



FIRST FACULTY OF MEDICINE  
CHARLES UNIVERSITY IN PRAGUE



# e-Learning and Distance Education for Laboratory Medicine on Charles University in Prague

Kocna P., Zima T., Štuka Č.



Education in Clinical Chemistry and Laboratory Medicine

EFLM Symposium, Prague, April 24 - 26, 2015



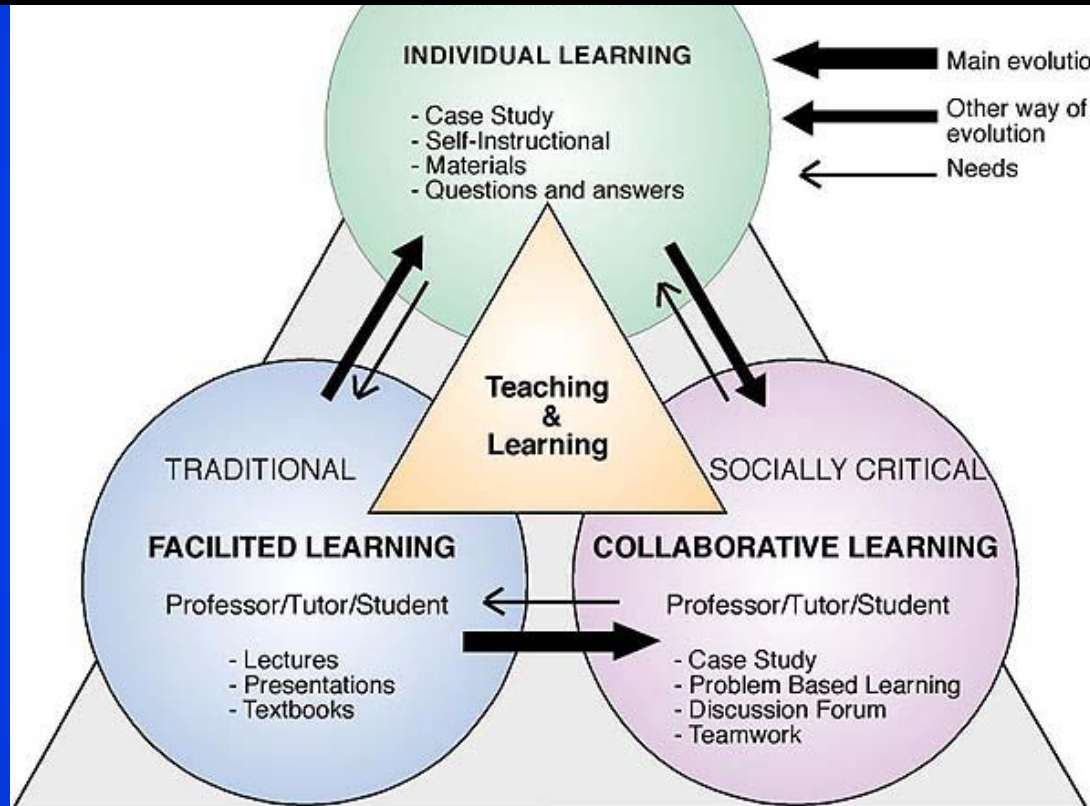
**E-learning (or eLearning)**  
is the use of **electronic educational technology** in  
learning and teaching.

Information and communication technology (**ICT**) in education,  
learning technology, multimedia learning,  
technology-enhanced learning (**TEL**), computer-based instruction (**CBI**),  
computer managed instruction, computer-based training (**CBT**),  
computer-assisted instruction or computer-aided instruction (**CAI**),  
internet-based training (**IBT**), flexible learning,  
web-based training (**WBT**), online education, virtual education,  
virtual learning environments (**VLE**) and digital education.

The term "**e-learning**" is used frequently,  
but is variously and imprecisely defined and applied.

<http://en.wikipedia.org/wiki/E-Learning>

Effective pedagogy, not the technology, is at the centre of the process.

