

# MEFANET after four years of progressing:

## 4-D MODEL FOR DIGITAL CONTENTS QUALITY ASSESSMENT

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INVESTMENTS IN EDUCATION DEVELOPMENT

# Outline

1. **Why MEFANET?**
2. **The common portal platform in the MEFANET project**
  - three fundamental elements
  - central gateway
3. **Introduction of the new 4-D model for digital contents quality assessment**
4. **Discussion**

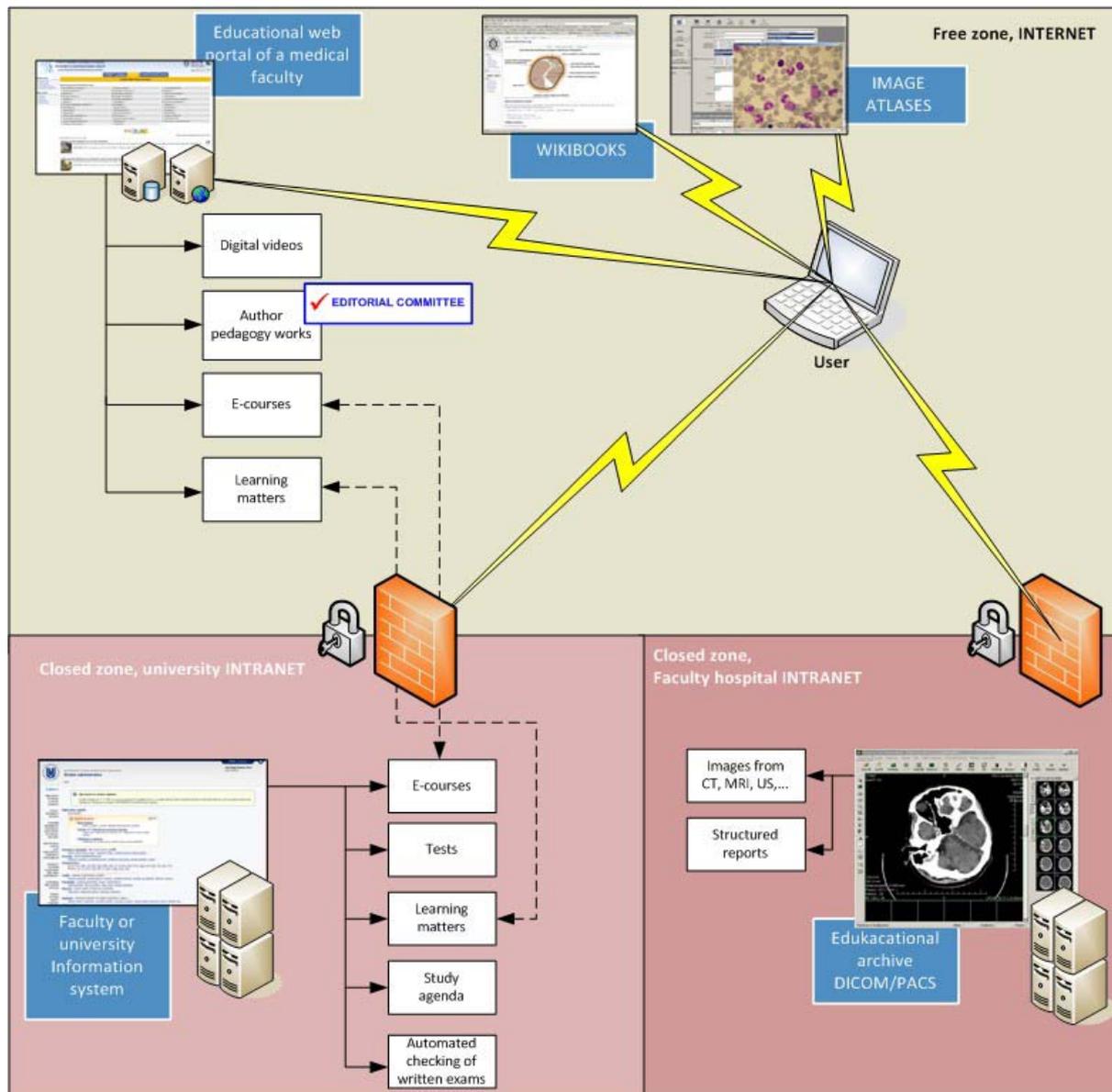
# Why MEFANET?

## REASONS & MOTIVATION

- to develop and to strengthen the cooperation among Czech and Slovak medical faculties
- to support a progress in education of medical and health care disciplines using modern ICT.
- to facilitate the cooperation among teams from different schools,
- to ensure a horizontal accessibility of electronic teaching and learning tools for both teachers and students.
- **to share educational resources**
- Czechs and Slovaks are traditional academic partners with similar languages.



