



## ELISA final Conference in Vienna, Tuesday, June 10th, 2008

# Lifelong Learning Will be Based on e-Learning: How to Get There?

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## The ultimate goal of educational policy...

- According to UNESCO and EC:
  - "Free lifelong learning for all everywhere at all times"
- But...lifelong learner in a knowledge-based society needs competencies:
  - self-direction and creativity,
  - critical thinking and problem-solving skills,
  - collaborative team-work and communication skills.
- Does it lead to a need for a "pre-lifelong-learning" to achieve those competencies?





## "The value" of Lifelong learning in EUROPE

- "Globalisation, new technologies and demographic developments constitute an enormous challenge; one of the answers to this problem is the access to lifelong learning."
  - Ján Figel' Commissioner for Education, Training, Culture and Multilingualism
- "EUROPE...the world's most dynamic and competitive knowledge based economy by 2010".
- Consequently education and training ... major points of attention in the policy and programs.
- **Sceptic**? (diversity, no statistics)





# There are several visions how to achieve the LLL European space

- One of the common denominators of all the visions for the future of lifelong learning is that: "It should be based on the modern e-learning principles and practices.
  - Though simple at first glance, in reality this is a very complex task.





## E-learning and political environment

- Global: Democratization of Teaching (UNESCO Declaration)
- EU: Initiative e-Europe, Virtual Education Development Programme
  - Eased access to education
  - Support of standardisation
  - Market places for learning resources
  - Support of teachers or trainers
  - Public private partnerships for learning

#### National:

- GB: "UK e-Universities Worldwide" 2001-2004, 99 Mio. Euro
- Germany: New Media Programme, P2P Application for Research
- Austria: New Media in Teaching Programme







## **Knowledge transfer environment of higher education institutions (Hansen 1998)**

Political Environment New providers

Sociodemographical Environment

Negotiating strength of funding bodies

 $\rightarrow$ 

Increased Competition



Empowered customers

Economic Environment

Alternative modes of study

Technological Environment











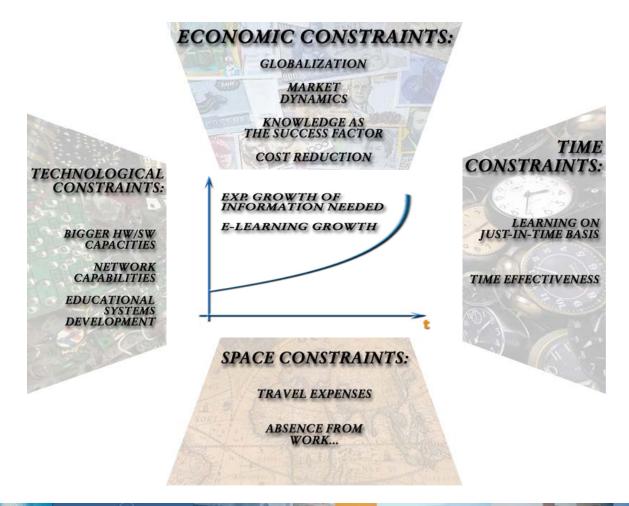
## Knowledge transfer environment of higher education institutions

- Demand for high quality content
- Demand for cost savings
- Increasing Partnerships with corporate world
- Internationalisation of student body and learning
- National and international alliances
- Increasing variety of educational offerings





## **Education challenges & constraints**









## **Terminology: Lifelong learning**

- Lifelong learning and University continuing education both describe very broad ideas and are consecuently very expansive and not consistently defined.
- In fact too many definitions of the terms: UNESCO, Council of Europe, European Commission, EUCEN.
- EC: »LLL is: all learning activity undertaken throught life, with the aim of improving knowledge, skills and competences within a personal, civic, social and/or employment-related perspective«. :: LLL Area!
- LLL; formal, non-formal and informal education







#### **Terminology: University Continuing education**

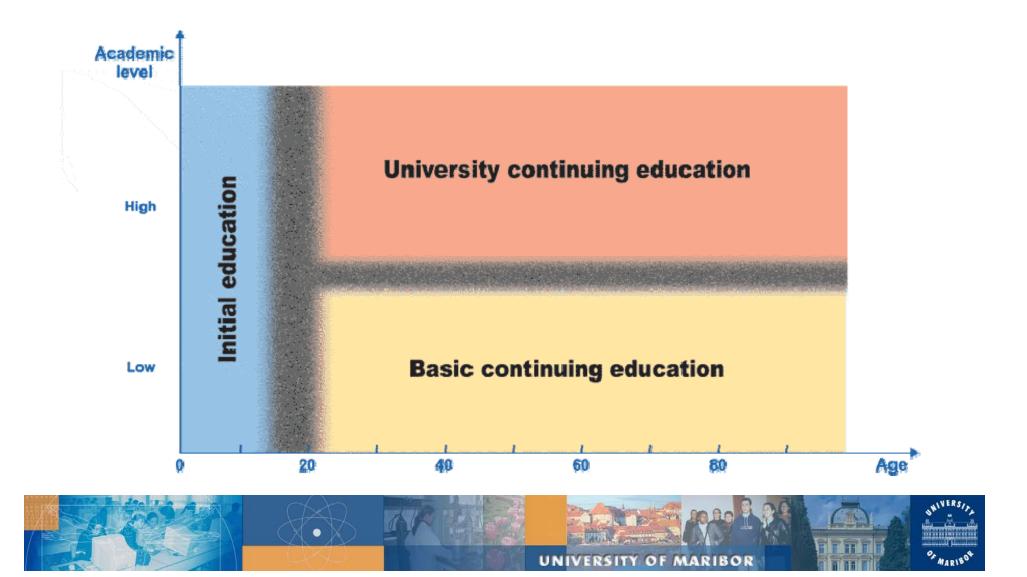
- EUCEN: »Any form of education, both vocational or general, resumed after an interval following the continuous initial education«.
- Full-time and part-time programmes for older adults leading to qualifications; courses taken for vocational reasons or for love of the subject; courses leading (but not necessarily) to credits, diplomas and degrees; courses taken by graduates (but not always so).
- "Adult education" (Finland) or "Permanent university education" (Spain) are synonims







### **Terminology**







#### Concerns of Continuing Education (Taylor)

- individual and cultural education for personal growth and understanding
- facilitating the pleasure of intellectual discovery and debate
- civic and collective education to meet the needs of the community and to enhance democratic structures
- developing adult students critical faculties
- disseminating the core value of university education
- awareness of scientific, environmental and social issues
- developing effectiveness and capability through intellectual and specialized skills
- generally bringing together the expertise and values of the university and the life experience and real life issues of the regional community.







## **Megatrends that impact LLL**

- Companies operate more and more in global markets
- Labor markets become world-wide and network based
- Bologna process, Lisbon, eEurope, EU policies
- Complex systems become basis of top products
- Innovation and exploitation of technology is crucial
- Use of mobile information network, open inf. sources...
- ICT enables info flow and profit. knowledge management
- Society emphasizes the older citizens motivation to learn







#### **Universities and LLL**

- UCE as continuing education provider and supporter of continuing professional development
- UCE as developer and organizer of universities' degree education, when operating with adults (employees)
- UCE as distributor of university level knowledge and as developer of methods of knowledge dissemination
- UCE as developer of e-learning, network based working methods and virtual university concept
- UCE as developer of workplace learning and other forms of recognized learning performance







# Organizational forms of Continuing Education within universities (Brennan, 2002)

- A University CE delivery through a separate department, centre or company, with or without expertise brought in from subject departments.
- B University CE delivery as above and by a range of subject departments with a number of functions for university continuing education (e.g. development, monitoring, quality assurance) carried out by the university continuing education department.
- C University CE delivery entirely devolved to subject departments but with strong central support through a range of functions e.g. strategic leadership, development, monitoring, quality assurance, promotion.
- D University CE delivery devolved to subject departments with little or no central support, co-ordination or monitoring.
- E University CE delivery through a consortium of institutions each contributing particular expertise towards collaborative university continuing education programmes.







## **Media for University CE**

- Face-to-face learning
- Reading academic (and professional) journals
- Correspondence education
- Distance education
- Telematics, with the use of CDs, multimedia, television, radio, cassettes, and videoconferencing
- E-learning and M-learning







## E-learning barriers - learner's point of view

- Technical expertise, support and infrastructure (learner can be uncomfortable using new technology)
- Social interaction (technology can be an isolation factor for the learner)
- Student support services ("friendliness" of the institution depends on the friendliness of the technology)
  - LLL technology platforms should be user friendly, robust, actively motivating, multimedia supported...







### (just) Few important E-learning issues for LLL

- Personalization of technology, interaction and content
- Quality issue
- Open educational resources
- ...







#### **Personalization**

- 1999: Gartner Group stated that, "matching direct or inferred reader requests through content personalization will be the most dramatic development in the Internet... through 2002, and will help differentiate the Web as a new medium."
- Todays' reports [8]: relative advantage, compatibility, ease of use, and trialability significantly impacts the intended use of the personalization features on a site
- Goal: to provide users with what they want or need (with) or without requiring them to ask for it explicitly.







## **Personalization technology**

- Software that learns patterns, habits, and preferences
- Toolbox of technologies and application features used in the design of an end-user experience
- Technologies:
  - use of databases (for example authentication),
  - cookies,
  - dynamic page generation,
  - pattern matching and machine-learning algorithms,
  - rule-based inferencing,
  - data mining.







## E-learning platform personalization

- User segmentation (role categories: teacher, learner, administrator) is not yet personalization but part of authetication or security service
- Building profiles (aggregated or individual)
- Real time personalization (consider also anonymous users)
- Goal: personalization with as little user intervention as possible (tracking usage data)







## **Personalization phases**

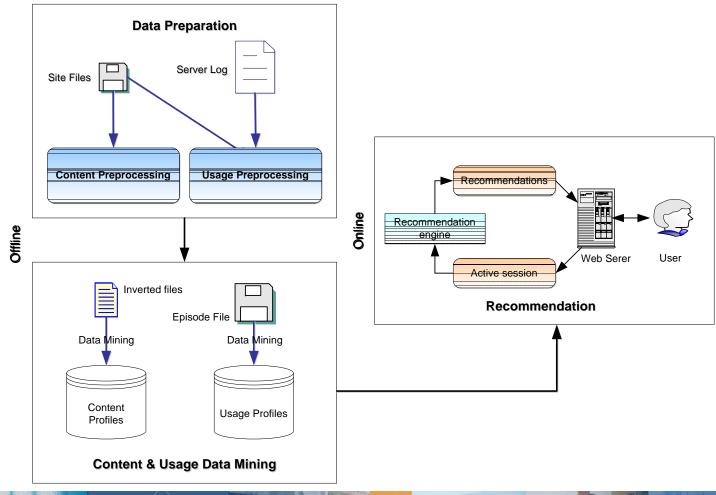
- Data preparation (enables knowledge discovery and pattern analysis phases): user, session and episode identification
- **Building profiles** vectors with weights for each page view according to some combination function against corresponding cluster vectors' components.
- Recommendations (real time components) user short history is represented as a vector of page views comparison of the current user session to usage profile with some matching function







## **Personalization phases**







## Personalization is supporting LLL

- Personalization makes the e-learning systems friendlier, successfully diminishes the technology barrier and adapt to the user's needs.
- Real time personalization will have to generate only relevant content for the user – especially in new generation of e-learning: the m-learning







## **Quality in E-learning**

- How to define the "quality in e-learning"?
- Reference point: "European Foundation for Quality in eLearning" - EFQUEL -<a href="http://www.qualityfoundation.org/">http://www.qualityfoundation.org/</a>
- From the learner's point of view the quality can be described as the ability to provide a learning experience which is tailored to the learners needs in the frame of the existing context conditions.







## Quality in e-learning ...

 Quality is more than just an evaluation at the end of a course. It is a comprehensive concept which concerns all areas of e-learning. It is a concept which builds the foundation for all provision of e-learning, and which is based on all processes of e-learning provision.







## Quality in E-learning – questions that have to be answered

- Who has to be involved in the quality development process?
- What is the object of quality development?
- How is quality defined for each process step?
  - (a) a needs analysis
  - (b) a decision process
  - (c) a realization phase
  - (d) an incorporation phase





## Dimensions of quality in e-learning

- 1. Dimension: Knowledge About Quality
   This dimension addresses the "pure" knowledge about the possibilities of today's quality development and quality strategies in e-learning.
- 2. Dimension: Quality Experience
   This dimension describes the ability of using quality strategies. It is based on the experiences actors have with activities in quality development and applying quality measures to e-learning scenarios.
- 3. Dimension: Quality Innovation & Adaptation
  This dimension relates to the ability which goes beyond the simple use of existing instruments and strategies. It refers to the modification, creation and development of quality strategies for ones own purpose.
- 4. Dimension: Quality Analysis
   Quality Analysis relates to the ability to analyse the processes of quality development critically in the light of ones own experiences and the own situation and context.







# **Quality of electronic learning material** (E-content)

- Technical implementation and compatibility
- Production quality
- User interface
- Content and didactical value







## All processes necessary to develop a new Elearning program according to ISO (document SC36 published in 2004)

- 1 Needs Analysis
- 1.1 Initiation
- 1.2 Stakeholders definition
- 1.3 Definition of objectives
- 1.4 Demand analysis
- 2 Framework analysis
- 2.1 Analysis of the external context
- 2.2 Qualifications
- 2.3 Resources (Budget, Schedule)
- 2.4 Environment
- 3 Design / Conception
- 3.1 Learning objectives
- 3.2 Concept of the contents
- 3.3 Didactic Concept / Methods
- 3.4 Roles
- 3.5 Organizational Concept

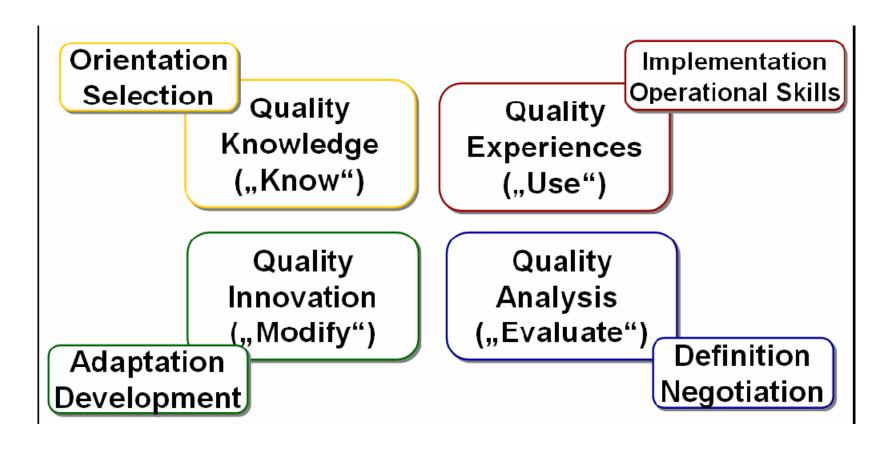
- 3.6 Technical Concept
- 3.7 Design Concept
- 3.8 Media concept
- 3.9 Communication concept
- 3.10 Test / Evaluation
- 4 Development / Production
- 4.1 Content realization
- 4.2 Design realization
- 4.3 Technical realization
- 4.4 Media realization
- 5 Implementation
- 5.1 Testing
- 5.2 Change Control
- 5.3 Activation
- 5.4 Technical Environment
- 5.5 Organization
- 5.6 Service concept

- 6 Learning Process / Realization
- 6.1 Administration
- 6.2 Learning acti∨ities
- 6.3 Support of learning activities
- 6.4 Review of Competency Level
- 6.5 Support of transfer
- 7 Evaluation
- 7.1 E∨aluation planning
- 7.2 Performance evaluation
- 7.3 Data Analysis
- 8 Optimization / Improvement





## **Dimensions of quality (Ehlers, 2004)**









## **Open source in E-learning**

- Open standards: example of the adoption of the Shareable Content Object Reference Model (SCORM) from ADL, which builds on work from IMS and AICC
- Open source software development initiatives (LMS, LCMS); Moodle, OpenUSS, Ilias, Claroline, Dokeos and many others including the Sakai project in the US





## Open educational resources in E-learning

- The term Open Educational Resources (OER) has been introduced and promoted in the context of UNESCO's aim to provide free access to educational resources on a global scale.
- First adopted by UNESCO in 2002 in the final report of the Forum on the Impact of Open Courseware for Higher Education in Developing Countries, to refer to: "the open provision of educational resources, enabled by information and communication technologies, for consultation, use and adaptation by a community of users for non-commercial purposes".







#### **OER** media

- Open courseware and content
- Open software tools
- Open material for e-learning capacity building of faculty staff
- Repositories of learning objects
- Free educational courses







### Attributes of the OER (Gesser)

- access to open content (including metadata) is provided free of charge for educational institutions, content services, and the end-users such as teachers, students and lifelong learners;
- content is liberally licensed for re-use in educational activities, favorably free from restrictions to modify, combine and repurpose the content; consequently, that the content should ideally be designed for easy re-use in that open content standards and formats are being employed;
- educational systems/tools software is used for which the source code is available (i.e. Open Source software) and that there are open Application Programming Interfaces (open APIs) and authorizations to re-use Web-based services as well as resources (e.g. for educational content RSS feeds).







#### Is the idea realistic?

- "Open questions" is:
   Who (and why) will create and provide educational content?
- Nevertheless, there are several successful initiatives:
  - European SchoolNet (EUN) and its European Learning Resource Exchange (LRE)
  - The MIT Open Courseware initiative (2001)
  - Open Courseware Consortium with over a 100 participating universities from all over the world
  - US-based Connexions platform which has about 200,000 unique visitors per month who come from over 150 countries.
  - Google Print Library Project
  - Global Learning Objects Brokered Exchange (GLOBE) initiative, which is a collaboration of ARIADNE (Europe), Education.au (Australia), eduSource Canada, MERLOT (USA) and NIME (J).