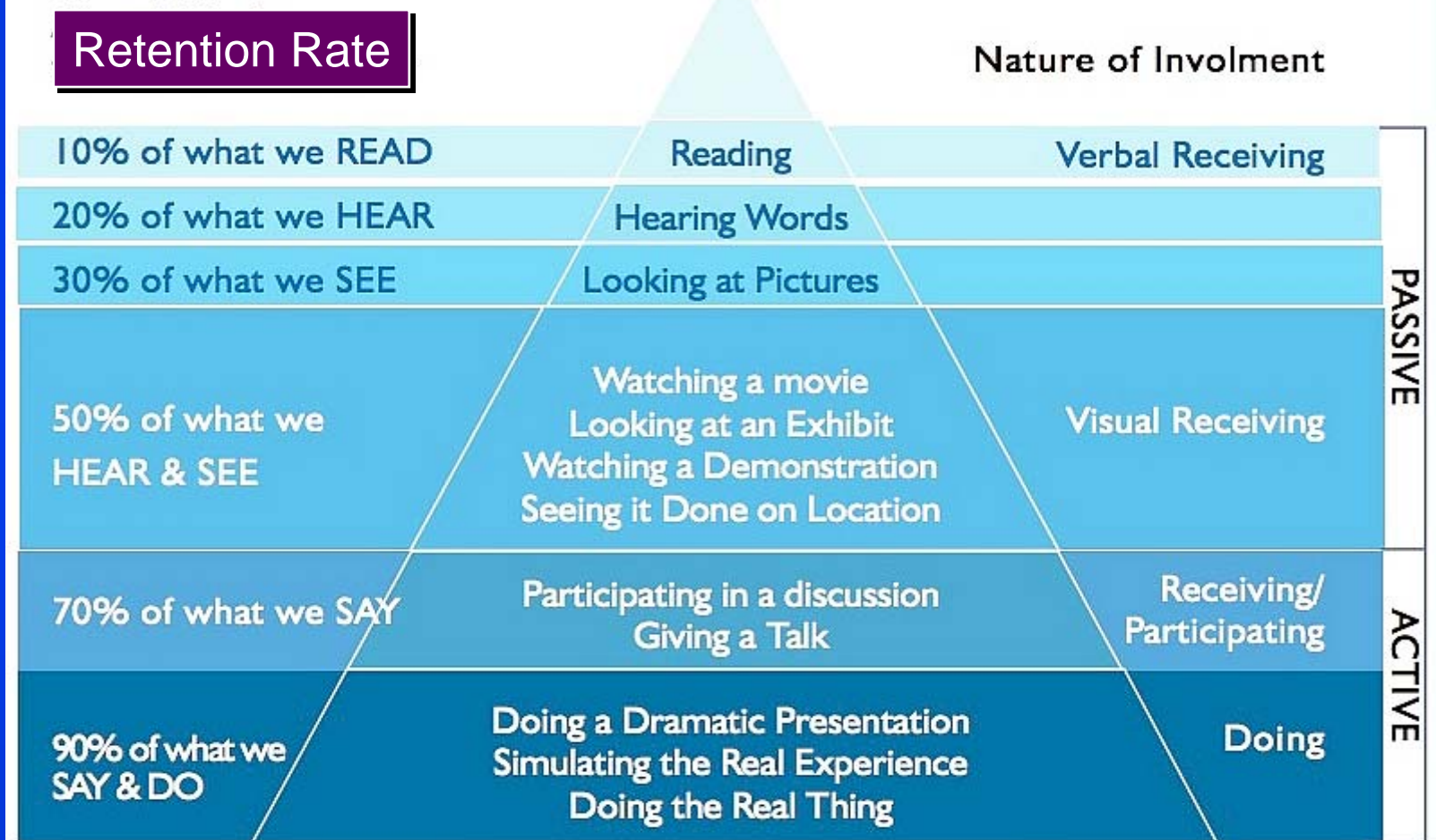


*Pedagogical approaches in online education*  
*Sven Ake Bjorke, February 2014*





# The importance of active forms of education



