- Many state universities simply decide to make e-Learning more popular.
- It means concentration of financial resources on consulting and infrastructure rather than on content production

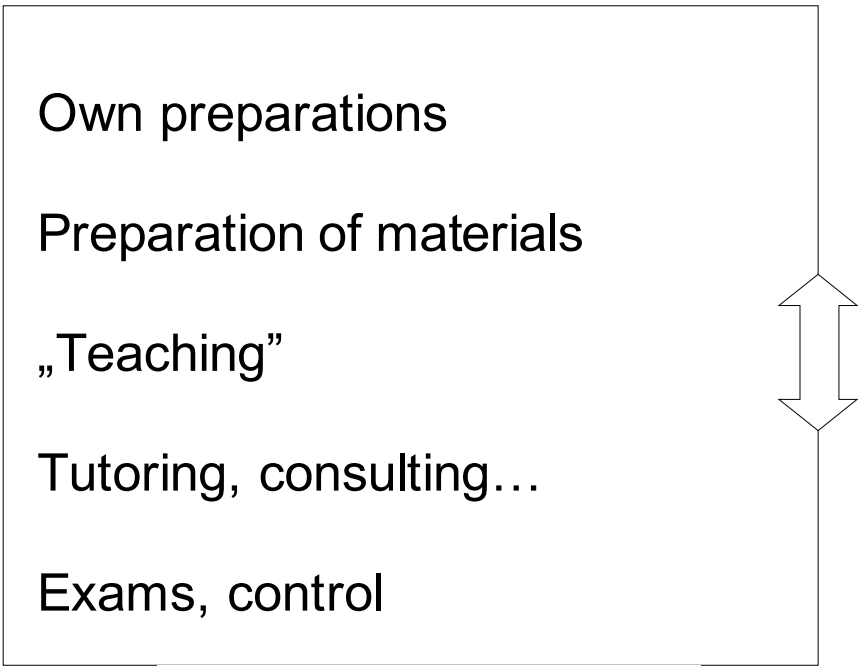
# New Polish law about higher education

- Big something…
  - Signed by President of RP 22.08.2005
  - Valid from 1 September 2005
  - 277 articles
  - 39 481 words
  - 286 024 signs
- Article 130
  - 240 teaching (didactic) hours/year

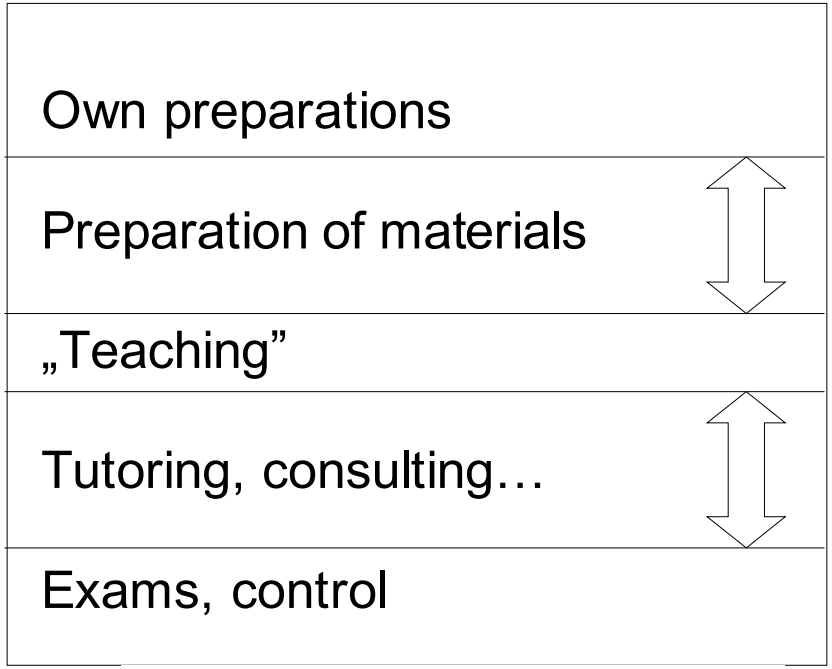
# XXI century…

**Distance Education is mentioned only twice in Article 164**

# Stationary versus non-stationary studies




**Stationary studies**



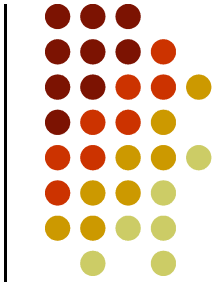

**Non-stationary studies**

# How to measure… not-measurable?

- PRL definition of space-and-time…
  - Dig this ditch from here till… 2pm!
- Ironical definition…
  - Prepare lecture from now to… 12 slides.