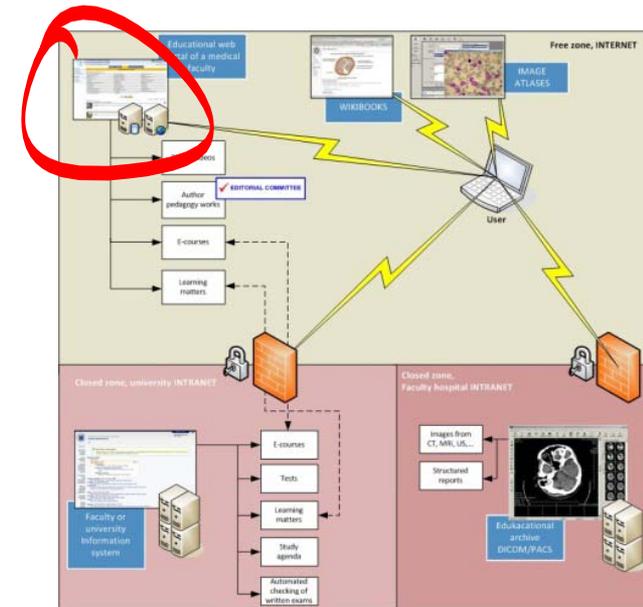
# Educational web portal at a medical faculty



# Educational web portal at a medical faculty

## PURPOSE & OBJECTIVES

- to help academic staff members with publishing their educational works
- to help authors of multimedia teaching and learning tools to communicate with users of these tools,
- to help people involved in the lifelong learning of physicians and health care professionals,
- to help students of medicine and health care disciplines with navigating through various tools for electronic support of their education.



# Educational web portal at a medical faculty

**Multimedia support in the education  
of clinical and health care disciplines**  
Portal of Masaryk University's Faculty of Medicine





Educational works
Multimedia
Elearning
For authors

 Czech version

 Search

Educational websites

Digital video

Presentations

Casustics in images

Login

Submit article



**Contents classified by medical disciplines**

<p>Anaesthesiology and Intensive Care Medicine (0)</p> <p><a href="#">Anatomy</a> (3)</p> <p><a href="#">Biology</a> (1)</p> <p>Biophysics (0)</p> <p><a href="#">Cardiology, Angiology</a> (1)</p> <p>Dentistry (0)</p> <p><a href="#">Dermatology</a> (1)</p> <p>Diabetology, Dietetics (0)</p>	<p>General Practice Medicine (0)</p> <p><a href="#">Genetics</a> (1)</p> <p>Geriatrics (0)</p> <p>Haematology (0)</p> <p>Health Care and Nursing (0)</p> <p>Histology, Embryology (0)</p> <p>Immunology, Allergology (0)</p> <p>Infectology (0)</p>	<p><a href="#">Medical Informatics</a> (3)</p> <p>Microbiology (0)</p> <p>Nephrology (0)</p> <p>Neurology (0)</p> <p>Neurosurgery (0)</p> <p>Nuclear Medicine (0)</p> <p><a href="#">Obstetrics, Gynaecology</a> (2)</p> <p>Occupational Medicine and Toxicology (0)</p>	<p><a href="#">Paediatrics, Neonatology</a> (3)</p> <p><a href="#">Pathology and Forensic Medicine</a> (7)</p> <p><a href="#">Pharmacology</a> (1)</p> <p><a href="#">Physiology and Pathophysiology</a> (3)</p> <p><a href="#">Psychiatry, Psychology, Sexology</a> (1)</p> <p>Public Health Care, Social Medicine (0)</p> <p>Radiology and Imaging (0)</p> <p>Rehabilitation, Physiotherapy, Occupational</p>
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- ~~Central learning management system LMS~~
- E-publishing system



The insertion of a tension-free vaginal tape (TVT) under the urethra has become the golden standard in the treatment of stress urinary incontinence in women.

author: [MUDr. Atanas-Ivan Belkov](#), MUDr. Martin Huser, Jaroslav Winkler | discipline: [Obstetrics, Gynaecology, Urology](#) | published on: 22.1.2010 | last modified on: 9.4.2010



with informations about the embryology, clinical anatomy and physiology, investigations practice by the ORL diseases for study of otorhinolaryngology. Text is divided in chapters for the preparing for examination in otorhinolaryngology.

author: [prof. MUDr. Ivo Šlapák, CSc.](#), MUDr. Dalibor Janeček, Ph.D., MUDr. Lukáš Lavička a kol. | discipline: [Otorhinolaryngology, Paediatrics, Neonatology](#) | published on: 15.4.2009 | last modified on: 15.4.2009

**Isolated heart perfused according to Legendorff**



The tutorial film "Isolated heart perfused according to Legendorff"

author: [Kateřina Fialová](#), MUDr. Marie Nováková, Ph.D | discipline: [Physiology and Pathophysiology, Cardiology, Angiology](#) | published on: 4.11.2009 | last modified on:

**Practicals in Pharmacology**



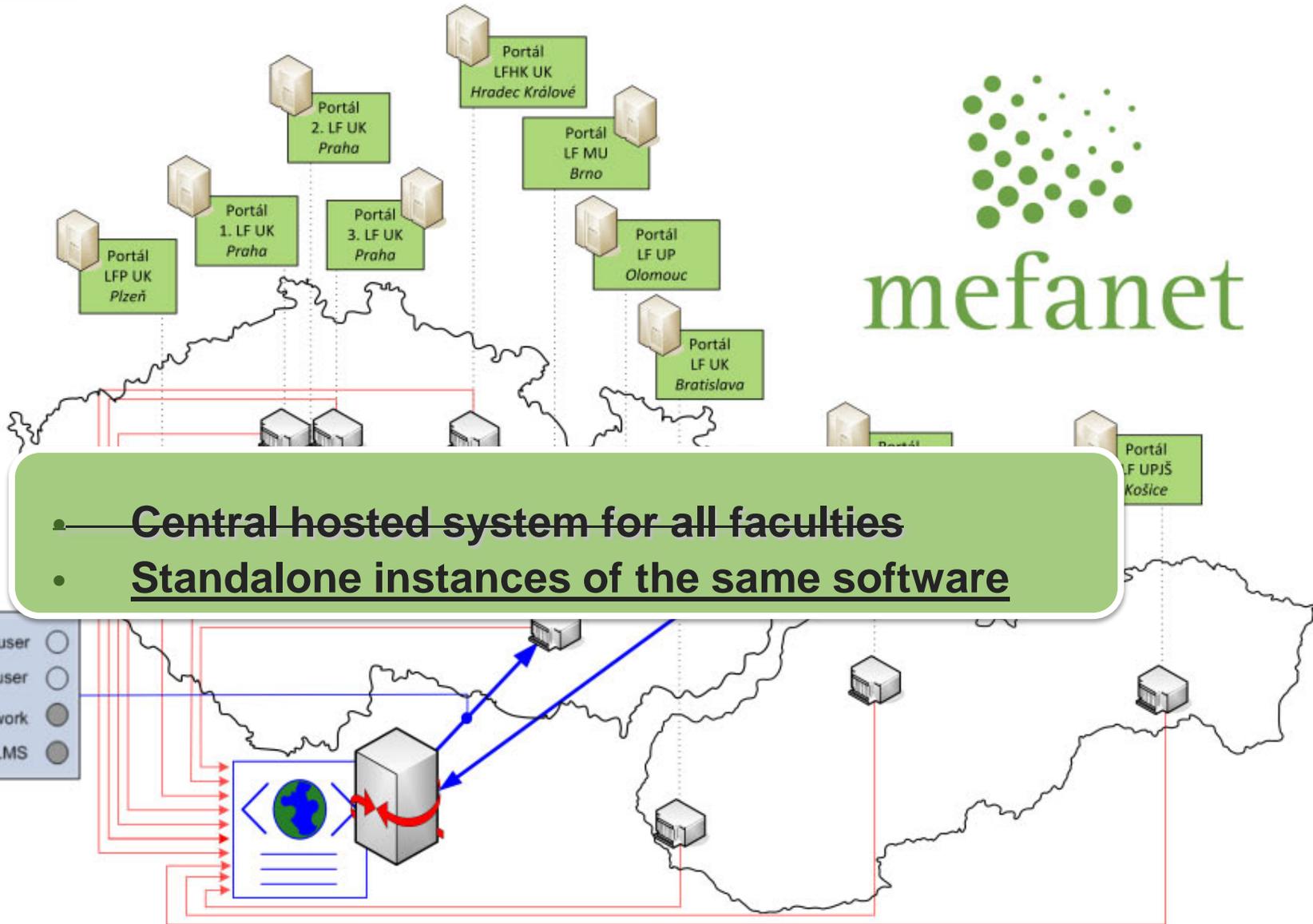
The text provides an introduction to general principles and rules for prescription of drugs in various pharmaceutical dosage forms with examples of individually prepared preparation prescriptions in dermatology, otorhinolaryngology, surgery, ophthalmology and for treatments of the CNS, respiratory and digestive systems disorders. There is also an introduction to phytopharmacotherapy and a chapter dealing with information on principles and ethics in experimental

MEFANET 2010

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# E-publishing system



- **Central hosted system for all faculties**
- **Standalone instances of the same software**