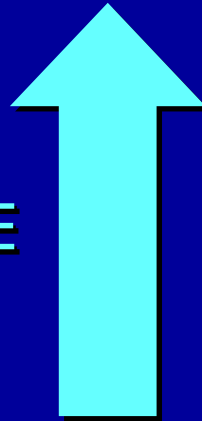
*Edgar Dale's cone of learning*

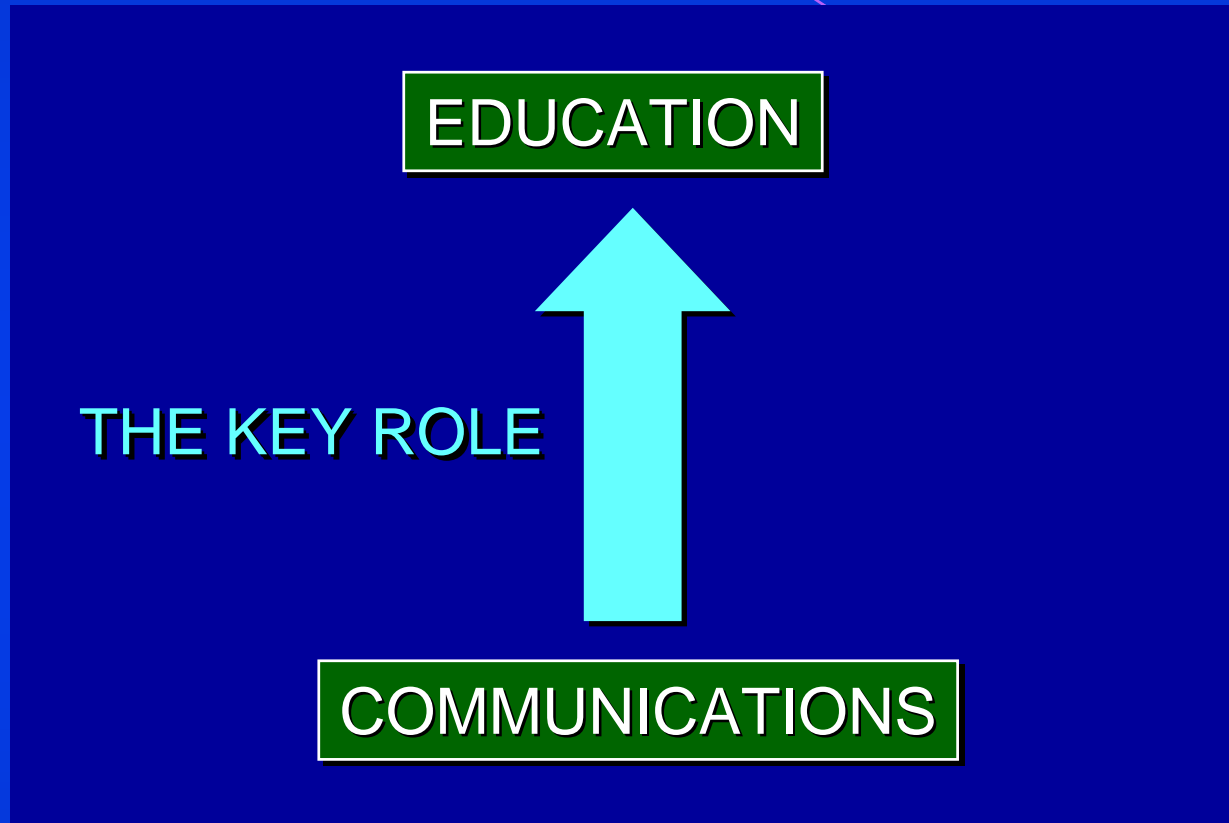
*Dale, E. Audio-visual methods in teaching. New York: Dryden. 1969*