- E-Learning is dangerous
  - It shows what is hidden behind closed doors of lecture theaters…

# Preparation of materials… Commercial model

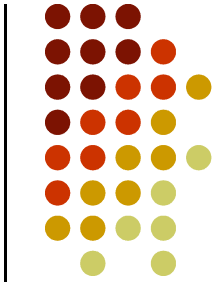


- There are independent institutions like publishing companies responsible for preparation of e-Learning materials
  - Is it a good business?

# Preparation of materials… University model

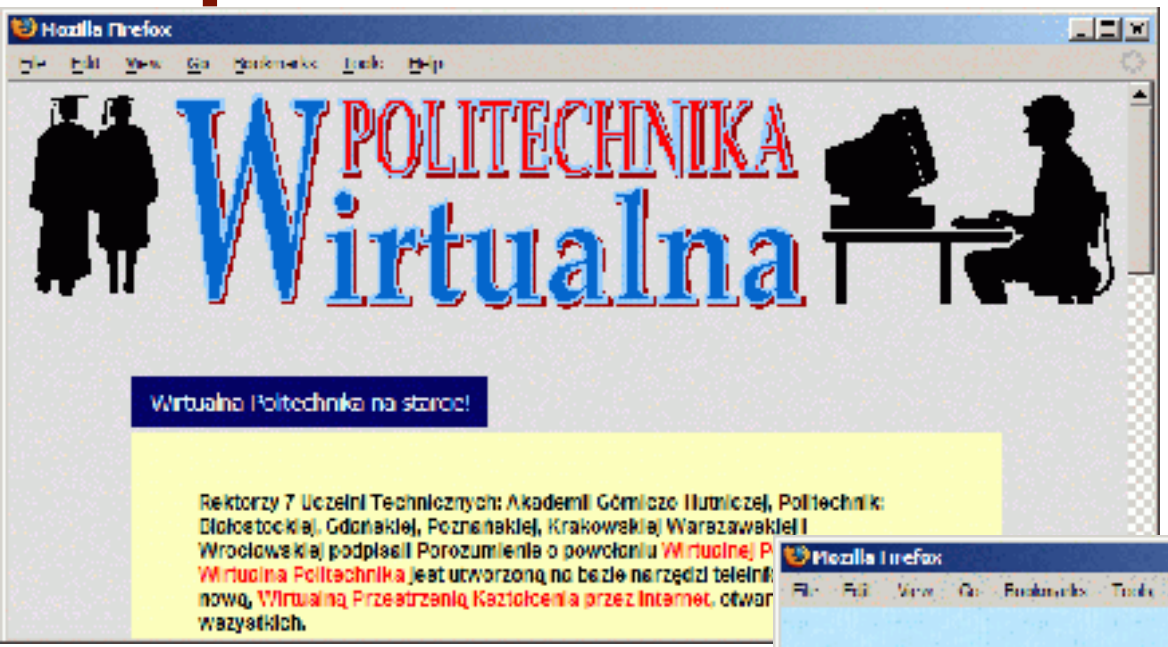
- University publishing companies and quite big university financial resources can also be used to prepare e-Learning materials
  - It requires changes in mentality