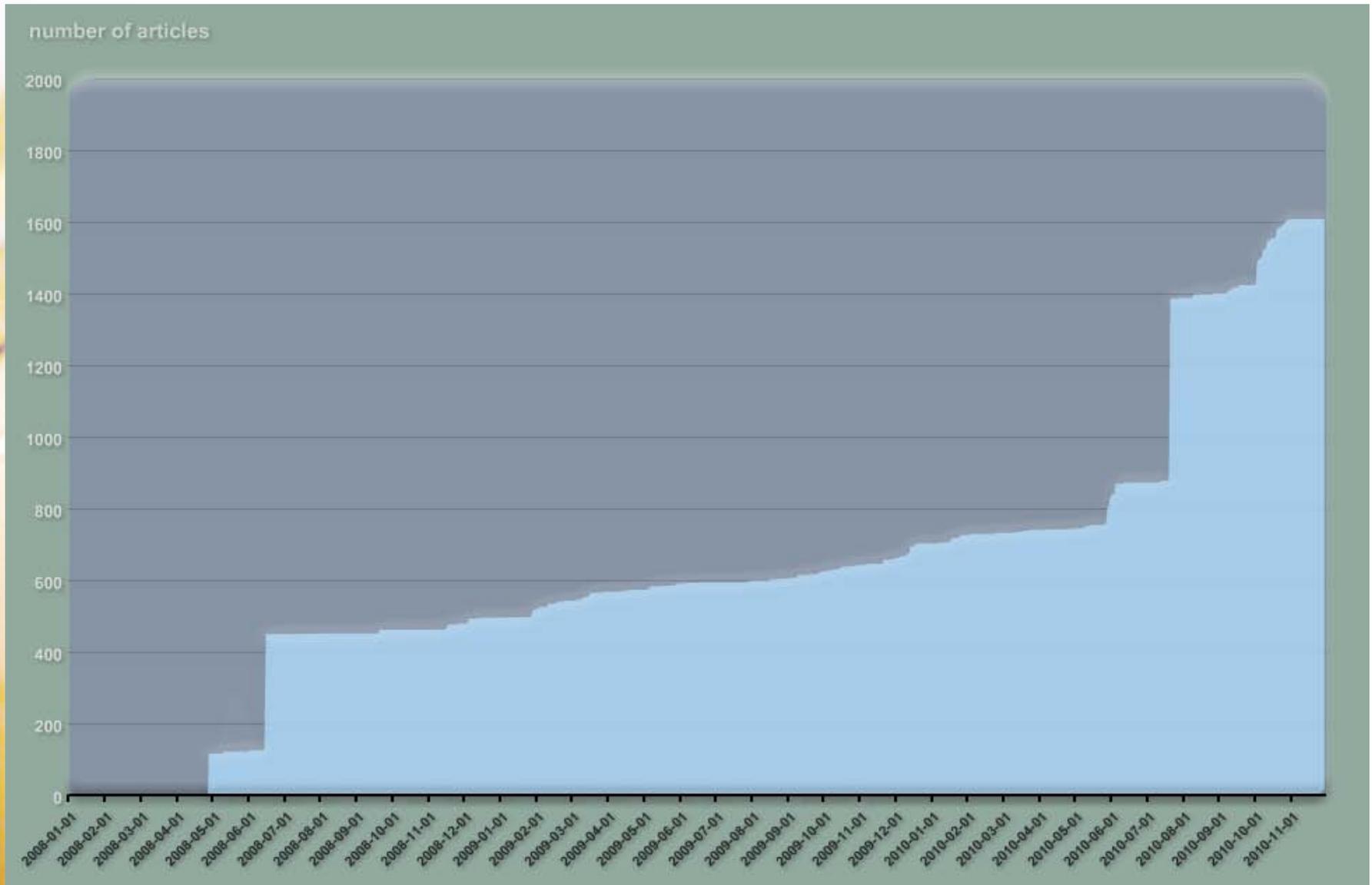
# MEdical FAculties NETwork



[portal.mefanet.cz](http://portal.mefanet.cz)

MEDICAL STUDY WIZARD

# Shared contributions on the central gateway



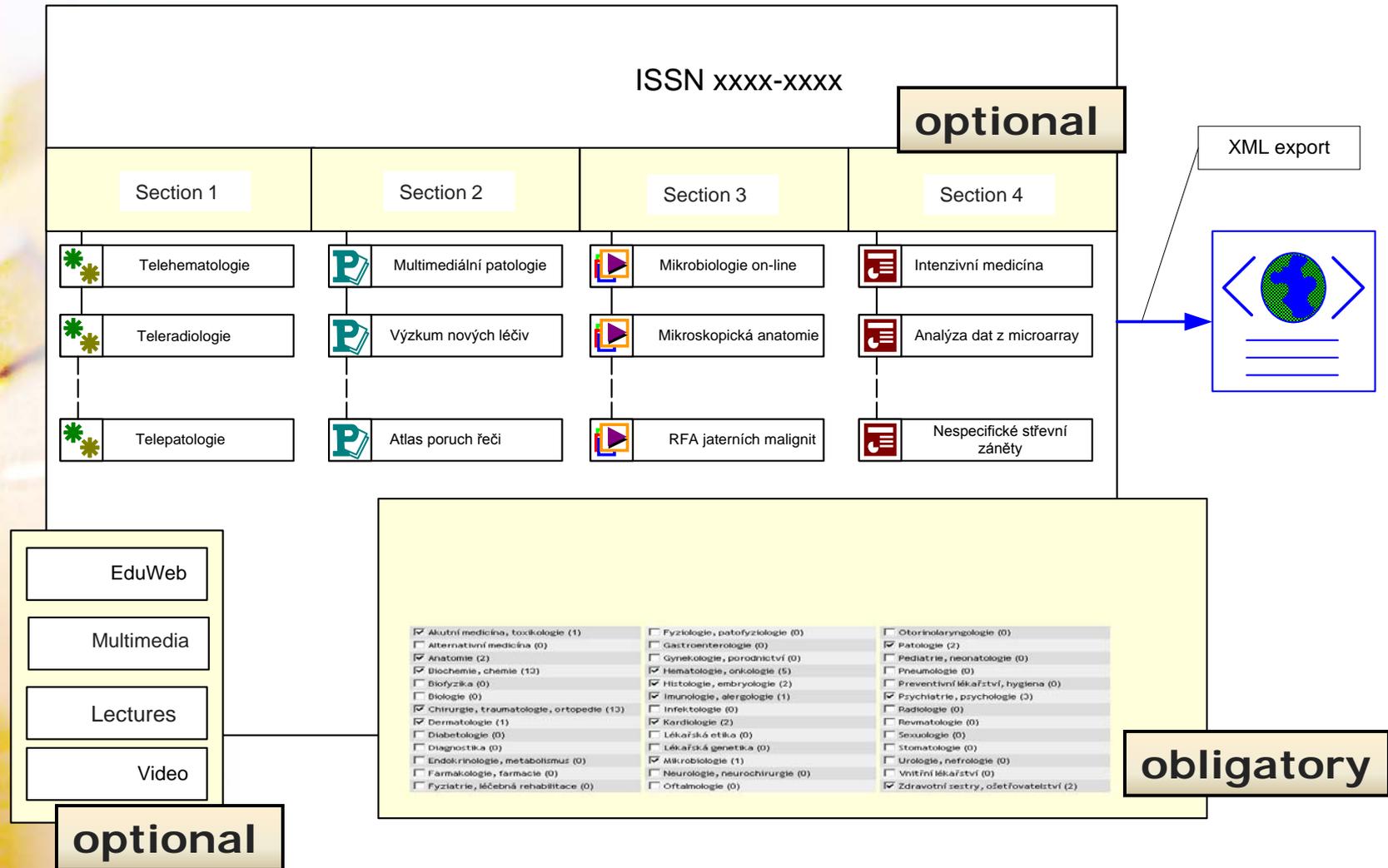
# Fundamental elements of the web portal platform