EDUCATION

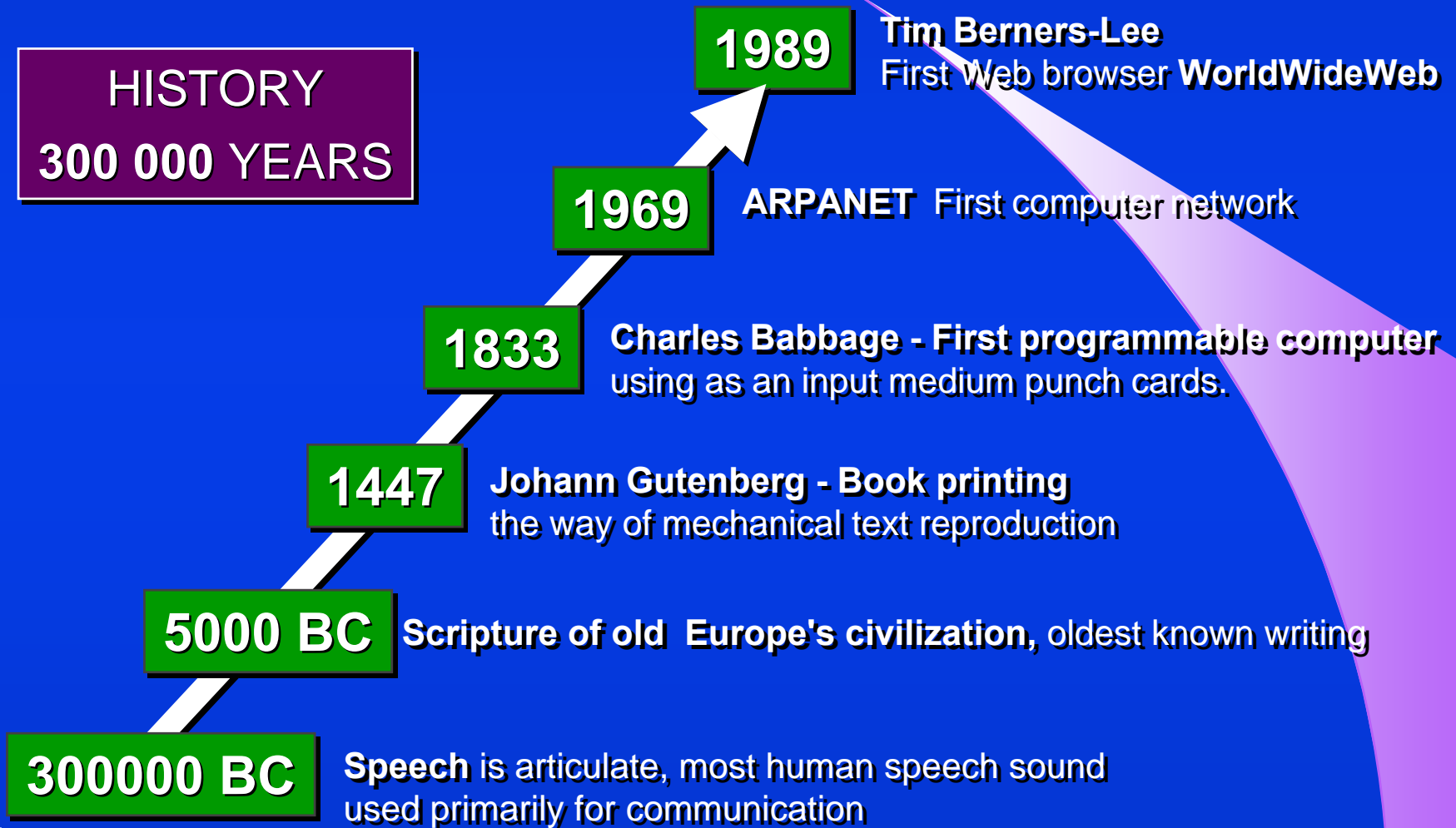
THE KEY ROLE







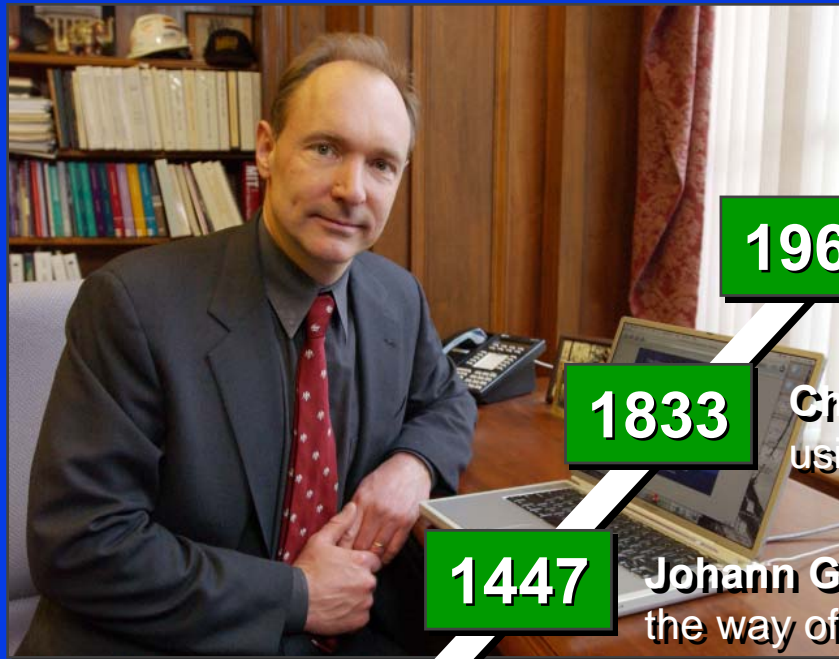
## Turning point in history of communication







## Turning point in history of communication



1989

Tim Berners-Lee  
First Web browser **WorldWideWeb**

1969

**ARPANET** First computer network

1833