• OER "bible"

Open Educational Practices and Resources

OLCOS Roadmap 2012

Edited by Guntram Geser Salzburg Research EduMedia Group









#### **Conclusions**

- Being on the top of the political agenda, LLL is presented as an answer to the challenges of globalization, new technologies and demographic developments.
- To reach the goal: "Free lifelong learning for all everywhere at all times", several questions will have to be answered and lifelong learning processes will still have to undergo a vast development in several areas.
- E-learning is going to be the foundation of LLL provision. E-learning creates new means of communication, new social relations between students and teachers and new ways of knowledge transfer (collaborative learning...).







#### **Conclusions**

- A systematical and standardized approach to quality issues in elearning is one of the critical steps of lifelong learning development.
- Really efective learner-centred and personalized Virtual learning evironments are still to be developed (Web 2.0 shows some development directions)
- OER is the "law" of LLL
- How the Universities will adapt?
   Monty Python's answer is: "And now for something completely different"







## Virtual learning community

- allow collaboration
- promote creativity and innovation
- make interdisciplinary learning possible

[Community: Persons with shared goals and shared values / rules.]







## Teaching / Learning Models

#### Instructivist Model

- learners are tolds what to do
- objectives are predetermined

Peer interaction is not important.

### **Constructivist Model**

- personal learning objectives (students decide what to learn)
- students construct knowlege

Learning is a social process.







## E-learning shifts in learning processes

- From linear to hypermedia learning,
- from instruction to construction and discovery,
- from teacher-centred to learner-centred education,
- from absorbing to learning how to navigate and how to learn (autonomous learning !!!),
- from school to lifelong learning,
- from one-size-fits-all to customized learning,
- from learning as torture to learning as fun, and,
- from the teacher as transmitter to the teacher as facilitator,







## Planning of e-learning

roles of persons involved

teaching strategies

?

needs of learner

learning community

′′

used technology

degree of virtuality

content

course evaluation





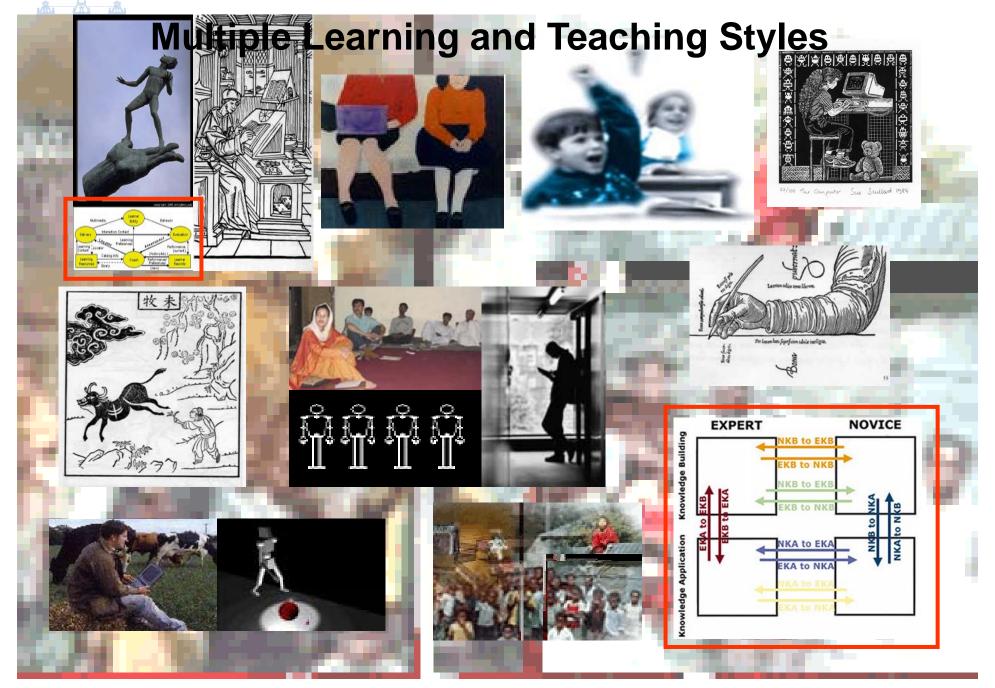


## Degree of Virtuality

- web-based training, computer-based training (only online)
- web-centric courses (only online)
- blended online courses
- additional online activities for f-2-f courses











#### New roles of teachers

- <u>Pedagogical competence</u>
   (e.g. providing guidance)
- Social competence
   (e.g. promoting interchange, "private" area)
- Managerial competence (e.g. course administration)
- <u>Technical competence</u>
   (e.g. hardware, software)







### New roles of learners

- knowledge generation (active search for solutions)
- <u>collaboration</u> (form networks)
- <u>process management</u> (participate with minimal guidance)







## Tasks in the e-learning organization

#### Learners:

- Content: html, multimedia supported, conferencing systems
- Interactivity: animations, simulations, automatic e-learning system
- Communication with tutor: asynchronous, synchronous
- Teamwork, collaborative learning

#### Tutors:

- Assessing knowledge: different levels of assesment, types of questions, e-learning quality evaluation (questionnaires, interviews)
- Users support, communication

#### Administrators:

Management of learning process (users, educations)

#### • Developers:

Use of standardized tools, not limited by e-learning platform







# 7 principles of good practice

- encourage student-tutor contact
- encourage student-student co-operation
- encourage active learning
- give prompt feedback
- emphasise time on task
- have and communicate high expectations
- respect diverse talents and ways of learning

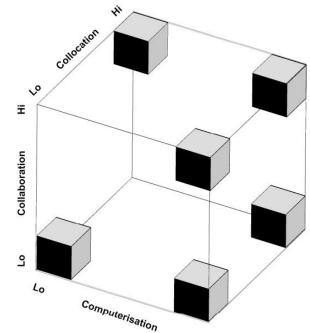






# Blended learning

 collocation low/high (face-to-face vs. distance learning)



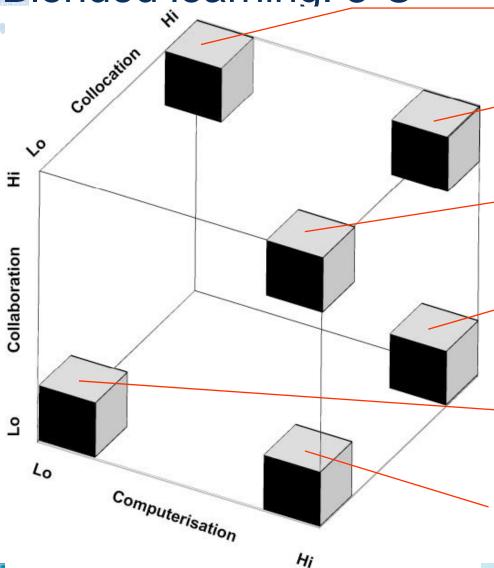
 collaboration low/high (individualised vs. collaborative learning)

 computerisation low/high (e-learning vs. traditional print and communication technologies)





Blended learning: 3-C



hi collocation

hi collaboration traditional laboratory

lo computerisation

hi collocation whiteboards in classrooms

hi collaboration virtual field trips

hi computerisation

lo collocation CACL, online forums

hi collaboration "Learning to teach online"

hi computerisation

hi collocation

lo collaboration video link lecture

hi computerisation

lo collocation

lo collaboration "traditional" OU DL

lo computerisation

lo collocation

lo collaboration CBT training

hi computerisation







### Barriers and prejudices about online learning

- "Faceless" teaching and faculty culture,
- fear of the imminent replacement of faculty by computers,
- diffusion of value traditionally placed on getting a degree,
- high cost of materials,
- taxpayer ignorance of the efficacy of distance education,
- lack of a national agenda, funding priority, and policy leadership,
- increased time required for both online contacts and preparation of materials/activities,
- the more techn. advanced the system, the more to go wrong,
- resistance to change and lack of technological assistance.



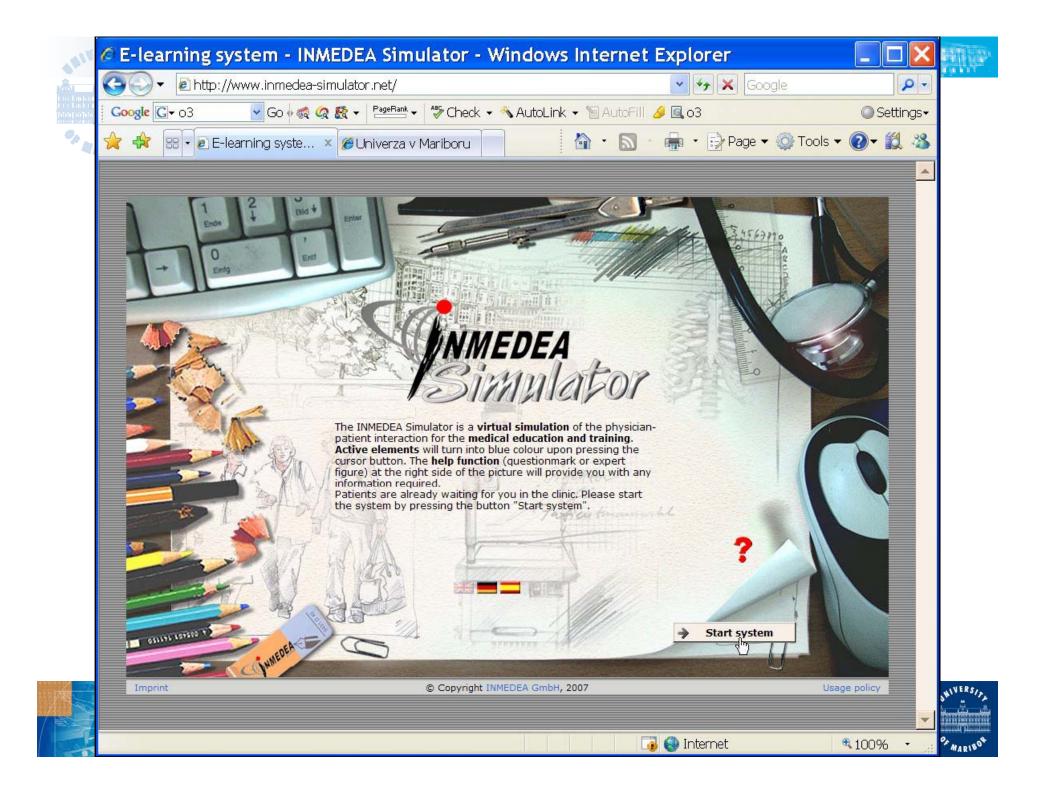


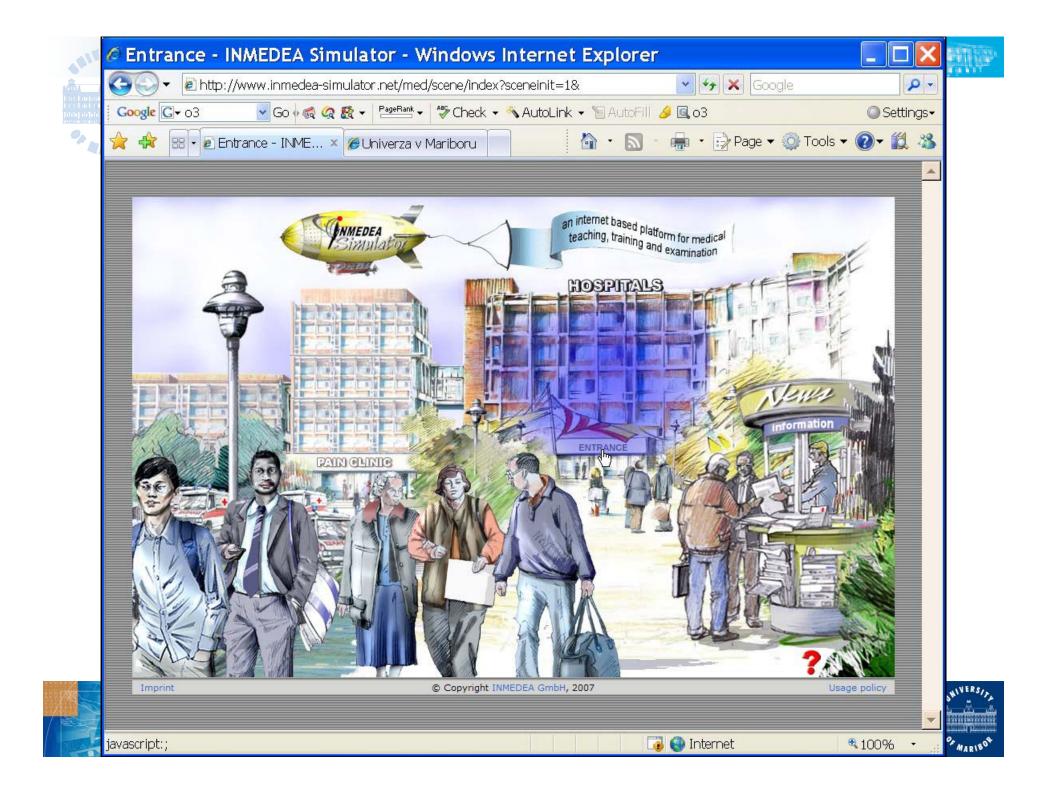


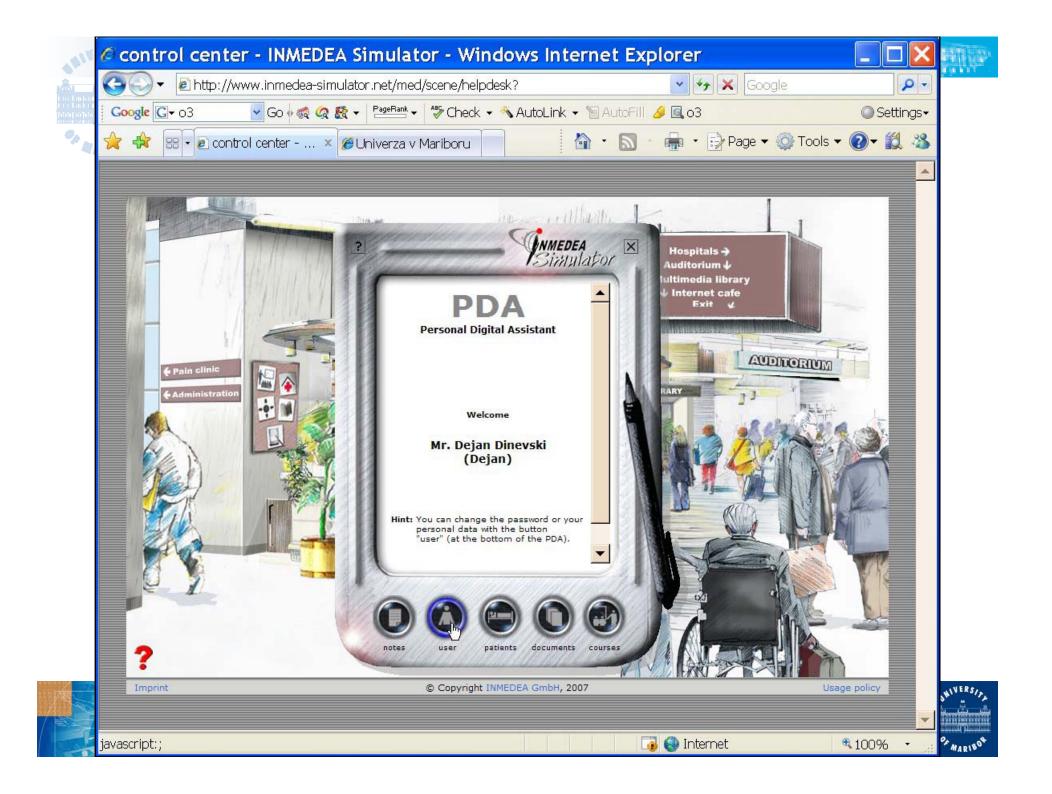
## Undisputed benefits of e-learning

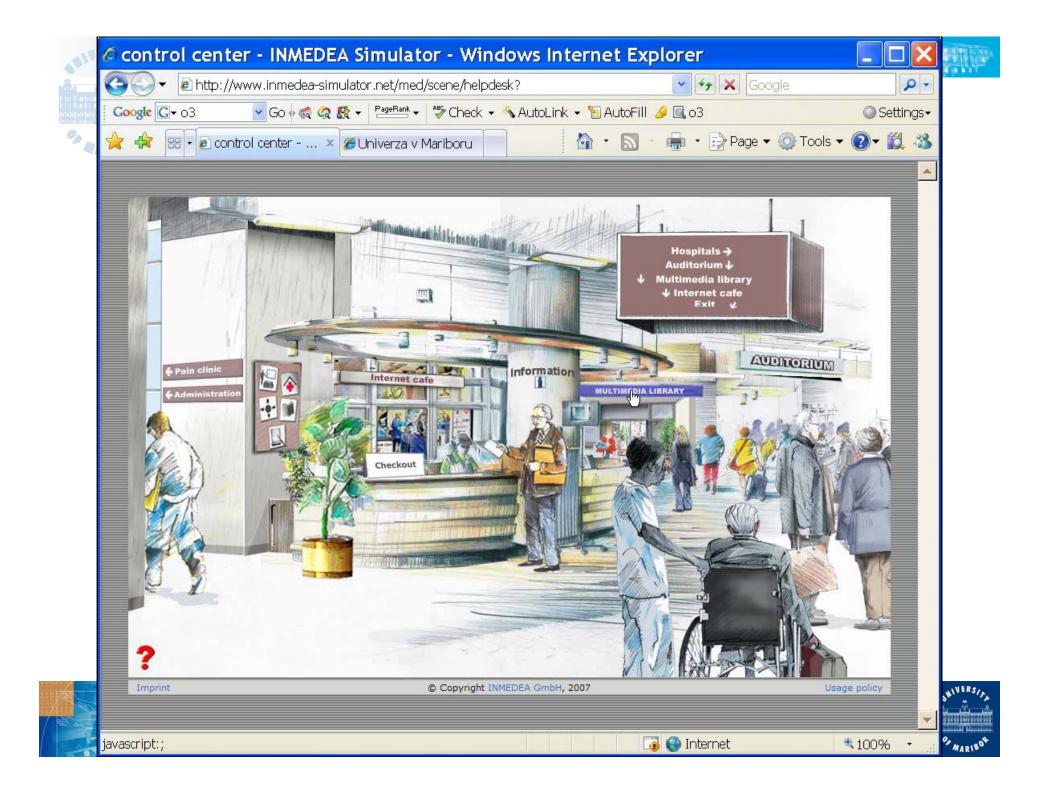
- Simple and instantaneous learning materials access, convenience,
- practicality, flexibility, consistency and improved learning retention,
- just-in-time information for career-active students,
- minimal disruption of family and work life responsibilities,
- elimination of space, time and geographical constraints,
- increased peer interaction due to the collaborative learning,
- increased interaction with more accessible teachers,
- increased quality of learning with deeper critical reflection,
- a methodical construction of ideas and
- increased access to information and other resources