**1. Medical disciplines linker**

**2. Authentication / authorization framework**

**3. Digital contents quality assessment**

# The medical disciplines linker



# The medical disciplines linker

<input type="checkbox"/> Anaesthesiology and Intensive Care Medicine (0)	<input type="checkbox"/> General Practice Medicine (0)	<input checked="" type="checkbox"/> <u>Medical Informatics</u> (7)	<input checked="" type="checkbox"/> <u>Paediatrics, Neonatology</u> (27)
<input checked="" type="checkbox"/> <u>Anatomy</u> (24)	<input checked="" type="checkbox"/> <u>Genetics</u> (3)	<input checked="" type="checkbox"/> <u>Microbiology</u> (10)	<input checked="" type="checkbox"/> <u>Pathology and Forensic Medicine</u> (8)
<input checked="" type="checkbox"/> <u>Biology</u> (1)	<input type="checkbox"/> Geriatrics (0)	<input type="checkbox"/> Nephrology (0)	<input checked="" type="checkbox"/> <u>Pharmacology</u> (3)
<input checked="" type="checkbox"/> <u>Biophysics</u> (19)	<input checked="" type="checkbox"/> <u>Haematology</u> (7)	<input checked="" type="checkbox"/> <u>Neurology</u> (7)	<input checked="" type="checkbox"/> <u>Physiology and Pathophysiology</u> (63)
<input checked="" type="checkbox"/> <u>Cardiology, Angiology</u> (5)	<input type="checkbox"/> Health Care and Nursing (0)	<input type="checkbox"/> Neurosurgery (0)	<input checked="" type="checkbox"/> <u>Psychiatry, Psychology, Sexology</u> (4)
<input checked="" type="checkbox"/> <u>Dentistry</u> (19)	<input checked="" type="checkbox"/> <u>Histology, Embryology</u> (32)	<input checked="" type="checkbox"/> <u>Nuclear Medicine</u> (1)	<input checked="" type="checkbox"/> <u>Public Health Care, Social Medicine</u> (10)
<input checked="" type="checkbox"/> <u>Dermatology</u> (5)	<input checked="" type="checkbox"/> <u>Immunology, Allergology</u> (3)	<input checked="" type="checkbox"/> <u>Obstetrics, Gynaecology</u> (3)	<input checked="" type="checkbox"/> <u>Radiology and Imaging</u> (12)
<input type="checkbox"/> Diabetology, Dietetics (0)	<input checked="" type="checkbox"/> <u>Infectology</u> (2)	<input type="checkbox"/> Occupational Medicine and Toxicology (0)	<input checked="" type="checkbox"/> <u>Rehabilitation, Physiotherapy, Ergotherapy</u> (6)
<input checked="" type="checkbox"/> <u>Emergency Medicine</u> (2)	<input type="checkbox"/> Internal Medicine (0)	<input checked="" type="checkbox"/> <u>Oncology, Radiation Therapy</u> (15)	<input type="checkbox"/> Respiratory Medicine (0)
<input type="checkbox"/> Endocrinology, Metabolism (0)	<input type="checkbox"/> Laboratory Diagnostics (0)	<input checked="" type="checkbox"/> <u>Ophthalmology and Optometry</u> (5)	<input type="checkbox"/> Rheumatology (0)
<input checked="" type="checkbox"/> <u>Epidemiology, Preventive Medicine, Hygiene</u> (8)	<input checked="" type="checkbox"/> <u>Medical Ethics and Law</u> (1)	<input type="checkbox"/> Other (0)	<input checked="" type="checkbox"/> <u>Surgery, Traumatology and Orthopaedics</u> (22)
<input checked="" type="checkbox"/> <u>Gastroenterology and Hepatology</u> (9)	<input checked="" type="checkbox"/> <u>Medical Chemistry and Biochemistry</u> (113)	<input checked="" type="checkbox"/> <u>Otorhinolaryngology</u> (1)	<input checked="" type="checkbox"/> <u>Urology</u> (4)

The only obligatory structure common to all portal instances.