**Charles Babbage** - First programmable computer using as an input medium punch cards.

1447

**Johann Gutenberg** - Book printing the way of mechanical text reproduction

5000 BC

Scripture of old Europe's civilization, oldest known writing

300000 BC

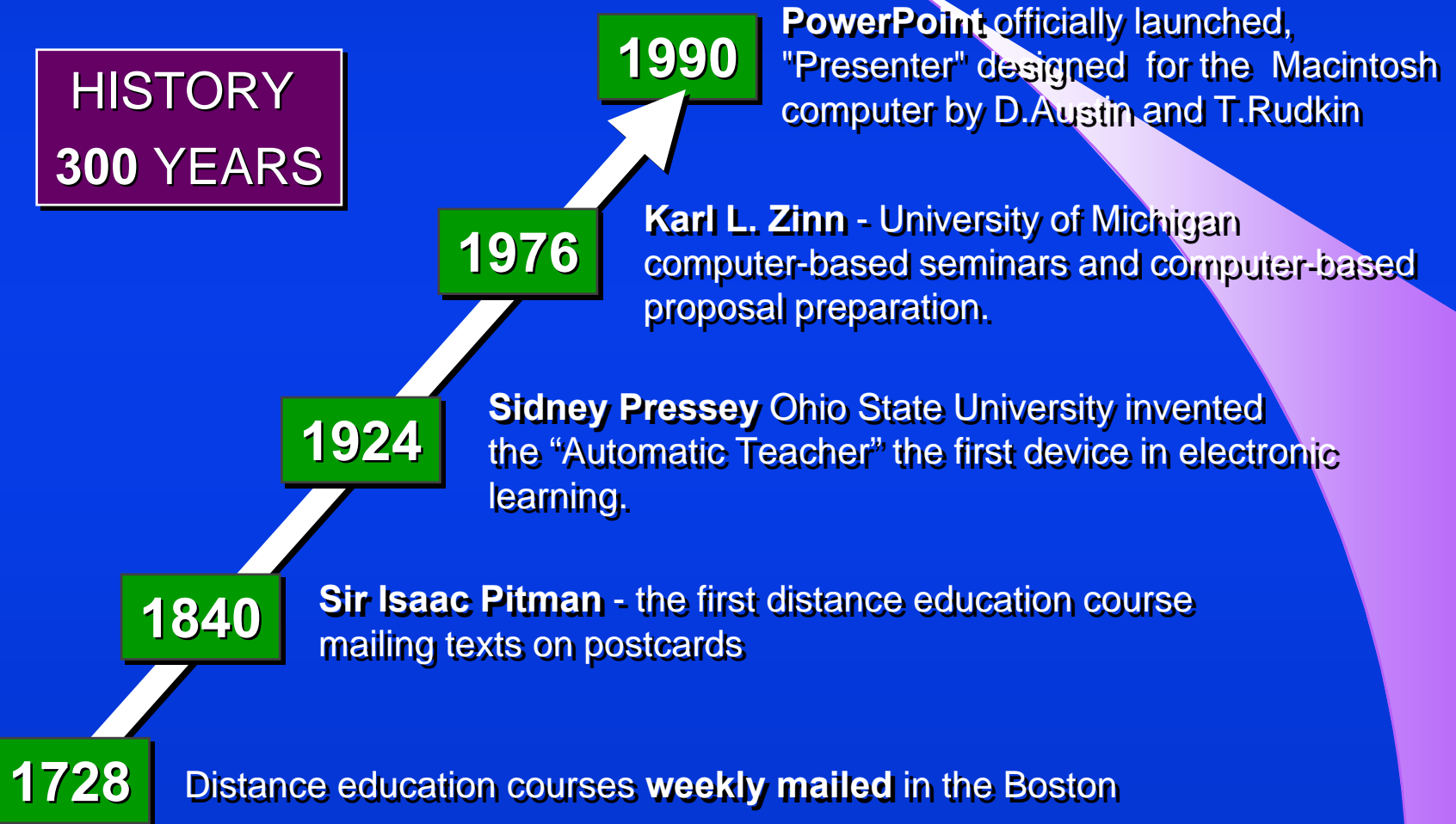
Speech is articulate, most human speech sound used primarily for communication