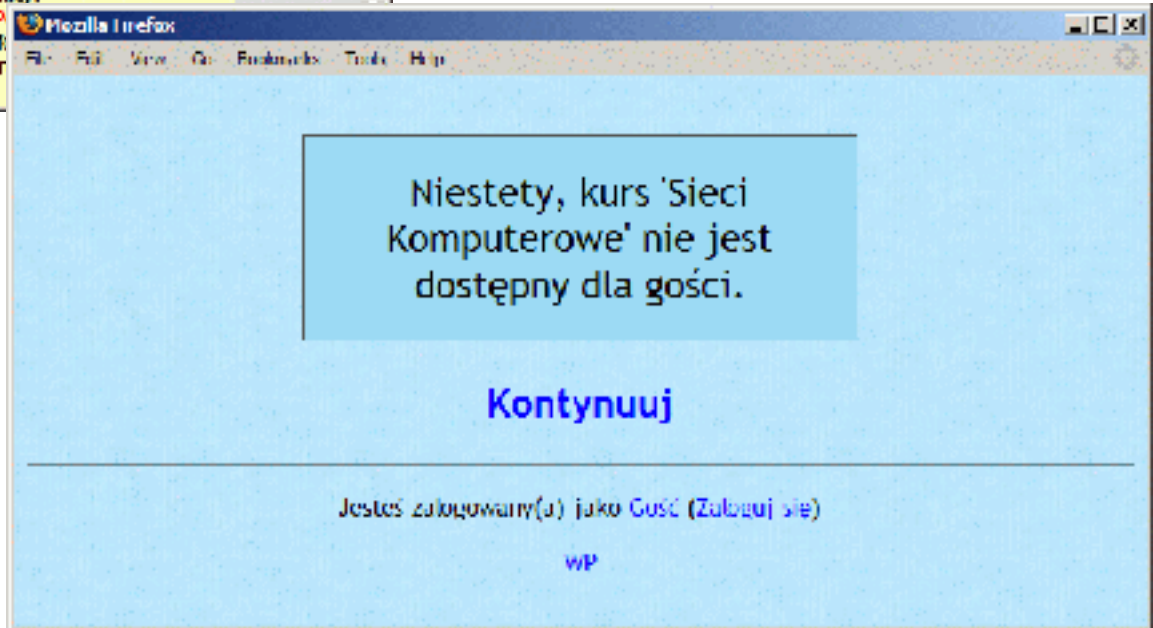
# Preparation of materials… Collaborative model



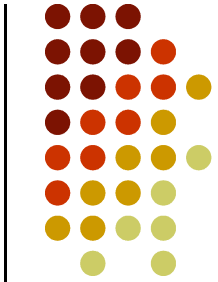
- There are many people preparing e-Learning materials
  - Why not to share such materials?

# Open but… closed!



# Processes & Levels



| | Producers/ Creation | Host/ Offer | Learners/ Access |
|---|---|---|---|
| **Curriculum** | | | |
| **Course** | *Course Authoring* | *Learning (Content) Management Systems* | |
| **Lesson** | | | |
| **Page** | | | |
| **Components** | *Media Editor* | *Media Server* | *Media Player* |

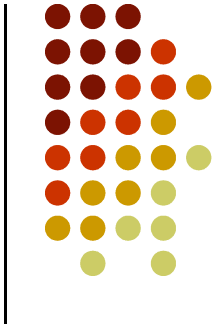
# LMS

- The courseware launching component that sequences instructional activities for a student, and provides the interface for student access to the activities.
- The course-development component that enables a course administrator to specify the content of the course in terms of lessons and the sequence of these lessons.
- The roster operations component that registers and enrolls the student.
- The assignment management component that assigns the lessons to the student and records the student performance data.
- The data collection component that provides the automated collection and management of data

# MOODLE @ Division of Applied Computer Science

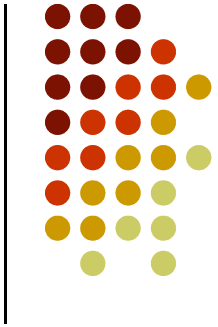
# MAMBO @ Division of Applied Computer Science

# Beyond technology… Philosophy



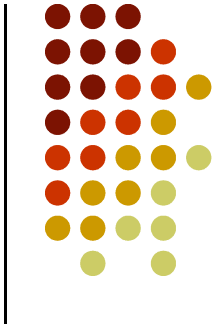
- The design and development of Moodle is guided by a particular philosophy of learning, a way of thinking that you may see referred to in shorthand as a "social constructionist pedagogy".
- These slides try to explain in simple terms what that phrase means by unpacking four main concepts behind it.
- Note that each of these is summarising one view of an immense amount of diverse research so these definitions may seem thin if you have read about these before.