# Fundamental elements of the web portal platform

**1. Medical disciplines linker**

**2. Authentication / authorization framework**

**3. Digital contents quality assessment**

# Authentication / authorization framework

## User roles

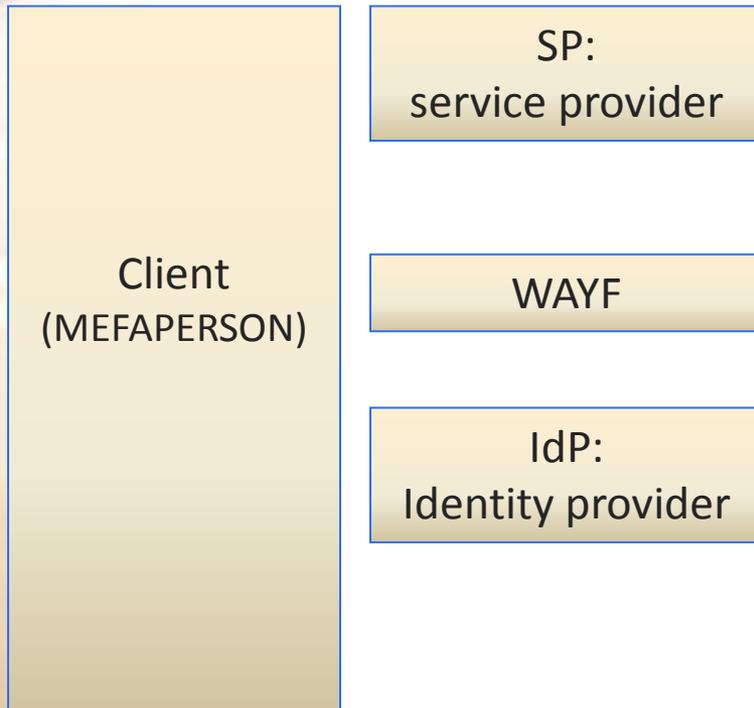


Authors of the educational contents (published attachments) can choose from the following user groups, in order to permit/deny access to their materials:

- non-registered anonymous user,
- registered anonymous user, who accepts the terms of use
- **user of MEFANET network, i.e. student or teacher from any Czech or Slovak medical faculty,**
- user of local university
- user of local medical faculty
- user to whom attachments are made available only on the author's explicit consent.

# Authentication / authorization framework

Czech academic identity federation



Federative single-sign-on authentication framework which allows to share web resources among institutions.

# Fundamental elements of the web portal platform

**1. Medical disciplines linker**

**2. Authentication / authorization framework**

**3. Digital contents quality assessment**

# Digital content quality evaluation before and today

Two different approaches to quality assessment until 11/2010:

## 1) OPPONENCY ACTION



## 2) GUARANTEE SIGNATURES



- Accept
- Reject
- Undefined state

# 4-D model for digital contents quality assessment

One common general solution for quality assessment from Nov 2010 (ver. 1.8).