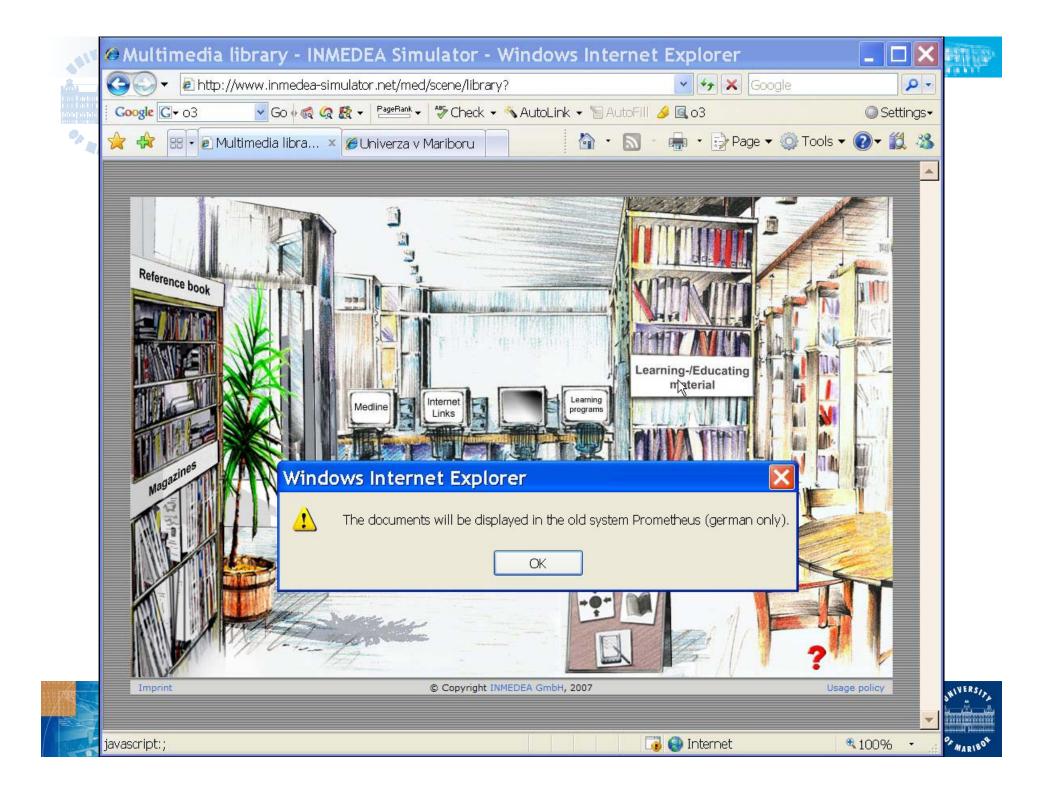


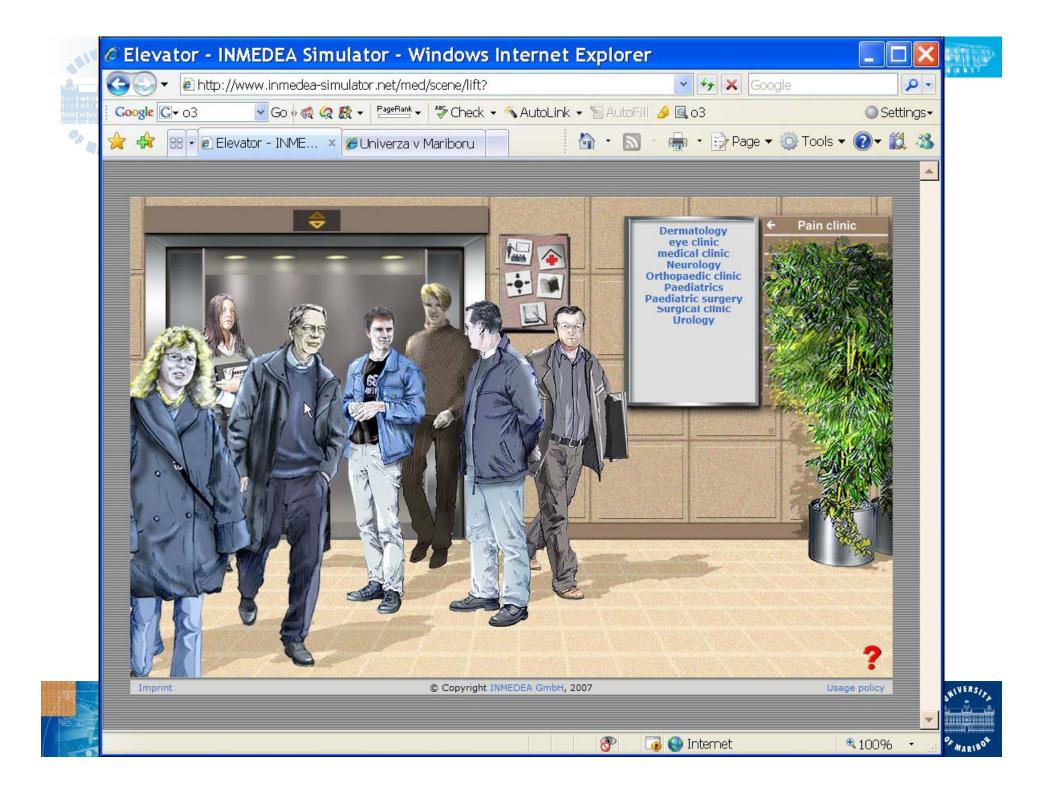


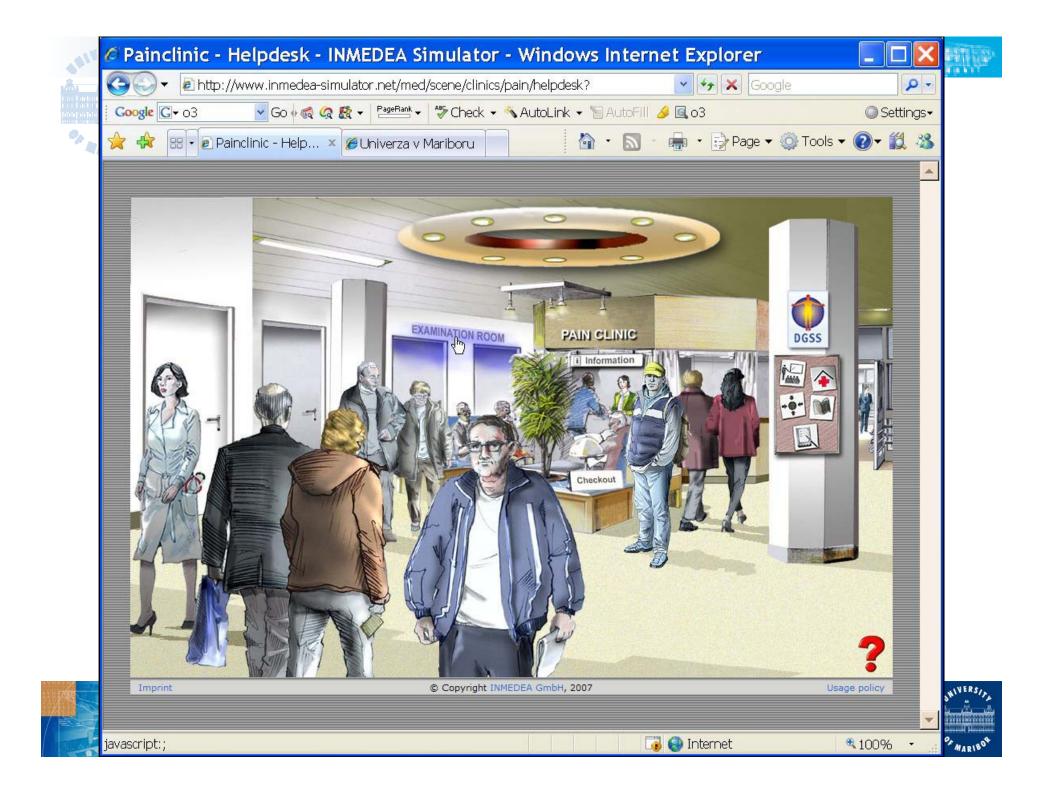


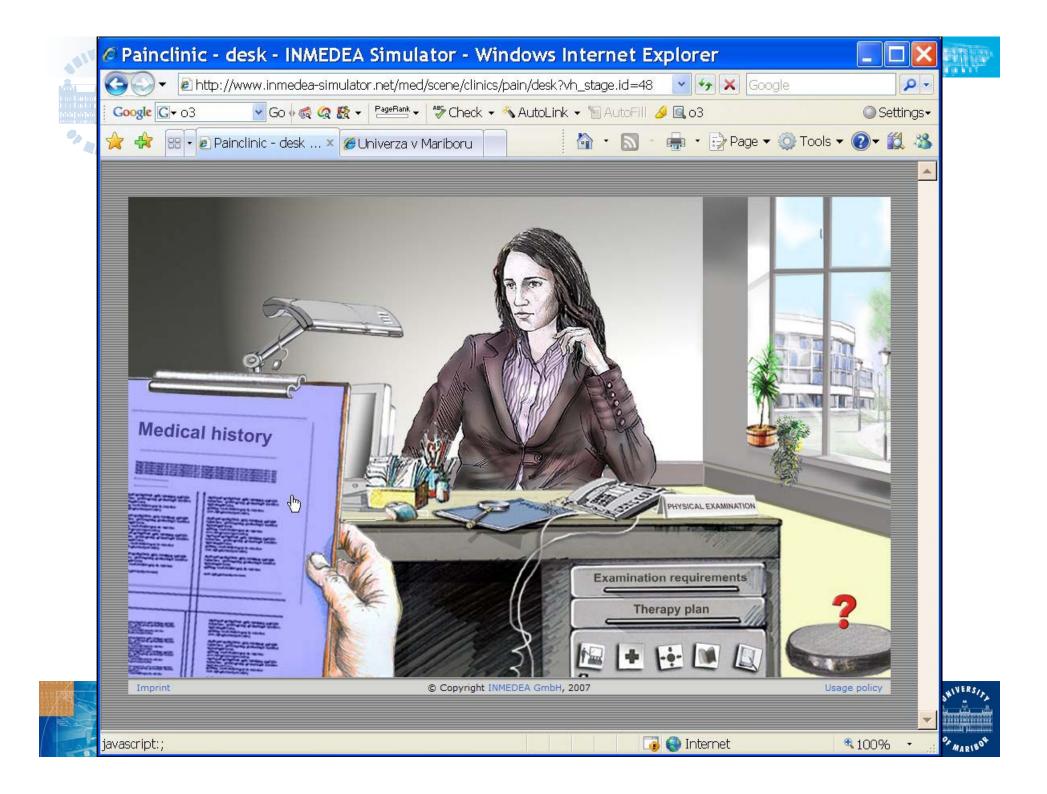


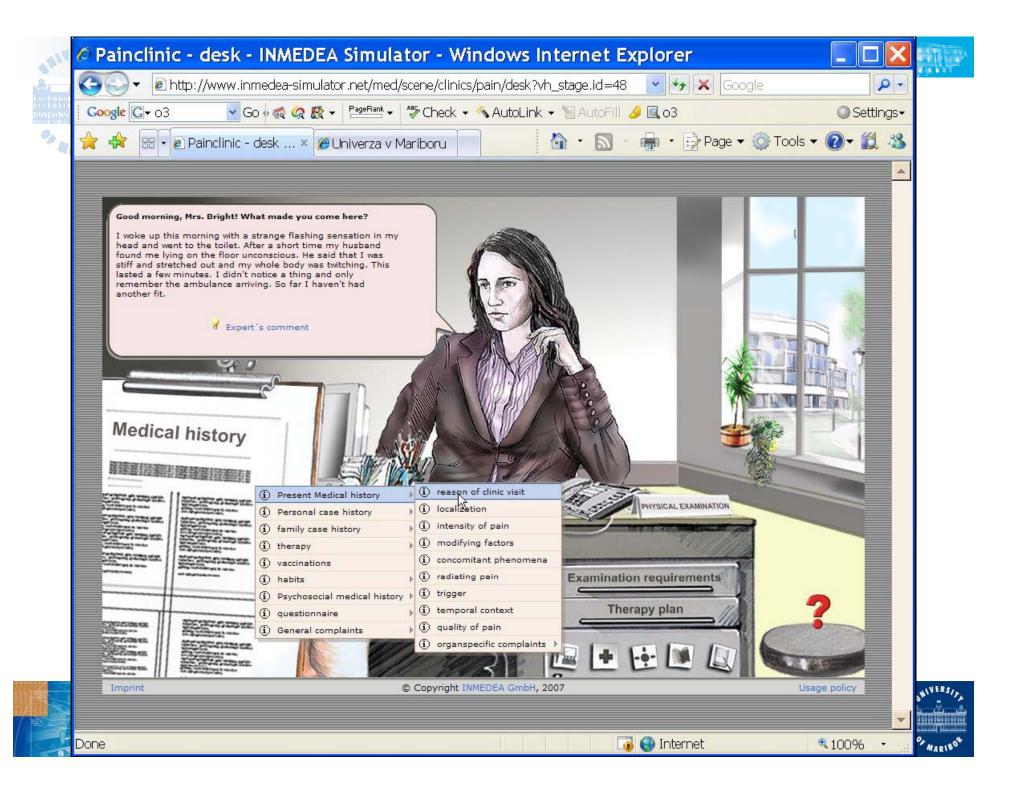


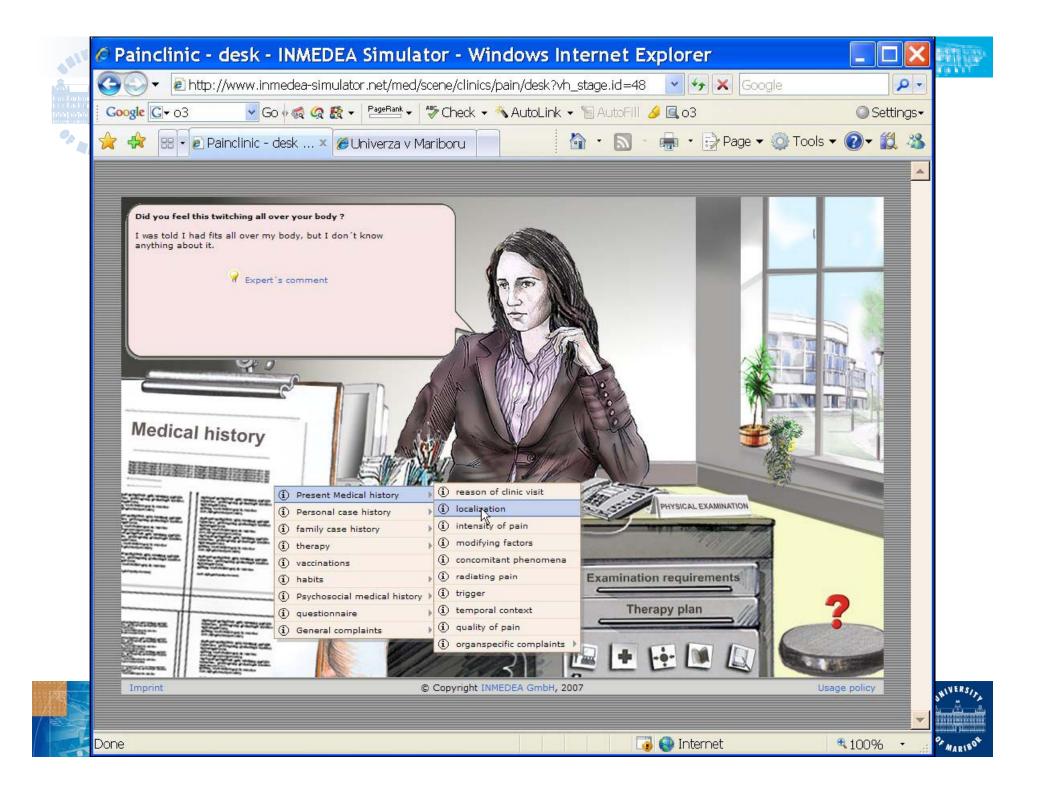


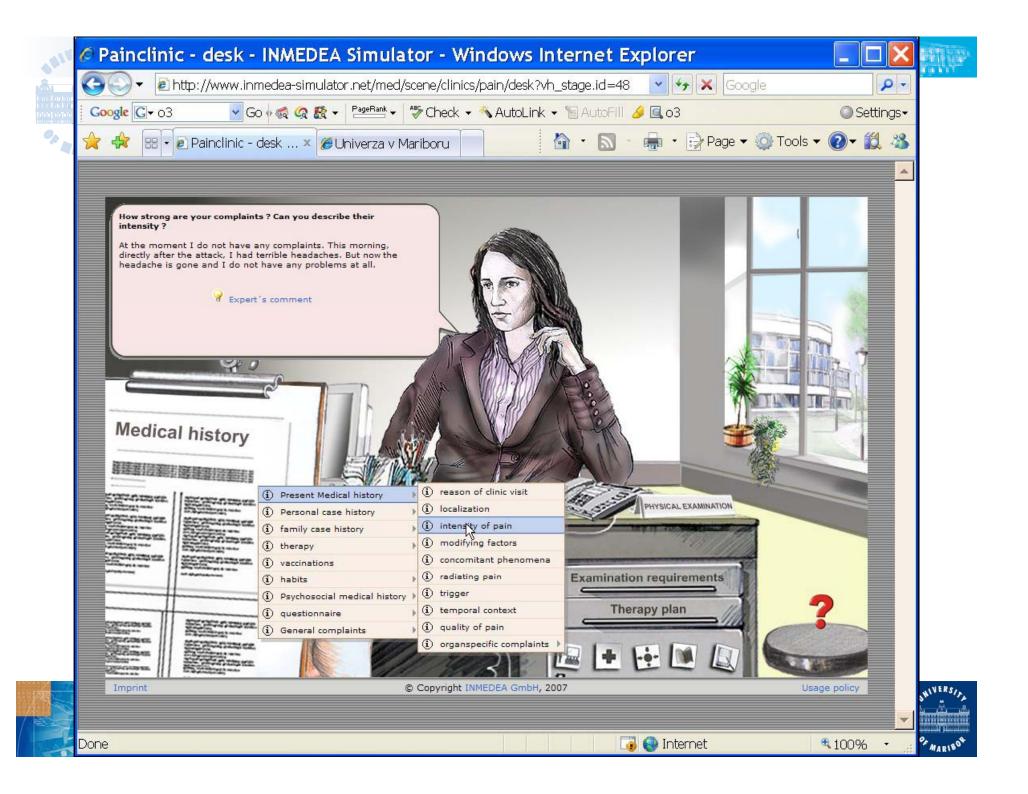


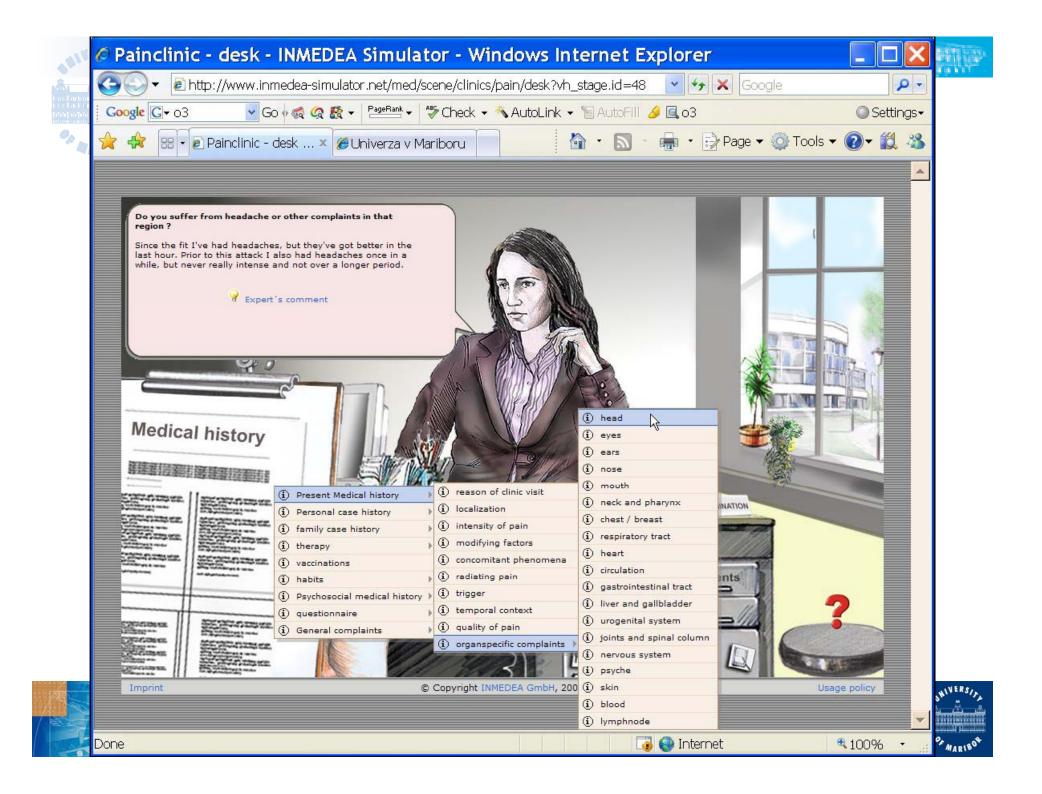


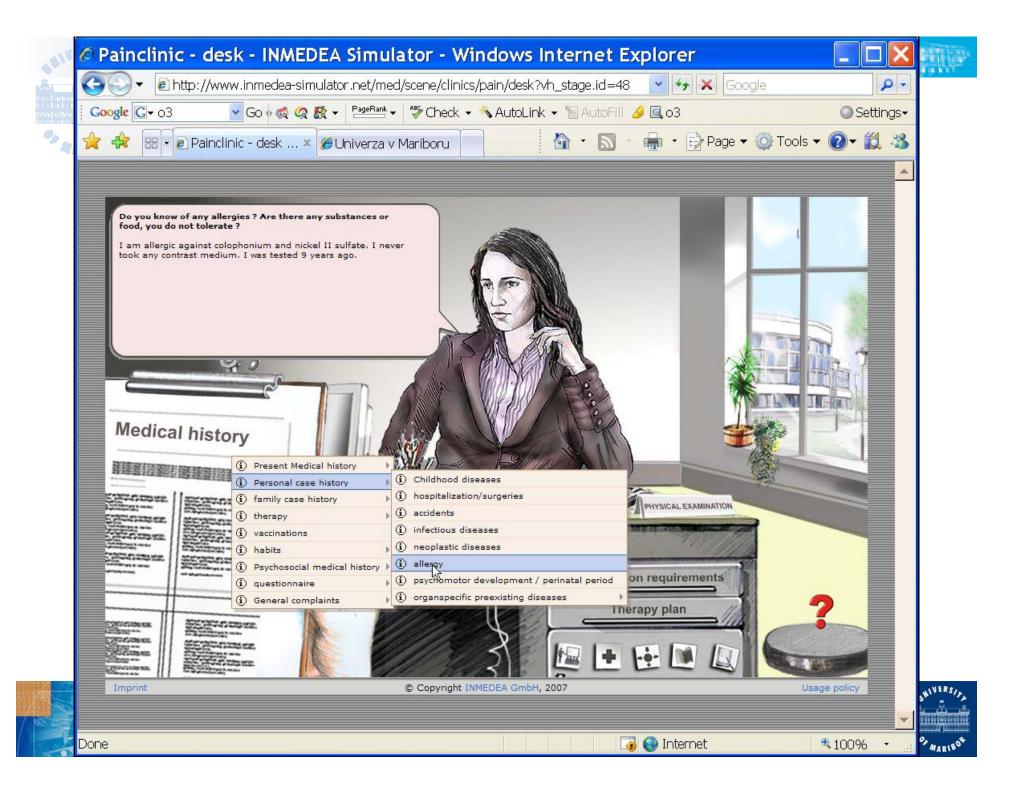


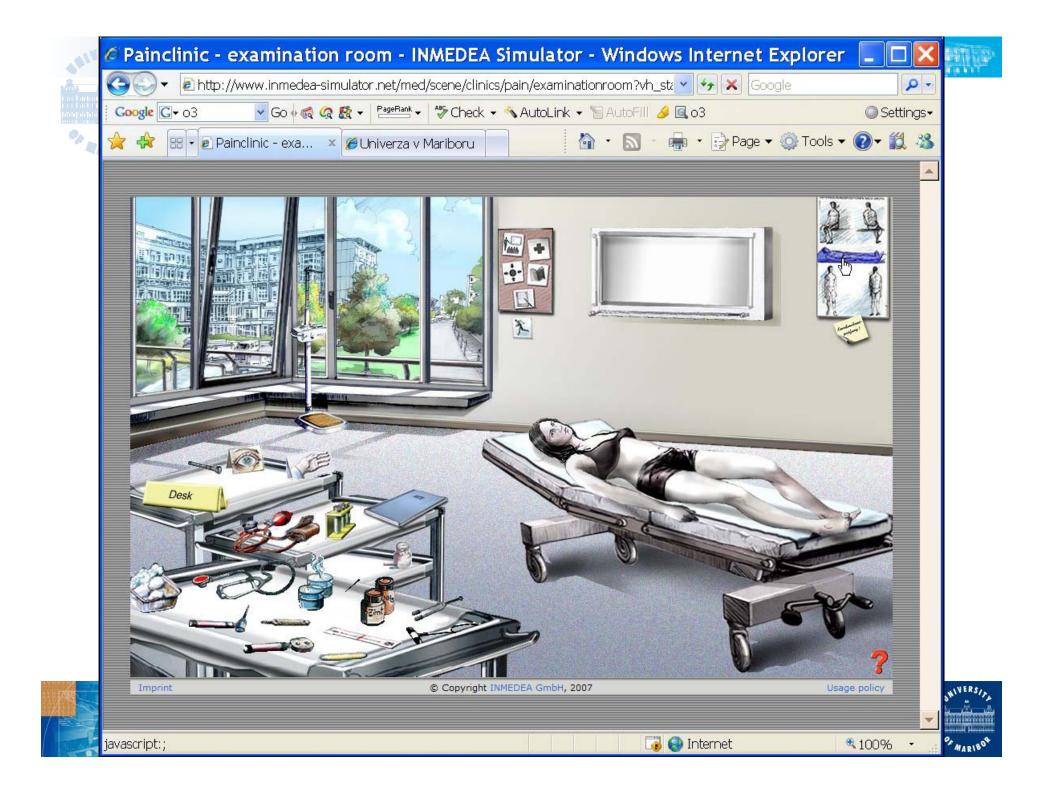


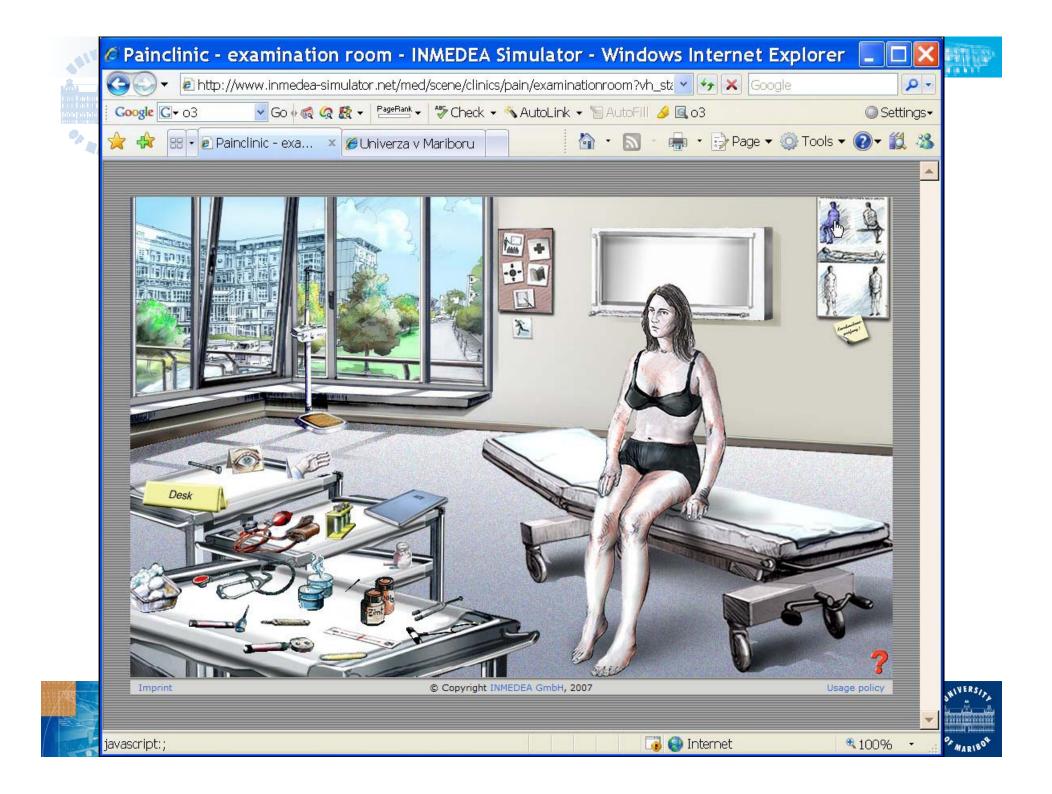


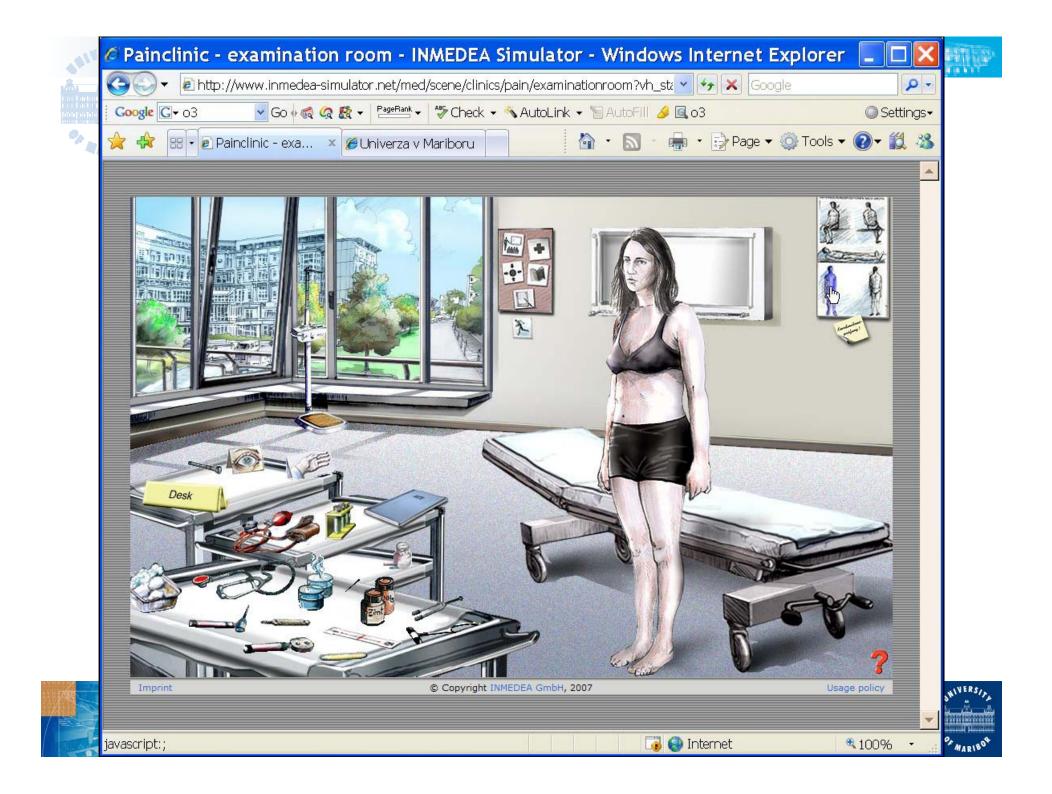


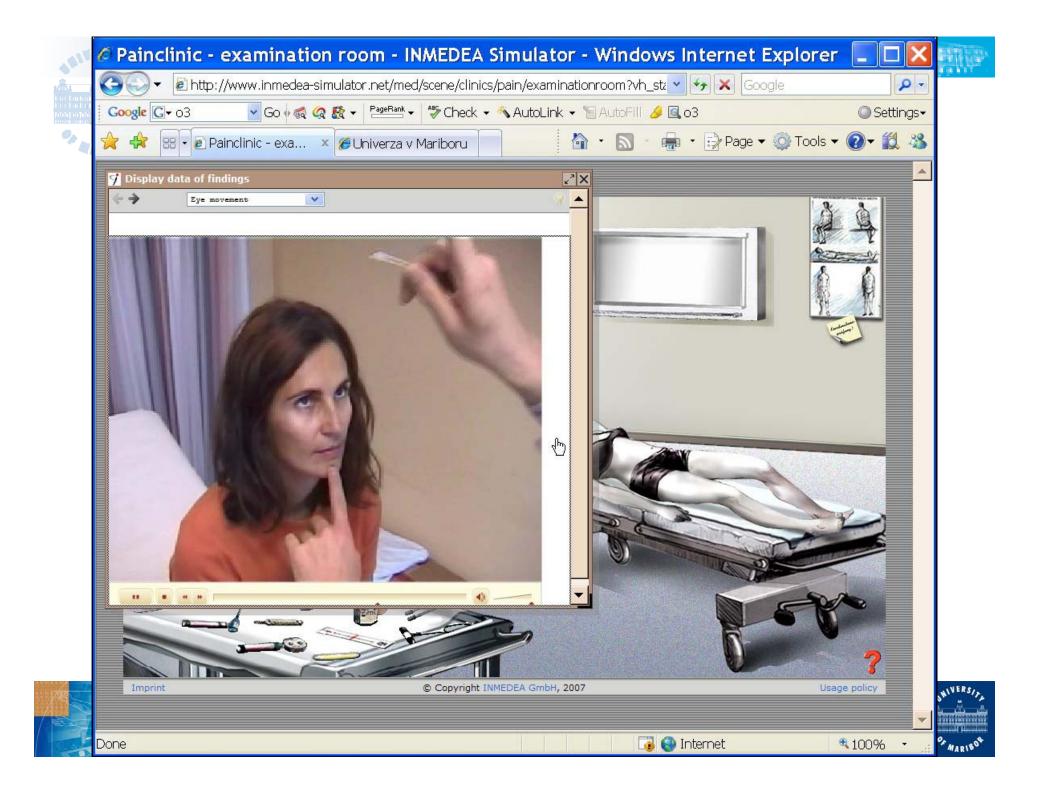


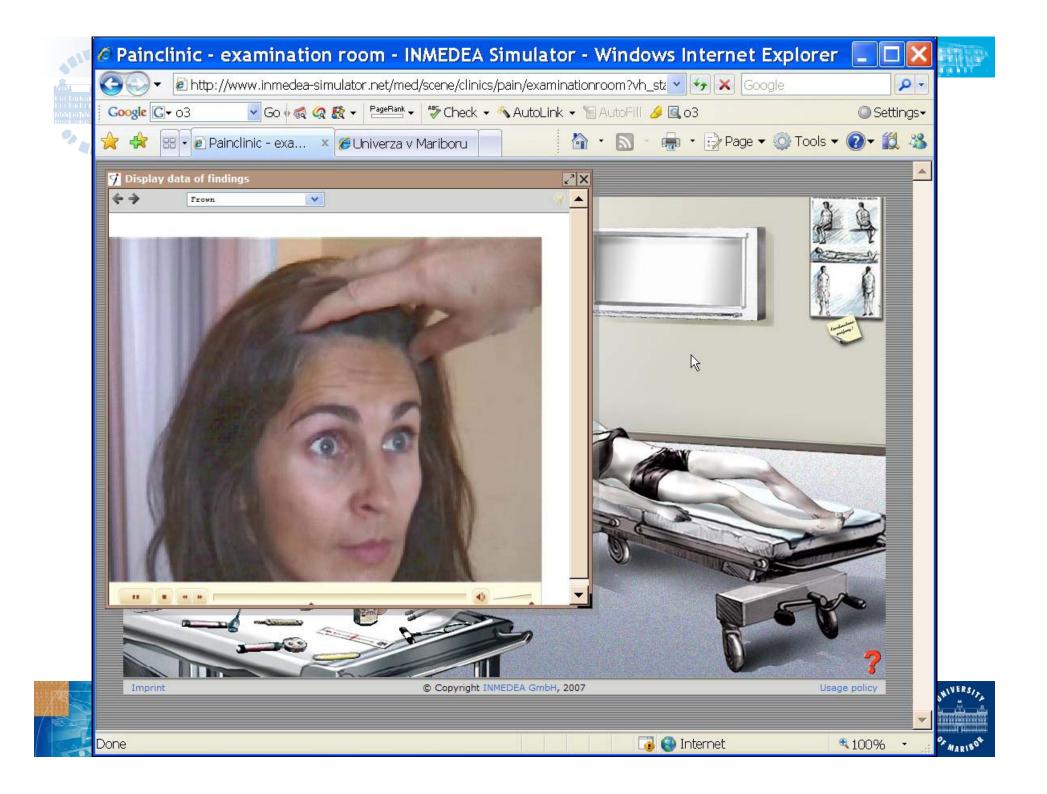


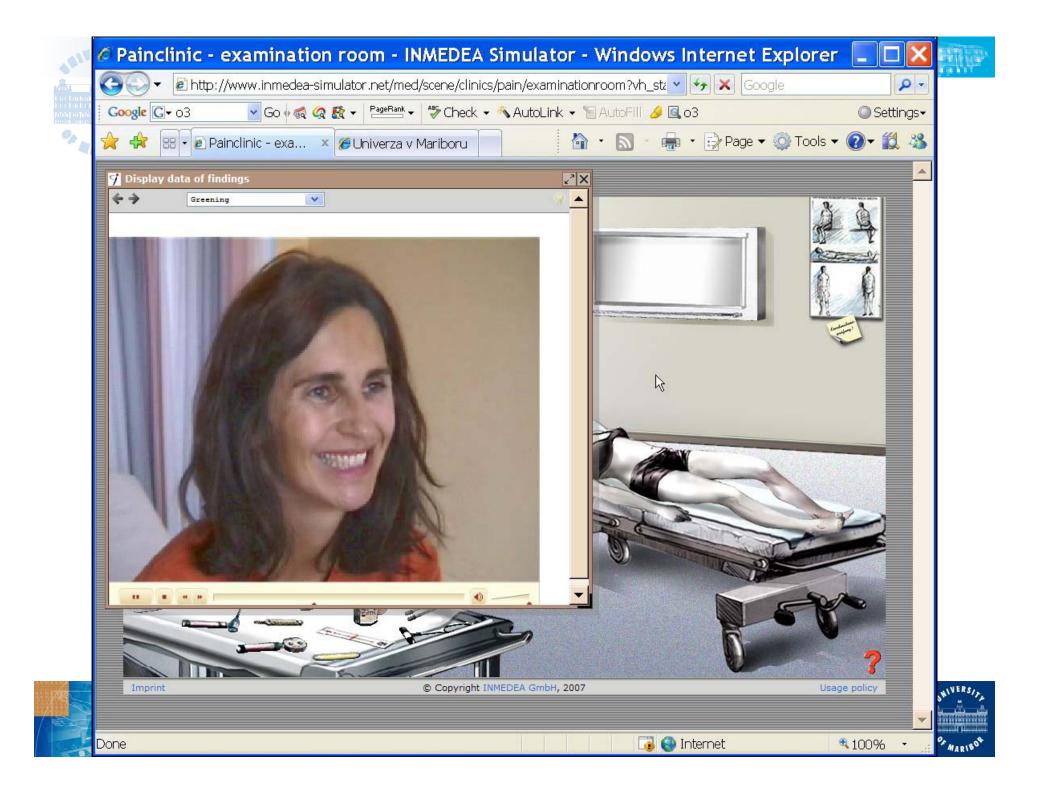