## Turning point in history of distance education

HISTORY  
300 YEARS





## Turning point in history of distance education



1728

Distance education courses **weekly mailed** in the Boston

1840

**Sir Isaac Pitman** - the first distance education course mailing texts on postcards

1924

**Sidney Pressey** Ohio State University invented the "Automatic Teacher" the first device in electronic learning.

1976

**Karl L. Zinn** - University of Michigan computer-based seminars and computer-based proposal preparation.

1990

**PowerPoint** officially launched, "Presenter" designed for the Macintosh computer by D.Austin and T.Rudkin



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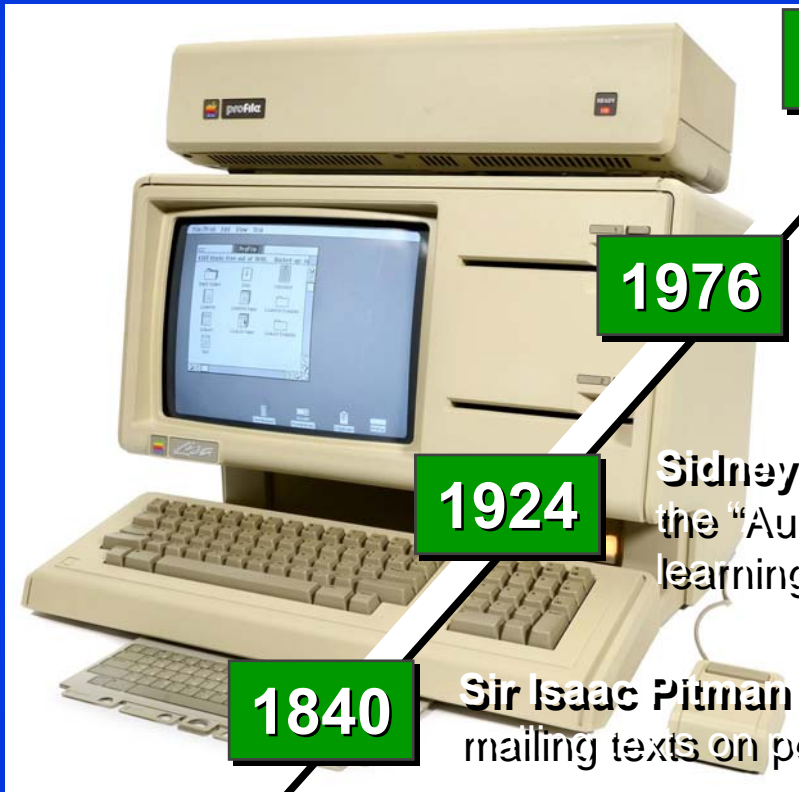
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## Turning point in history of eLearning