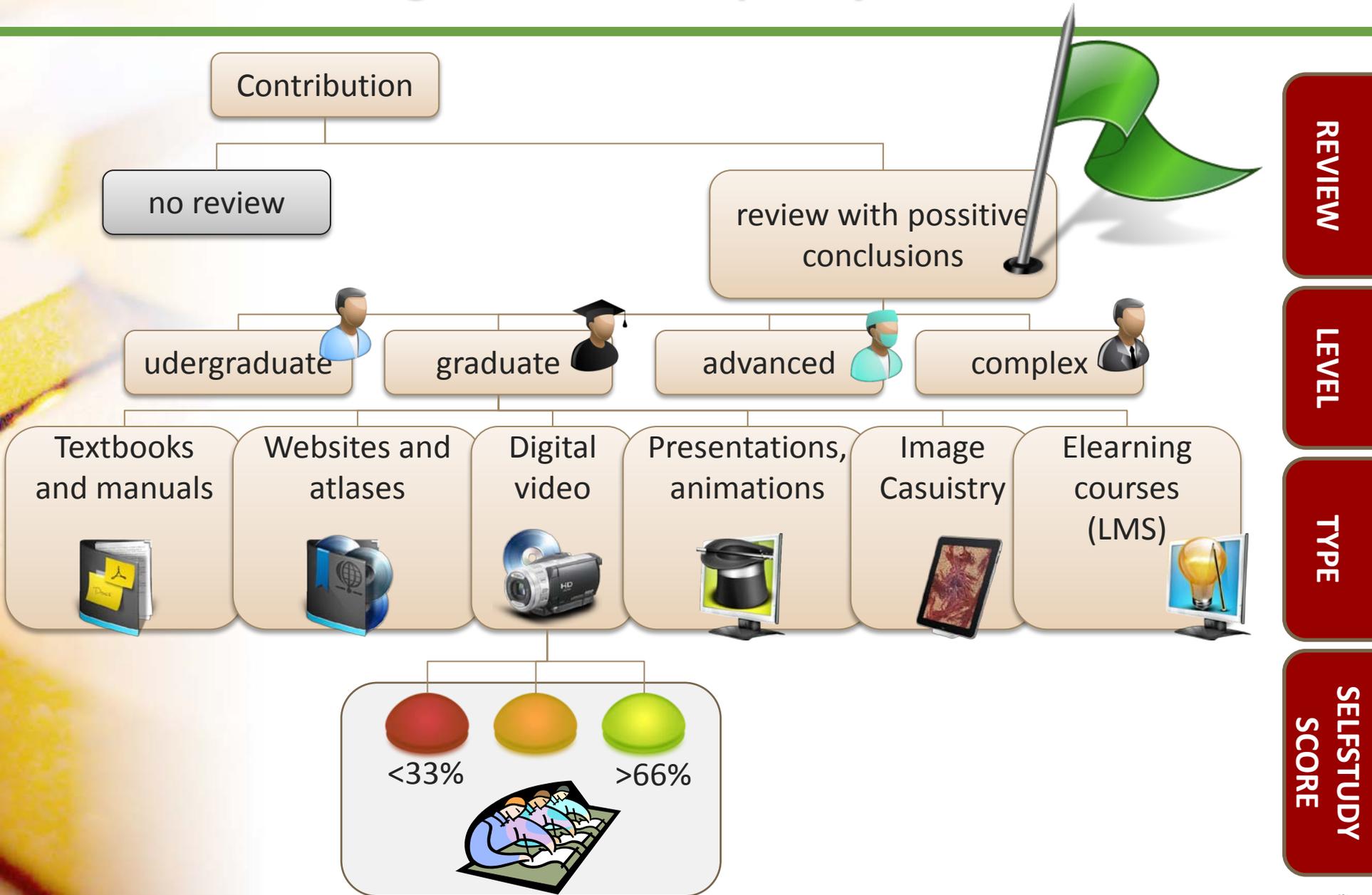
REVIEW

LEVEL

TYPE

SELFSTUDY  
SCORE

# 4-D model for digital contents quality assessment



# Guarantees, reviewers, authors

## One guarantee



## Many guarantees



# Guarantees, reviewers, authors

## One guarantee



## Many guarantees



Invite reviewers

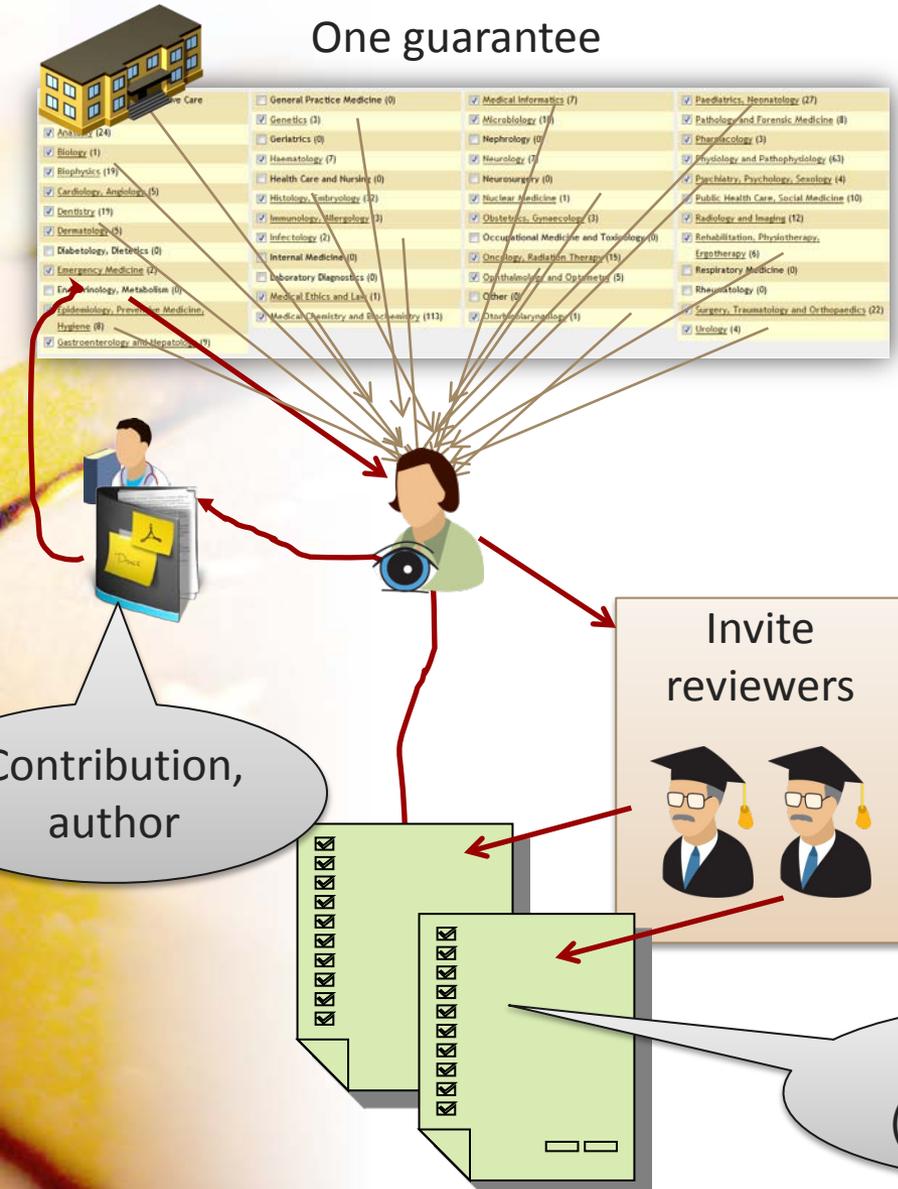


Reviews (XML template)

Contribution, author

# Guarantees, reviewers, authors

## One guarantee



## New properties, functionalities:

- Guarantee does not check the contents.
- Guarantee selects suitable reviewers.
- Guarantee creates reviewers' accounts.
- Reviewers fill a structured review-forms based on XML-template.
- Guarantee checks that required corrections have been made by authors.
- Guarantee provides the final conclusion.
- Everything is in the backoffice.



Ver. 1.8 = MAJOR UPGRADE

Reviews  
(XML template)

# Implementation details

metadata:  
description

links,  
attachements

metadata:  
keywords,  
disciplines

4-D quality  
assessment  
visualization

licence,  
authors

Multimedia support in the education of clinical and health care disciplines  
Portal of Masaryk University's Faculty of Medicine

mefanet  RITM  MU IBA 

Educational works | Multimedia | Elearning | For authors

### Isolated heart perfused according to Langendorff



The tutorial film "Isolated heart perfused according to Langendorff"

The tutorial film "Isolated heart perfused according to Langendorff" presents the basic methodologies used in experimental cardiology, which involve isolated hearts perfused according to Langendorff. It covers up-to-date trends in experimental cardiology. The film may be used at medical faculties and related schools. This instructional material has been created under the support of the University Development Fund of the Ministry of Education, Youth and Sports of the Czech Republic, project no. G3 1271/2008. This show is shortened version of 29-min movie.

Link	Date	Availability [?]	Clinically sensitive [?]	Licence
 The tutorial film "Isolated heart perfused according to Langendorff"	4.11.2009	anyone	-	

Keywords: [Physiology](#), [Experimental cardiology](#), [Isolated heart](#), [Animal experiments](#), [Langendorff](#)

Discipline:

- [Physiology and Pathophysiology](#)