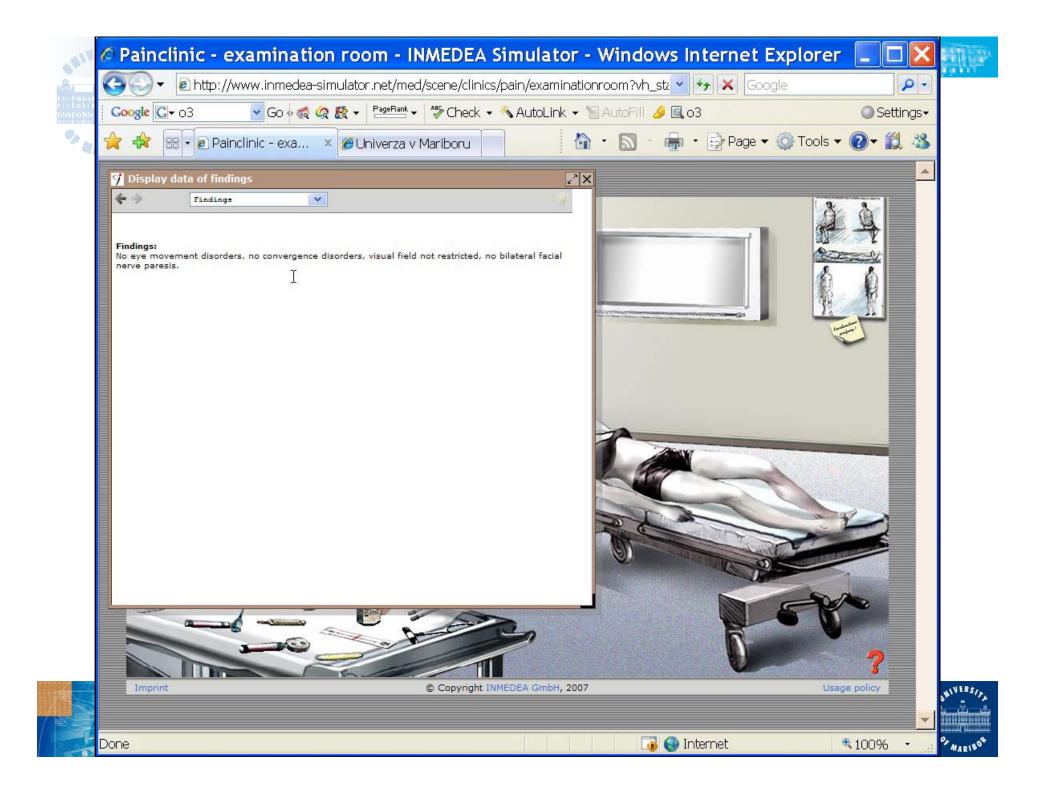


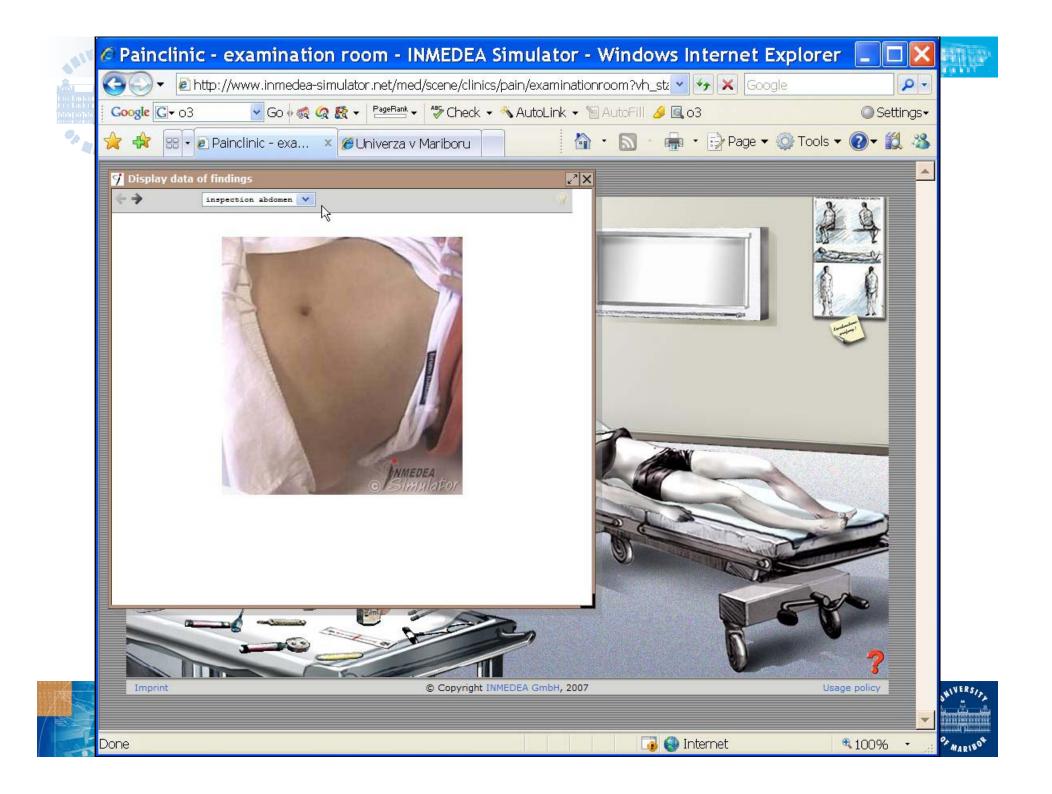


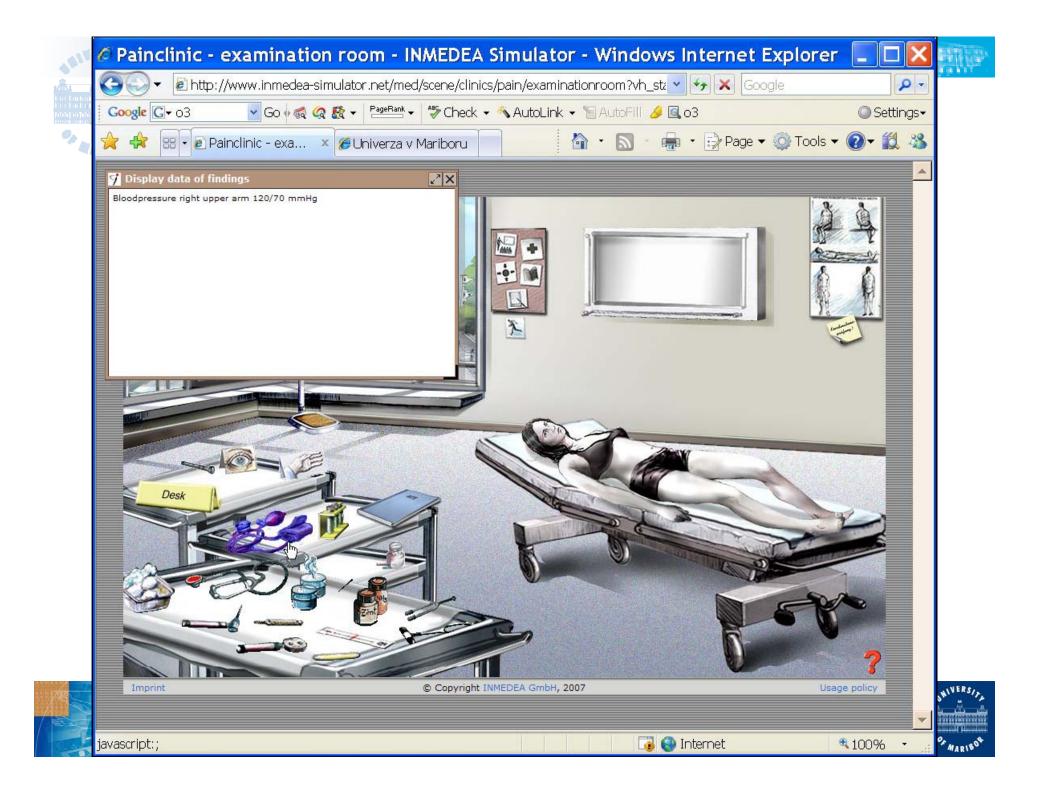


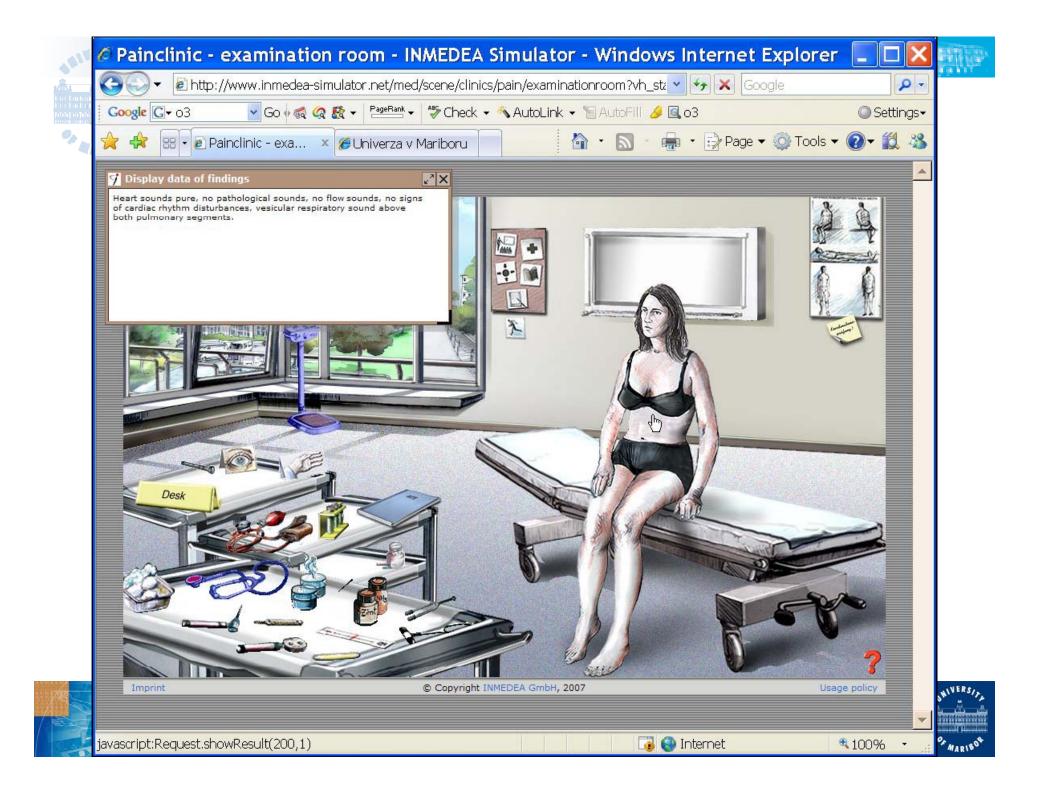


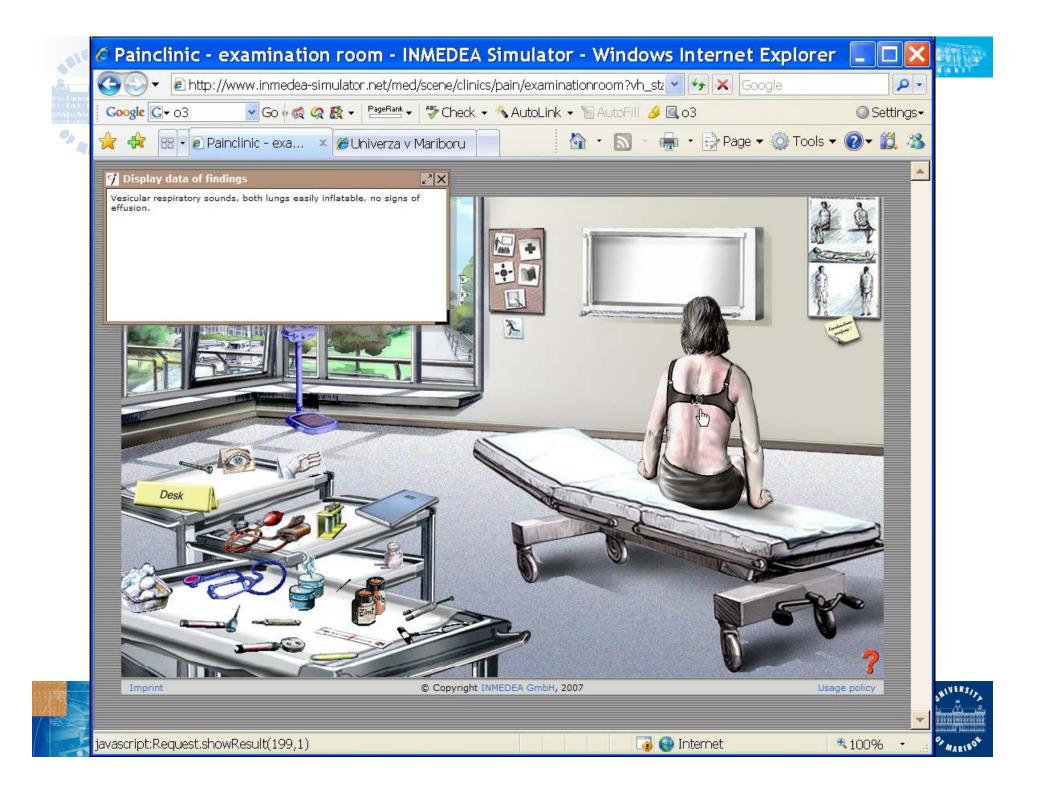


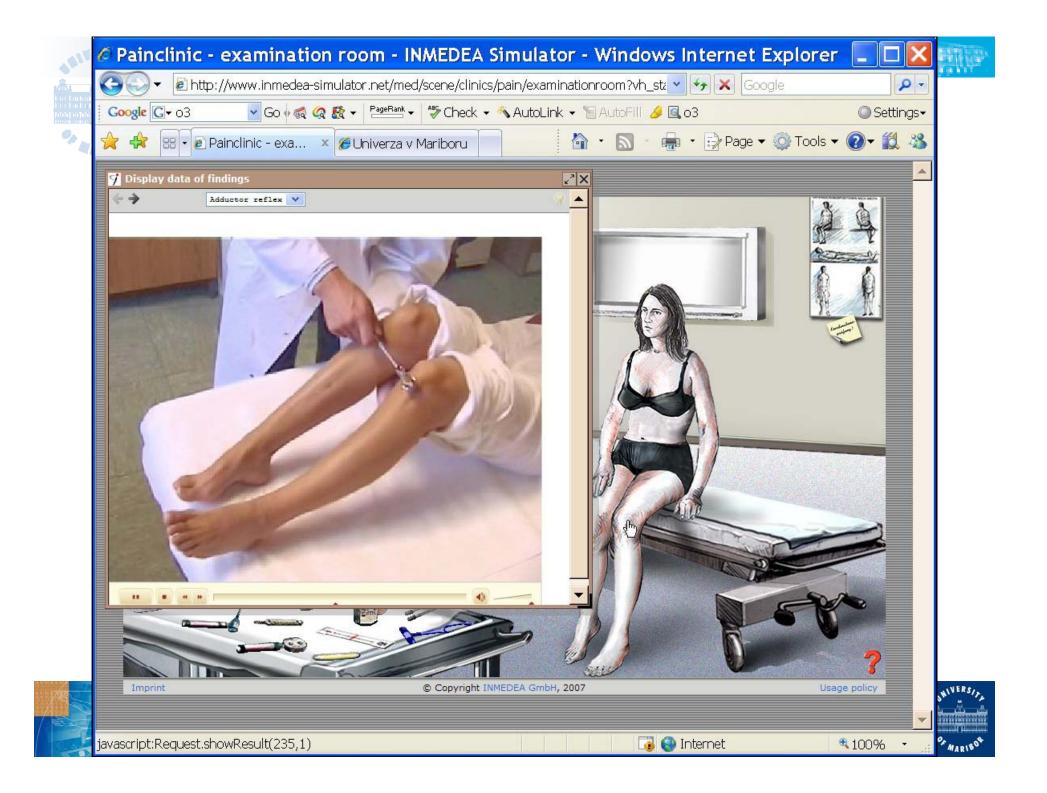


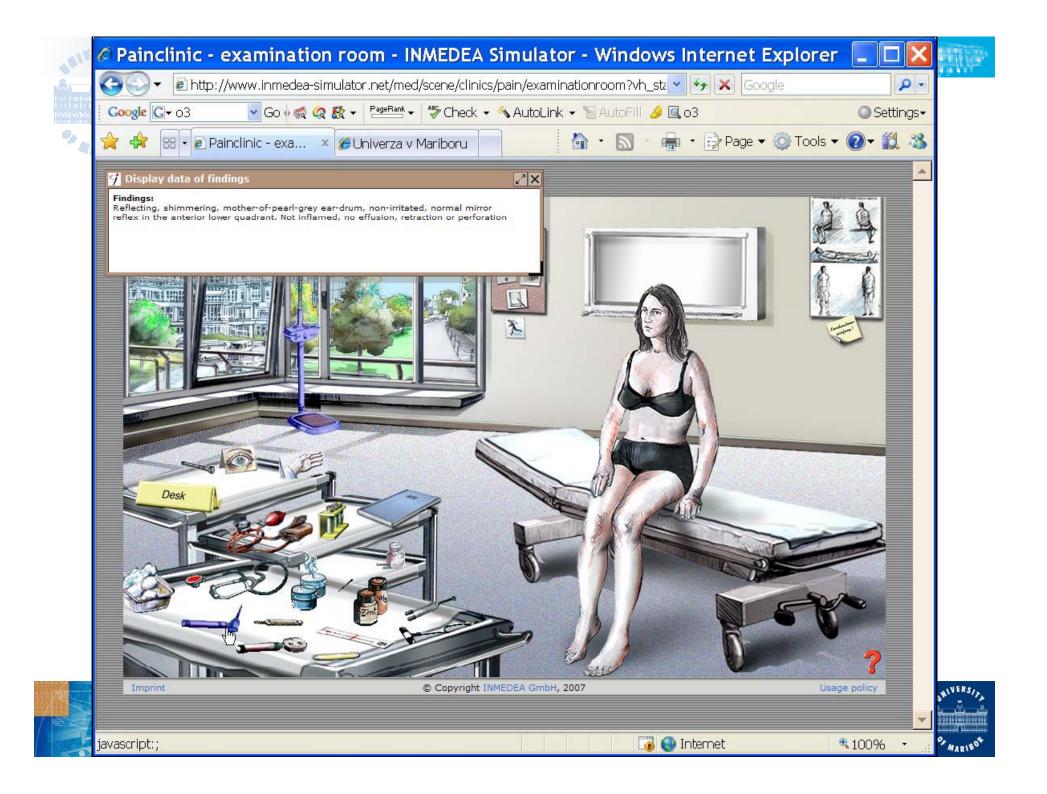


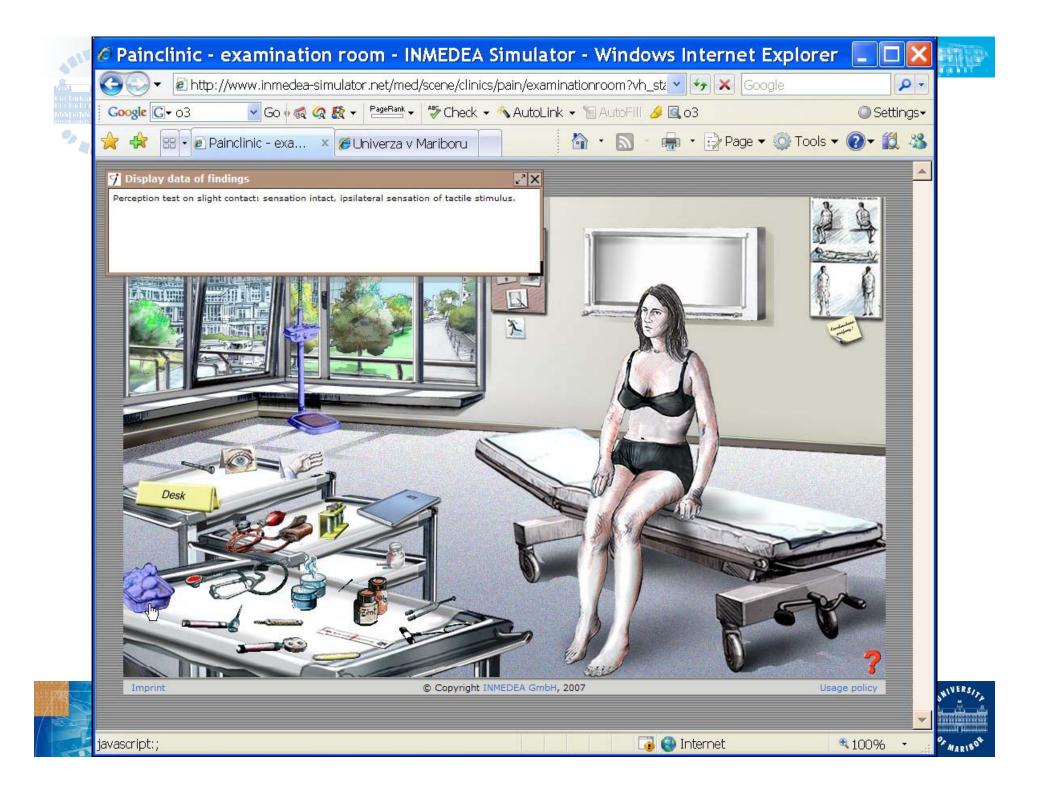


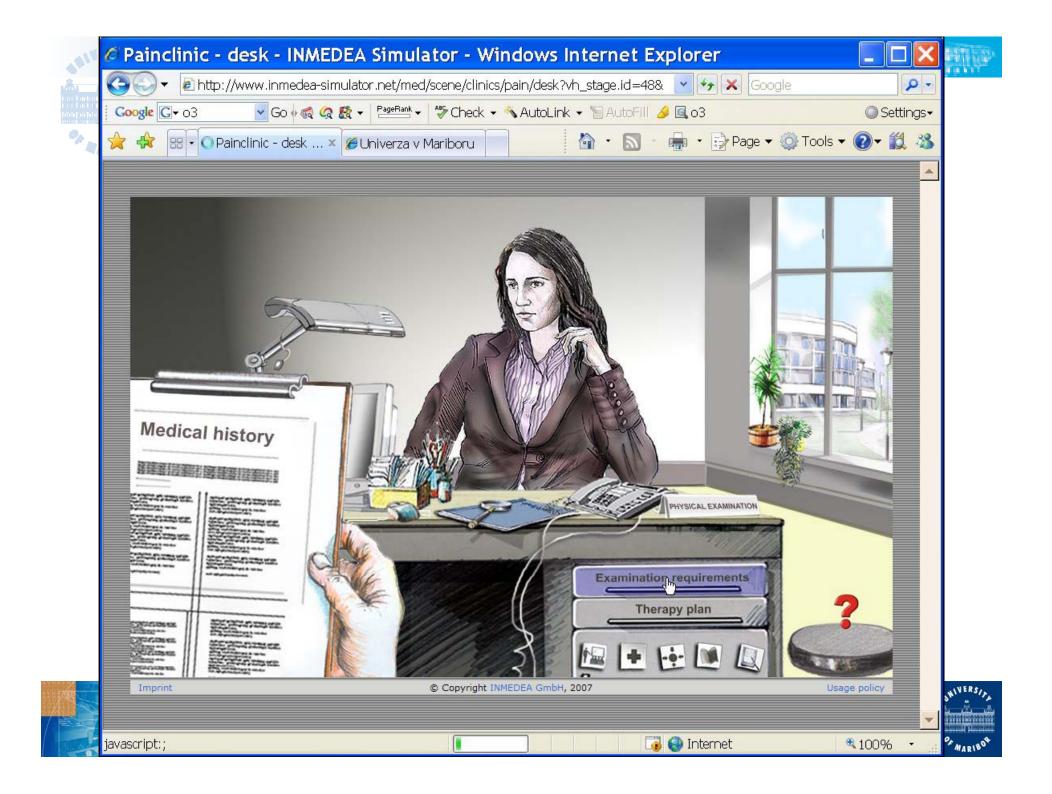


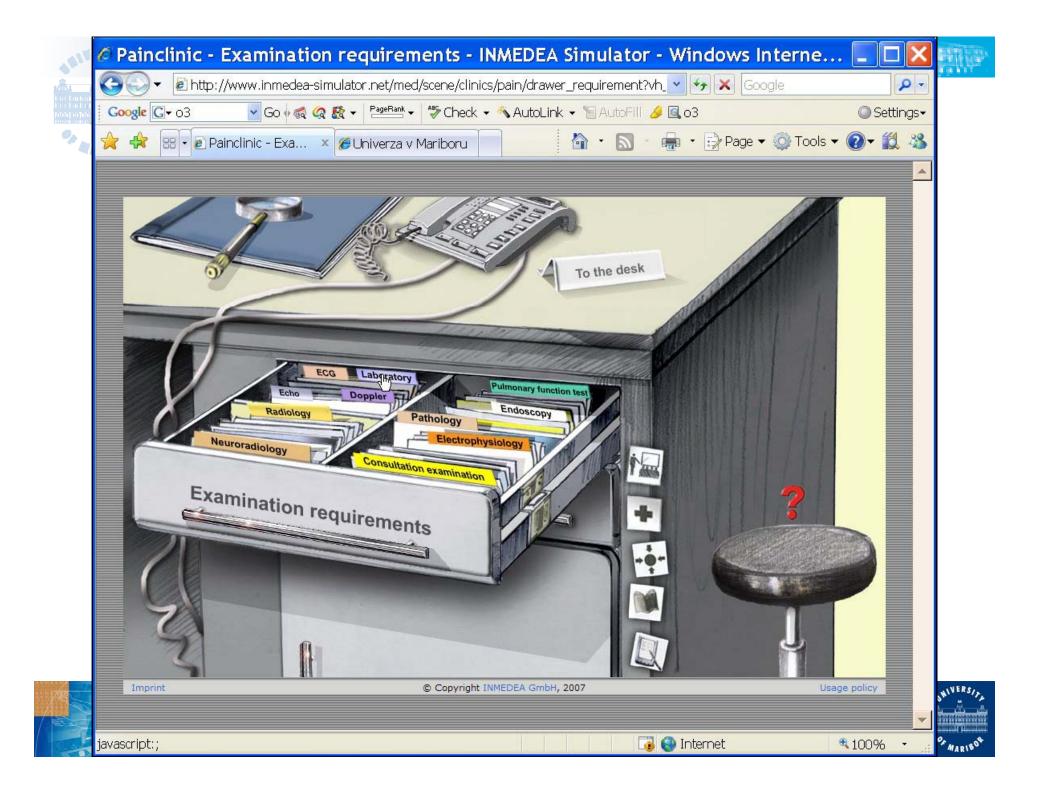


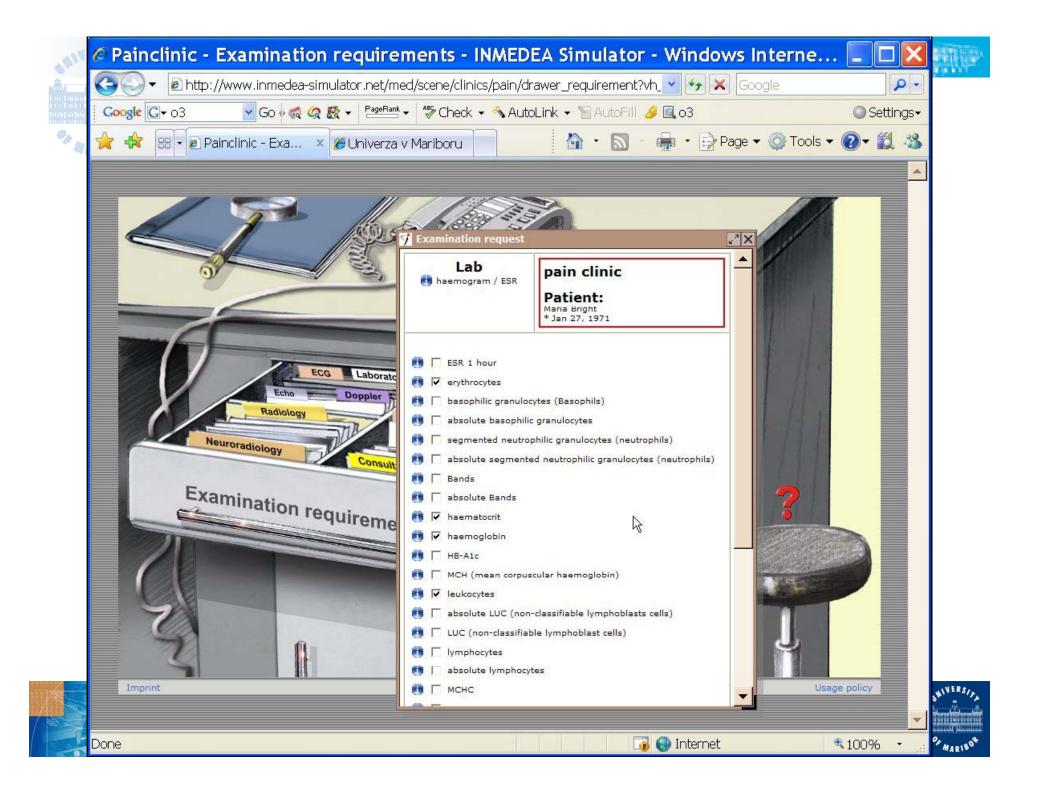


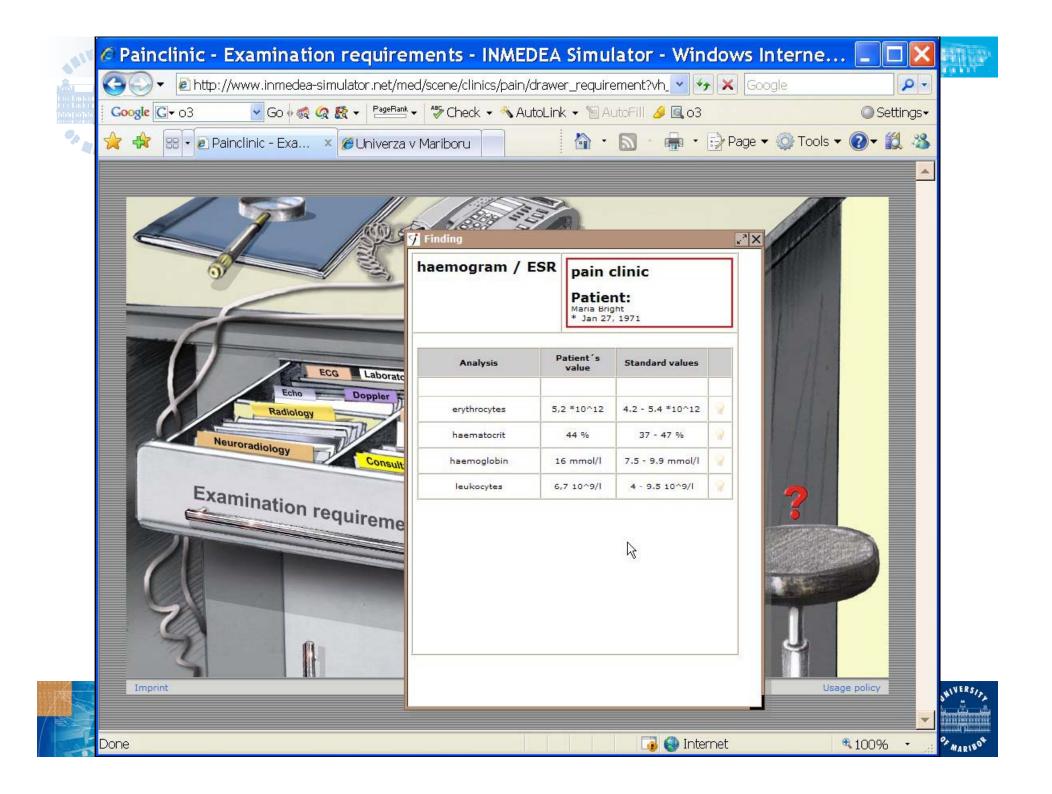


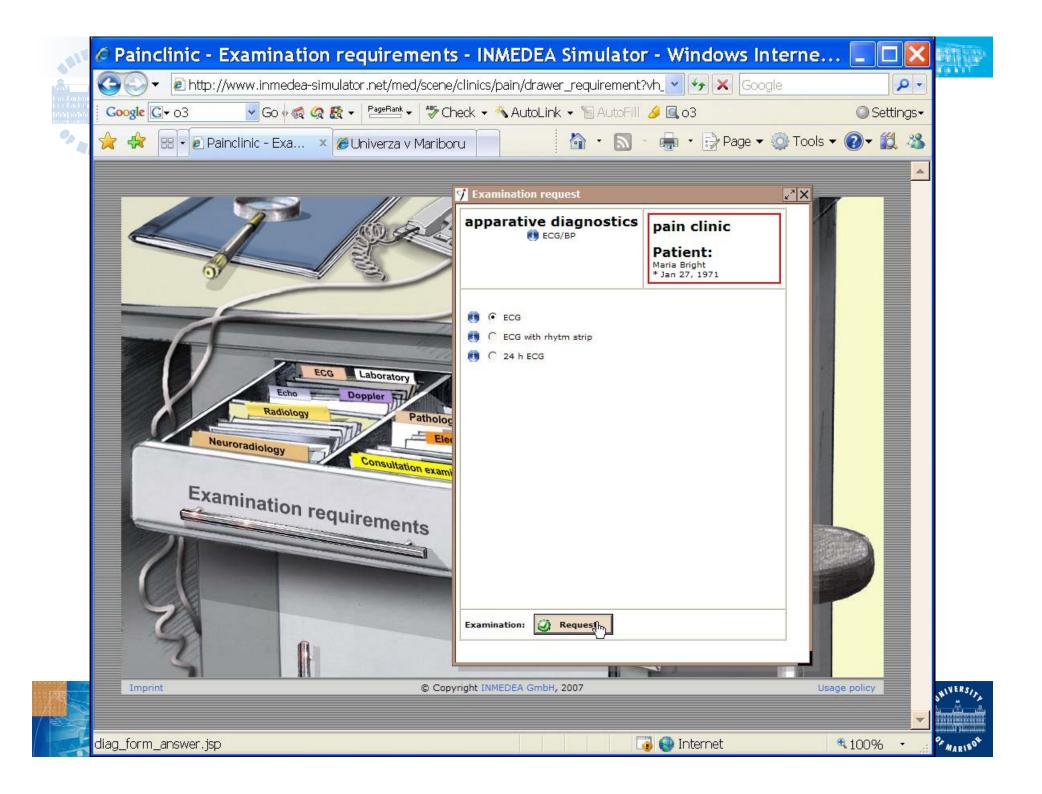


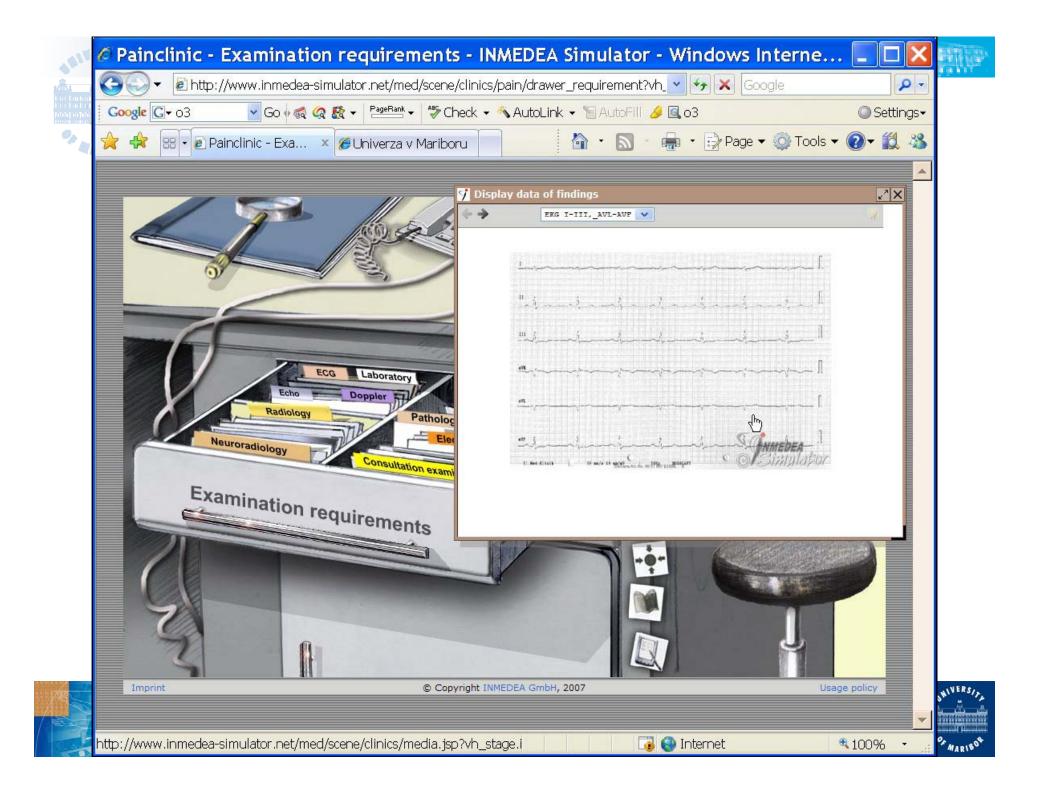