# Constructivism



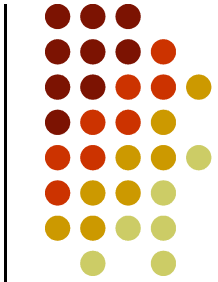
- This point of view maintains that people actively construct new knowledge as they interact with their environment.
- Everything you read, see, hear, feel, and touch is tested against your prior knowledge and if it is viable within your mental world, may form new knowledge you carry with you.
- Knowledge is strengthened if you can use it successfully in your wider environment.
- You are not just a memory bank passively absorbing information, nor can knowledge be "transmitted" to you just by reading something or listening to someone.

# Constructionism



- Constructionism asserts that learning is particularly effective when constructing something for others to experience.
- This can be anything from a spoken sentence or an internet posting, to more complex artifacts like a painting, a house or a software package.
- For example, you might read this page several times and still forget it by tomorrow - but if you were to try and explain these ideas to someone else in your own words, or produce a slideshow that explained these concepts, then I can guarantee you'd have a better understanding that is more integrated into your own ideas.

# Social constructivism

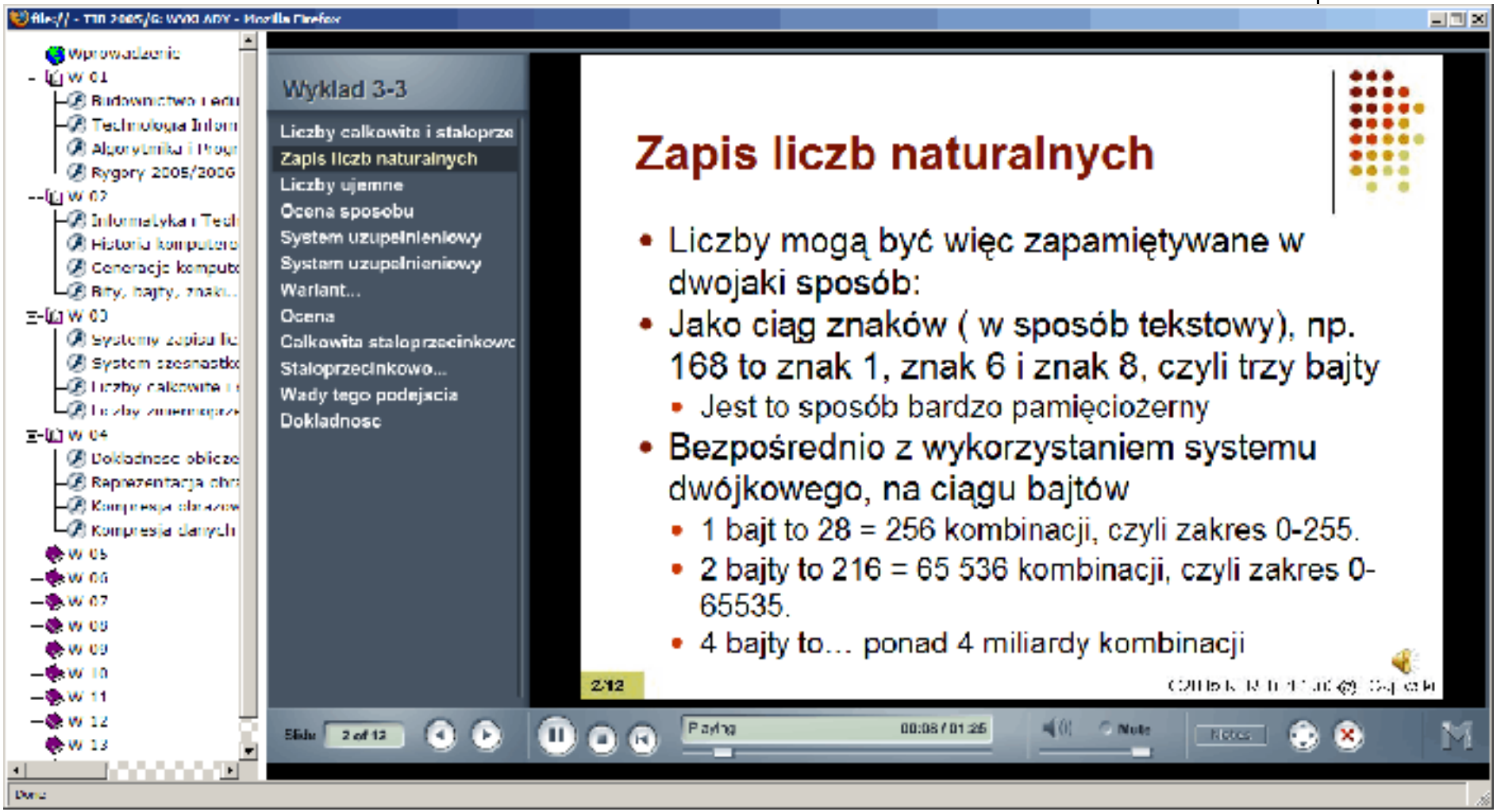


- This extends the above ideas into a social group constructing things for one another, collaboratively creating a small culture of shared artifacts with shared meanings.
- When one is immersed within a culture like this, one is learning all the time about how to be a part of that culture, on many levels.
- A more complex example is an online course - not only do the "shapes" of the software tools indicate certain things about the way online courses should work, but the activities and texts produced within the group as a whole will help shape how each person behaves within that group.