HISTORY  
30 YEARS

2010s

The future holds a new wave of e-learning inspired by **social media**, Massive Open Online Courses (MOOCs), Selective Open Online Courses (SOOCs) and even **websites like YouTube**.

2000s

In the 2000s, businesses began using **e-learning to train** their employees.

1990s

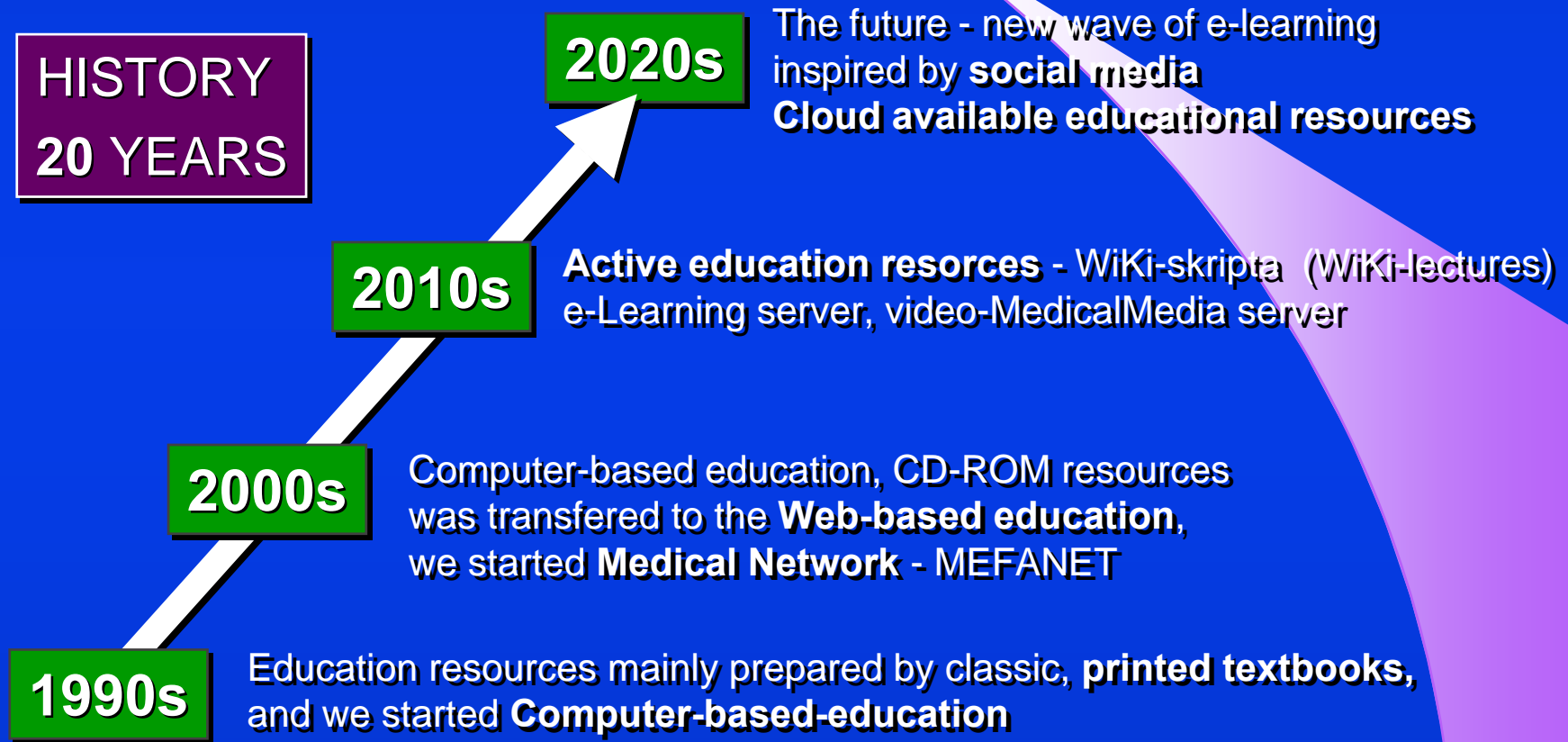
At the end of the 90s the **learning management systems (LMS)** spread widely. Some universities preferred to design and develop their own systems, but most of the educational institutions started with systems from the market.