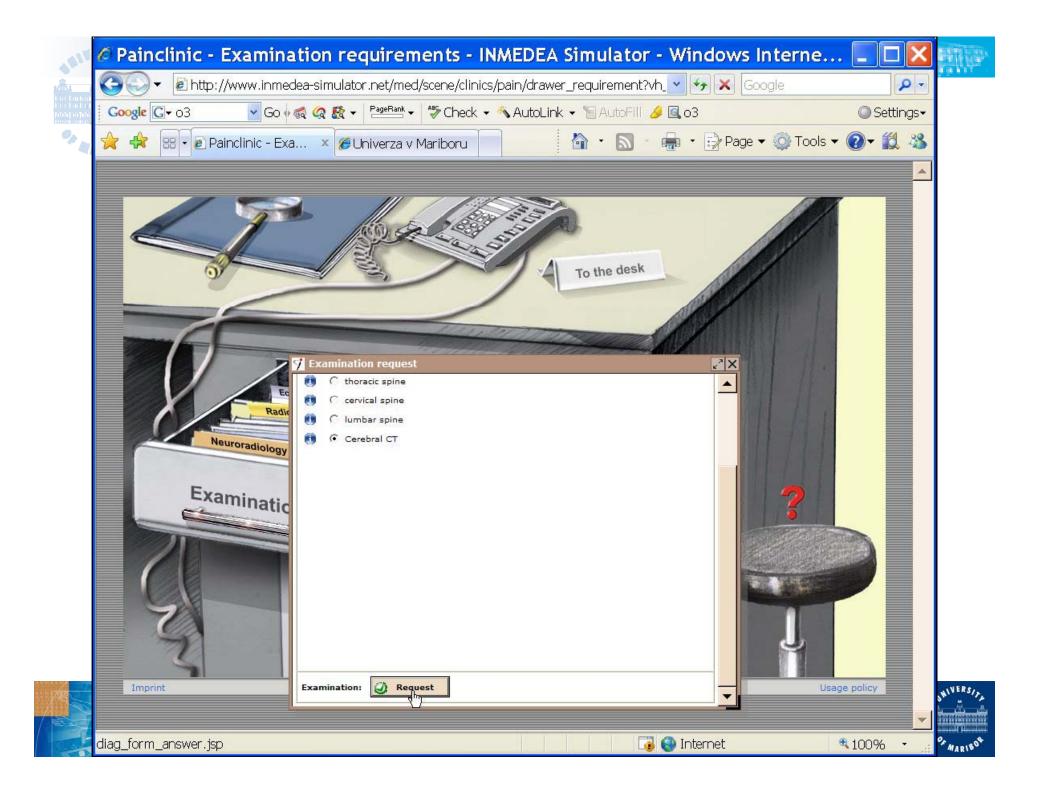


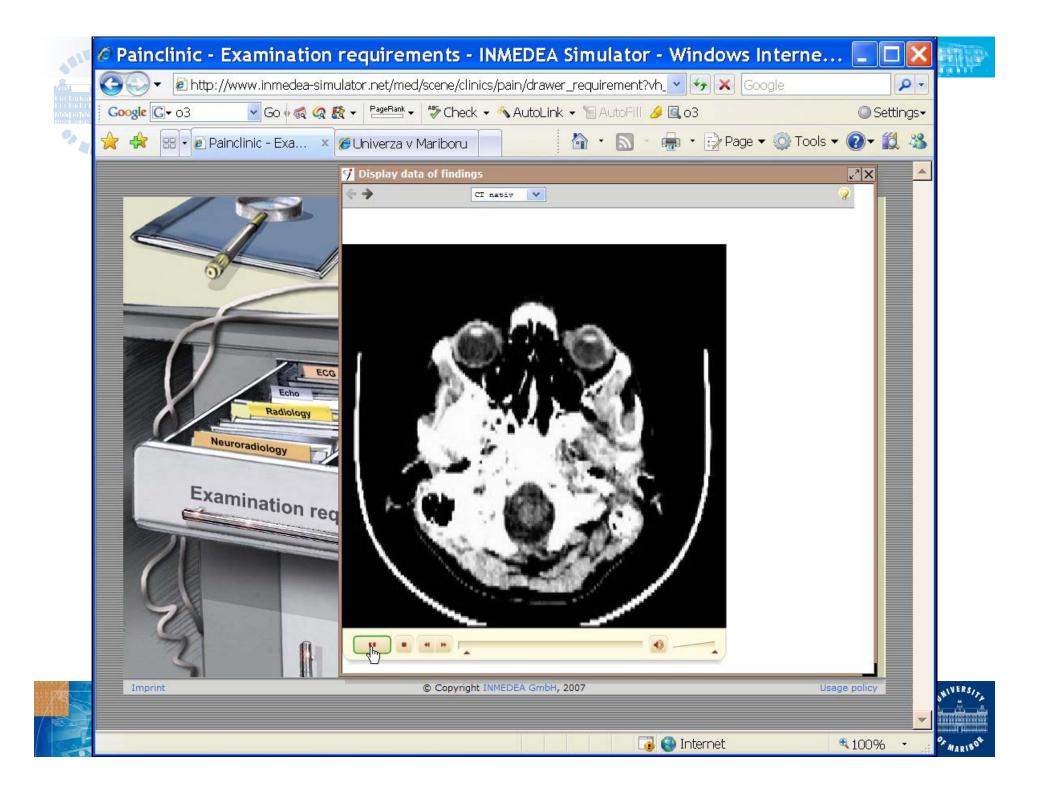


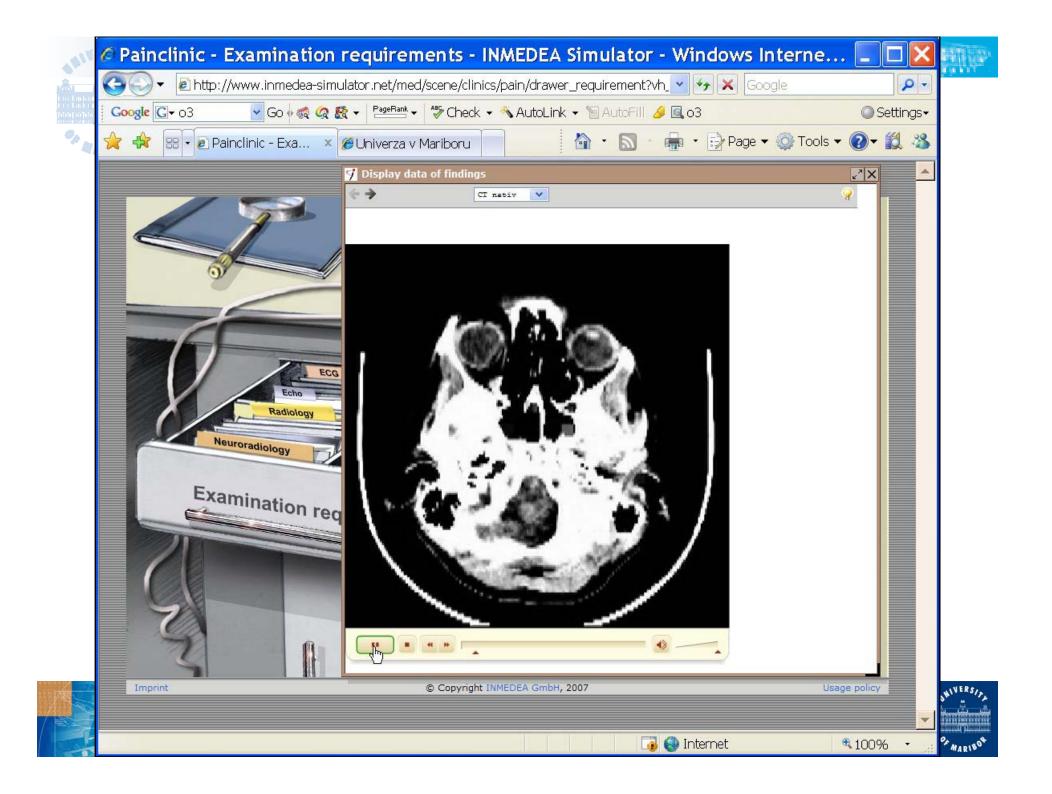


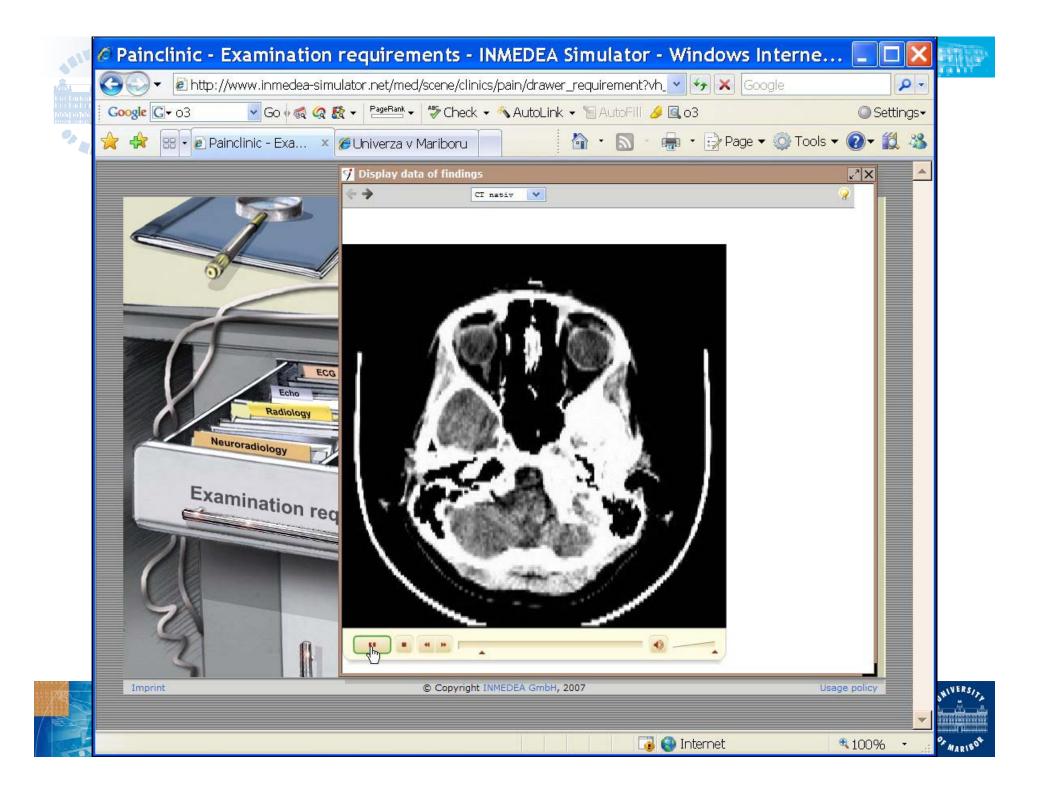


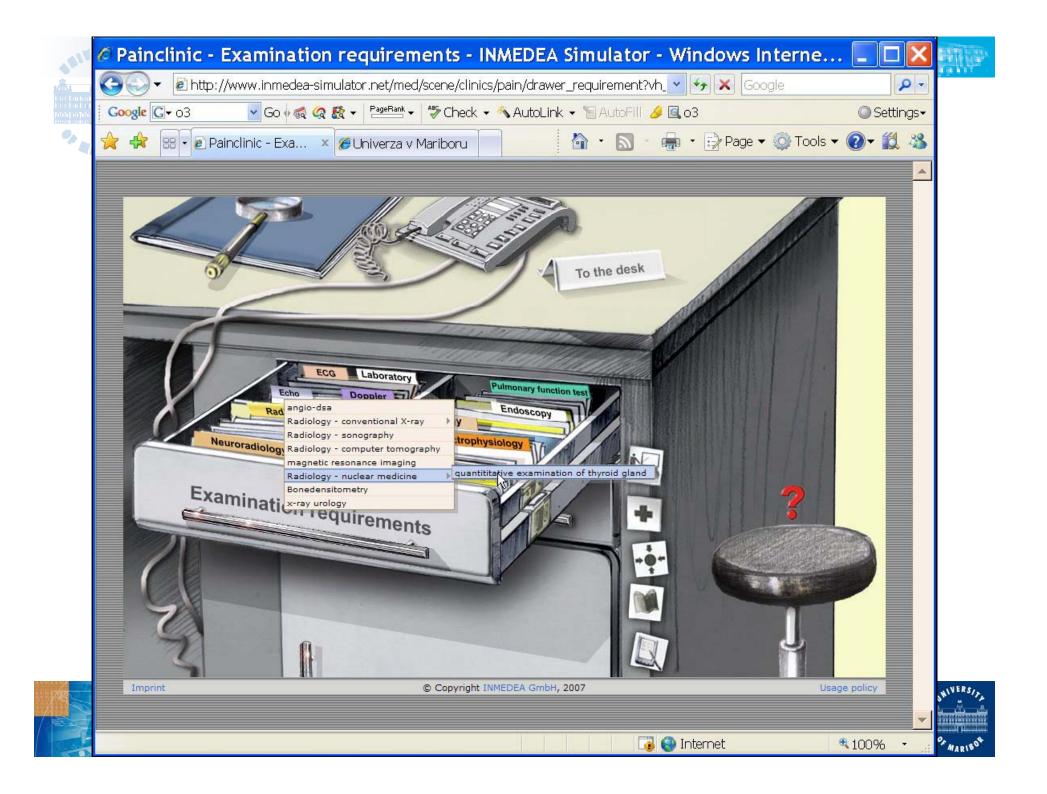


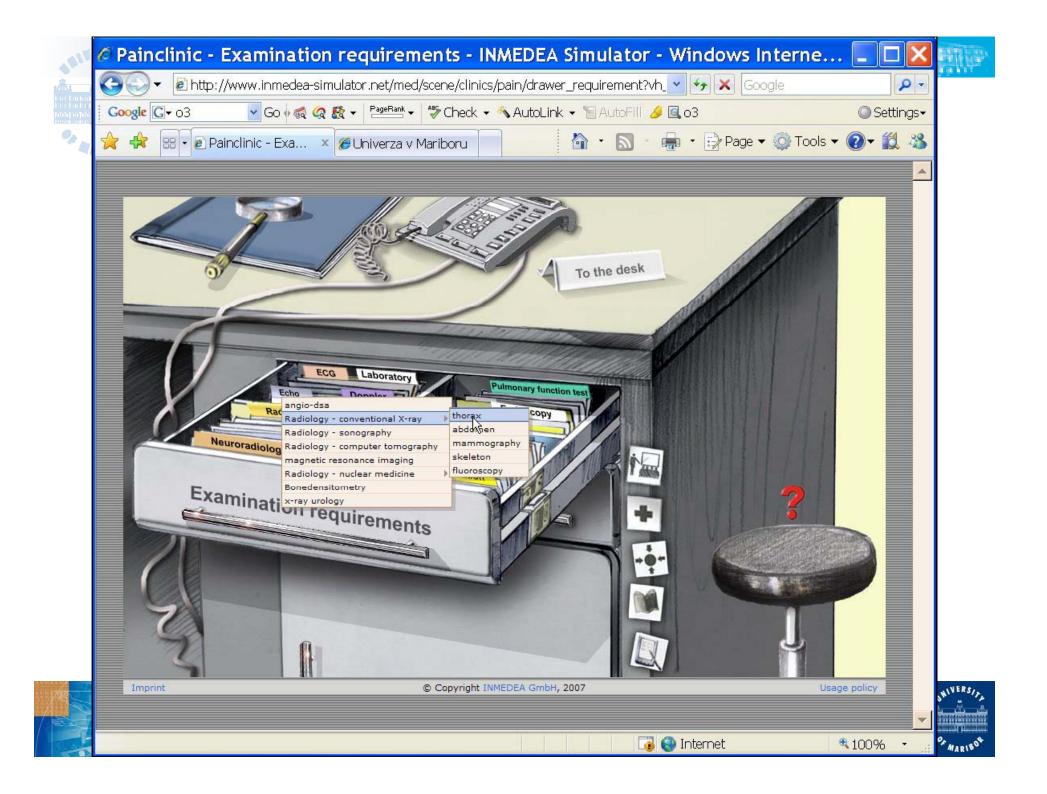


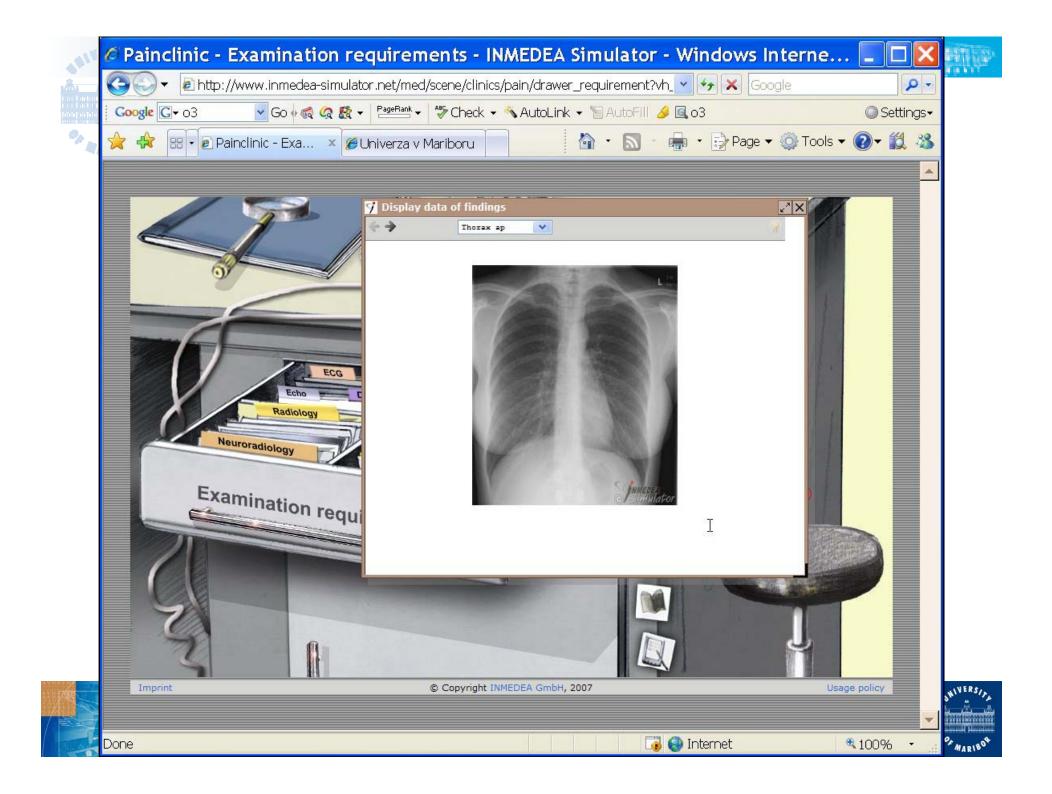


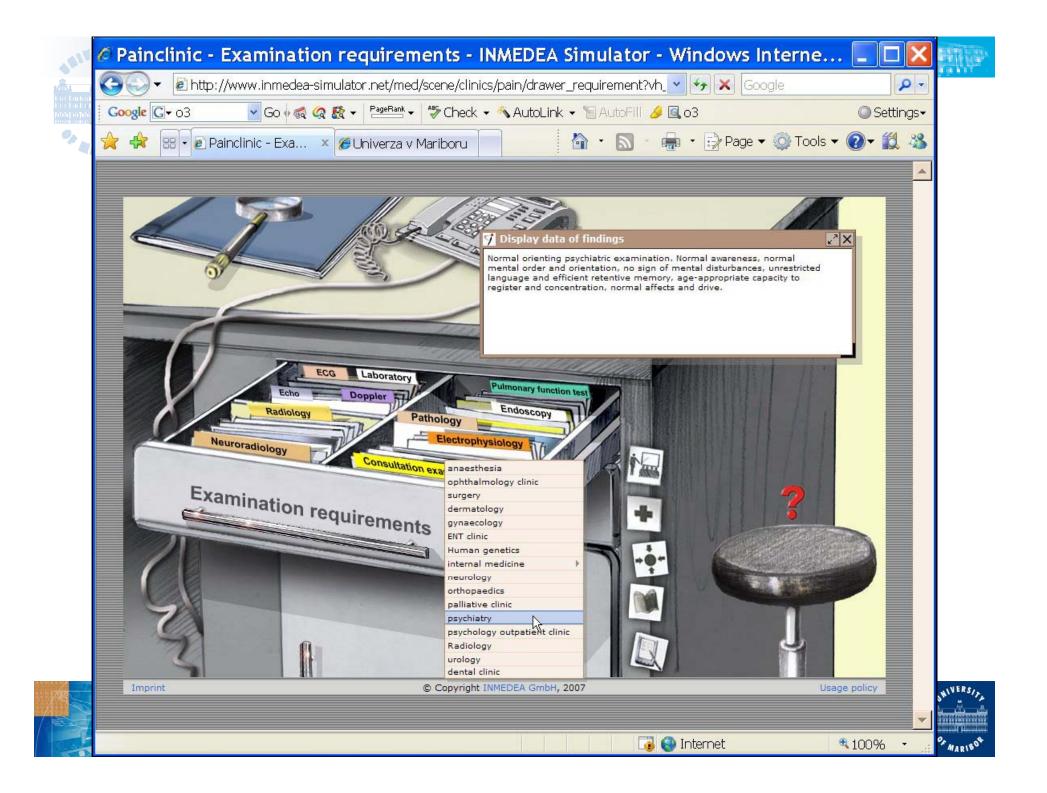


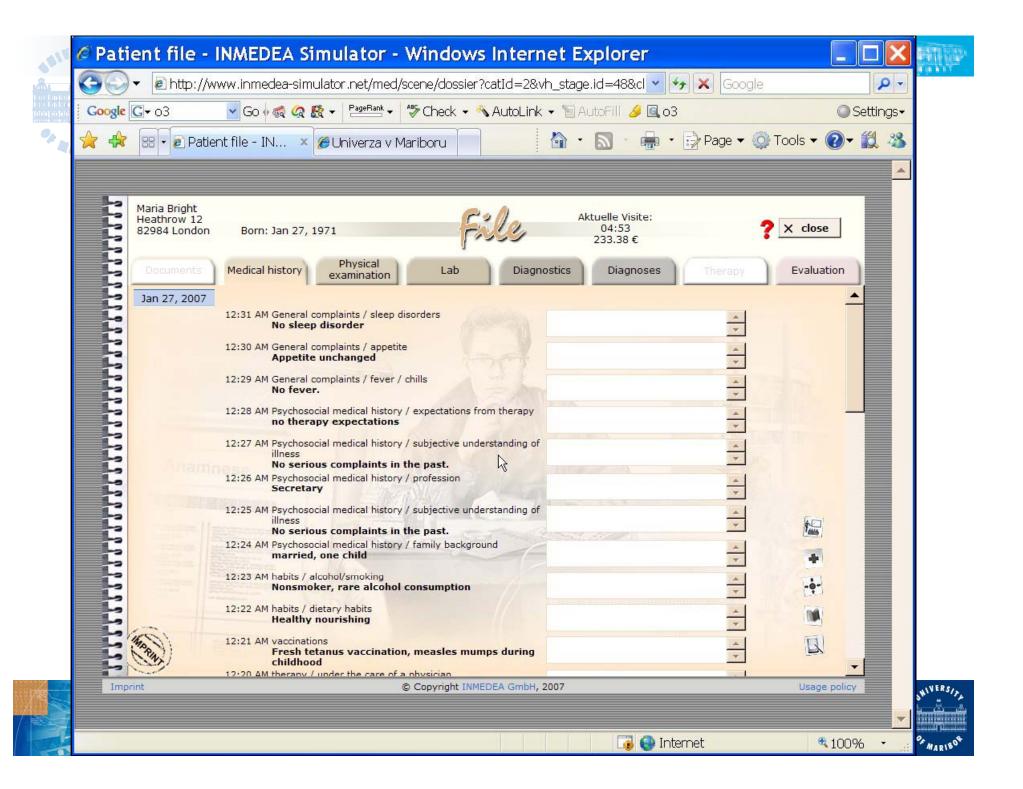


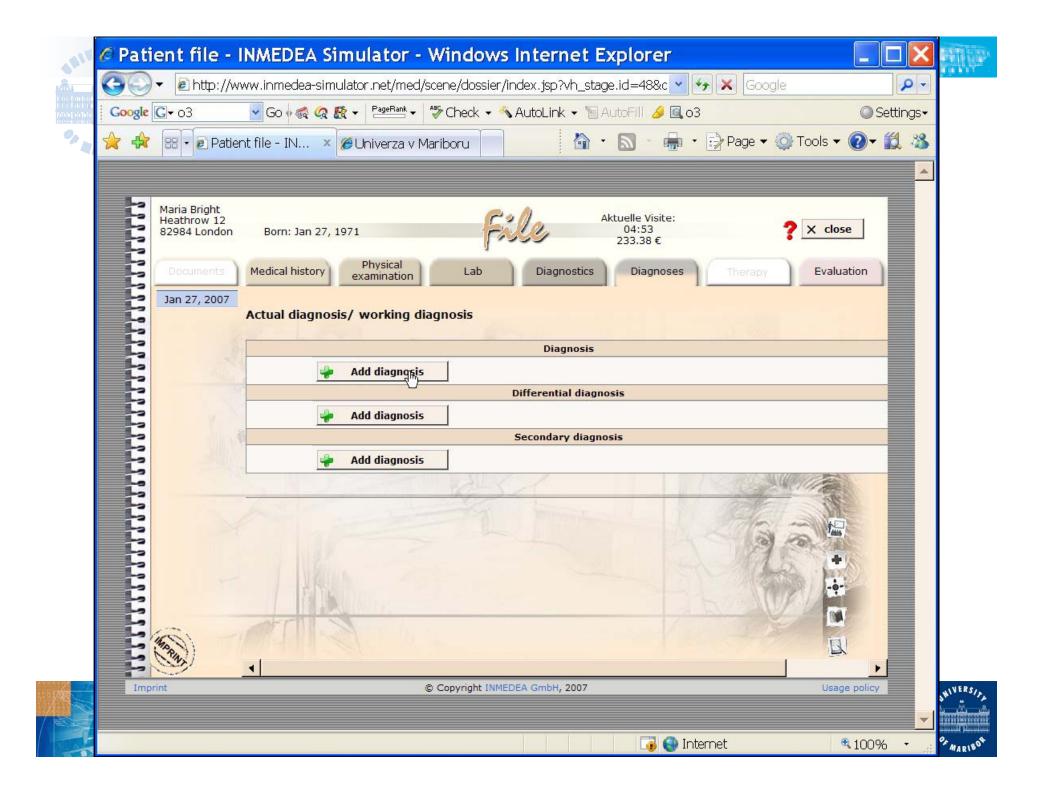












## Patient cases - INMEDEA Administrator - Windows Internet Explorer



http://www.inmedea-simulator.net/med/admin/patient.jsp?





## INMEDEA Administrator Patient cases

Home Server \* Content Usage Logout