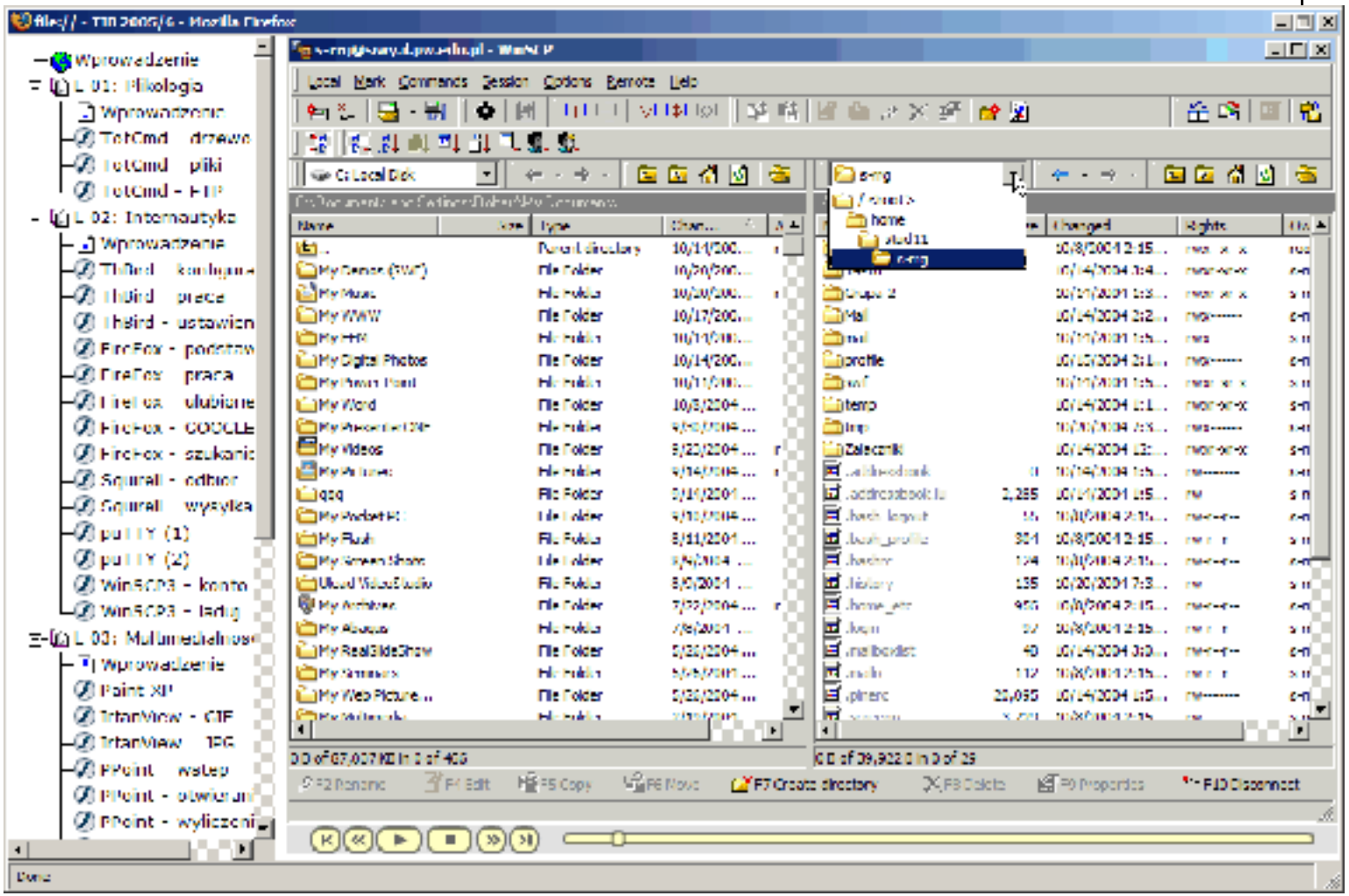
# Connected and Separate…

- This idea looks deeper into the motivations of individuals within a discussion.
- Separate behaviour is when someone tries to remain 'objective' and 'factual', and tends to defend their own ideas using logic to find holes in their opponent's ideas.
- Connected behaviour is a more empathic approach that accepts subjectivity, trying to listen and ask questions in an effort to understand the other point of view.
- Constructed behaviour is when a person is sensitive to both of these approaches and is able to choose either of them as appropriate to the current situation.

# Multimedia
# Streaming & WebCasting



# Multimedia
# Software animations



# Learning Objects Definition

- Traditional content can be several hours long.
- LO are definitely smaller units of learning material - they are typically 2-15 minutes long.
- They are self-contained which means that each object can be taken independently.
- Moreover they are reusable - a single object may be used in multiple contexts.
- LO can be easily aggregated into larger collections including traditional course structures.
- They are tagged with metadata so descriptive information allows them to be easily found by a search