- [Cardiology, Angiology](#)

4-D quality assessment:

type	level	unreviewed
 Textbooks and manuals  Educational websites and atlases  Digital video  Presentations and animations  Casuistics in images  Elearning courses (LMS)	 Undergraduate level  Graduate  Advanced Graduate  Complex	70.0 % uživatelské hodnocení* <a href="#">hodnotit*</a>

Article content is subject to licence Creative Commons [Uved'te autora-Neužívejte dílo komerčně-Nezasahujte do díla Attribution 3.0 Czech Republic](#)

author: [Kateřina Fialová](#), MUDr. Marie Nováková, Ph.D | pracoviště: [Department of Physiology](#) | published on: 4.11.2009 | last modified on: 4.11.2009  
 citation: Fialová Kateřina, MUDr. Marie Nováková, Ph.D: Isolated heart perfused according to Langendorff. Multimedia support in the education of clinical and health care

# 4-D quality assessment visualization

Export to the central gateway is subject to application of the 4-D quality assessment!



type							reviewed 70.0 % selfstudy score RATE IT
	Textbooks and manuals	Educational websites and atlases	Digital video	Presentations and animations	Casuistics in	Elearning	
level							
	Undergraduate	Graduate	Advanced Graduated	Complex			

**Names and affiliations of the reviewers.**

# Future vision: WITH A TUTOR!

4-D quality assessment implementation

Invite tutors from expert medical societies



Paranoic schizophrenia



General and special psychiatry



Paranoic schizophrenia



Eating disorders



General and special psychiatry



Imaging methods



General and special psychiatry



Psychiatry with a tutor!





# Thanks to...



## WEB STUDIO IBA MU

Ivo Šnábl  
Radim Šustr  
Martin Komenda  
Jakub Gregor  
Lenka Šnajdrová



## PORTAL ADMINISTRATORS

... for cooperation and patience



# END / SCHLUSS / FIN / KONEC



Questions, remarks, suggestions, complaints....

[schwarz@iba.muni.cz](mailto:schwarz@iba.muni.cz)

"Newer technologies such as computers and video conferencing are not necessarily better (or worse) for teaching or learning than older technologies . . . they are just different . . . The choice of technology should be driven by the needs of the learners and the context in which we are working, not by its novelty."

Bates AW. *Technology, open learning and distance education*.  
London: Routledge, 1995