Selection of the patient case out of the hit list.

The first patient cases matching the search/filter are listed.For a further limitation go back and redefine your search or look through your results.To choose a patient case, click on the corresponding line in the list.

## **Problems**

With the first icon this

column amona possible structural or logical errors in the patient case. Professional and content errors cannot be documented. The detailed problem descriptions you will find on the overview page once the patient has been selected. The second icon stands for quality control and documents execution of actual control steps. Details you will also find on the overview page once the patient has been selected.





Show max. 30 entries from 1

to 11 ODisplay

ID	Language	First name	Last name	Gender	Description	Problems
351	<b>XX</b>	Jacob	Binder	male	Urology: Prostatic carcinoma	$\triangle \triangle$
215	XX	Steven	Bond	male	Renal anemia	<b>2</b>
31	3	Maria	Bright	female	Neurology: Astrocytoma	$\triangle \triangle$
210		Adolpho	Chianti	male	Internal medicine: Oesophageal varices haemorrhage / hepatorenal syndrom with hepatic cirr	▲ 🛮
80	N N	Piet	Classen	male	SK Maastricht	$\triangle \triangle$
180		Henry	Copper	male	Orthopedics: Pensioner with chronic dorsalgia and degenerative changes in the lumbar spine	$\triangle \triangle$
356	N N	Dick	Holmes	male	Münster Innere Medizin: anaplastic submucosal Oesophagus-Ca	$\triangle \triangle$
354	XX	Oliver	Hughes	male	Paediatrics: Neurofibromatosis Type I	▲ 🛮
30		Katrin	Jahn	female	Neurologie: Patientin mit Krampfanfall	<b>2 2</b>
72		Adela	Martinez	female	SK Valencia Rachialgia Syndrome, s.p.(status post) implantation of an SCS (spinal cord stimulator)	<b>2 1</b>
352		Frank	Rudolph	male	Neurology: Pancoast´s tumour wih nerve lesions of brachial plexus	<b>2 1</b>





Internet