# Learning Objects Pros and Cons

- From production costs point of view breaking content into LO can lower costs but on the other hand change of approach requires retraining and retooling costs.
- Taking into account pedagogical aspects LO fit nicely into many Instructional System Design theories but on the other hand can restrict pedagogical approaches.
- Finally from end user cost point of view LO can lower cost and increase choices but the cost of converting existing content may be significant

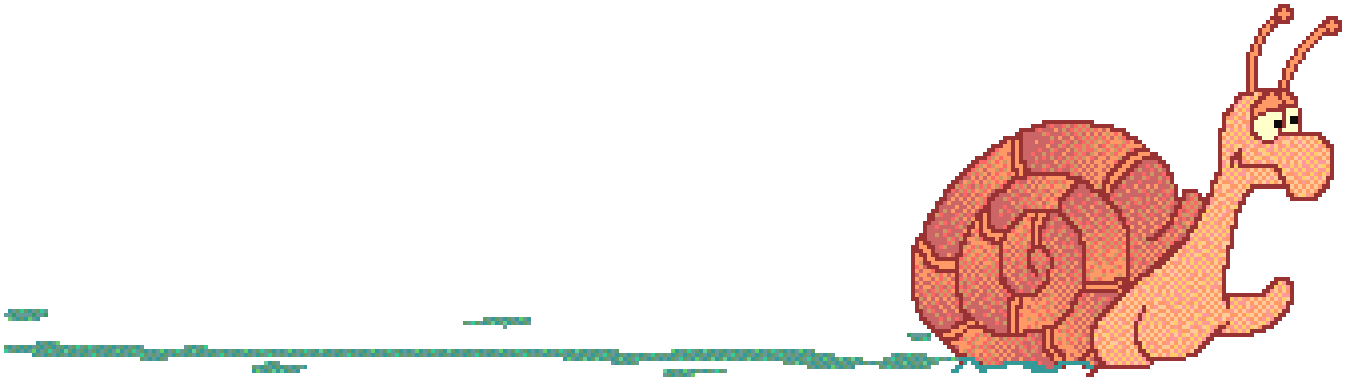
# Authoring tools

- Facilities that allow educators, who may not be computer experts, to create materials in an attractive way.
- Support for linking pieces of training material together into modules.
- Support for a range of question types.
- Response analysis that allows branching decisions based on students responses

# US, Europe…

- Hamburger-like Phoenix University
- MIT OpenCourseware Model
  - A free and open educational resource for faculty, students, and self-learners around the world.
  - OCW supports MIT's mission to advance knowledge and education, and serve the world in the 21st century
- European universities develop e-Learning initiatives but also blended learning is getting more popularity.
- This is the matter of **new legal solutions** or **finding rich sponsors**.

# Slowly, but…



# New dilemma…

**To be e-**
**or not to be…**