1980s

The origins of the **term e-Learning** is not certain, although it is suggested that the term most likely originated during the 1980's.



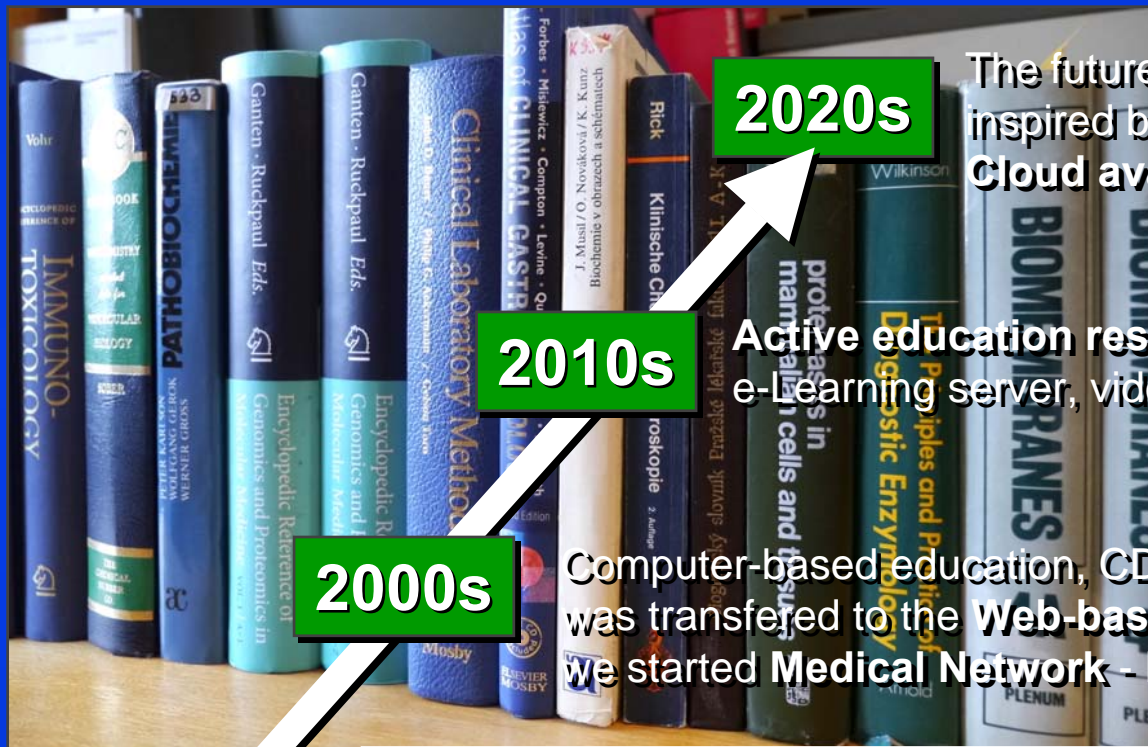
## Turning point in history of eLearning on 1st Medical Faculty







## Turning point in history of eLearning on 1st Medical Faculty



**1990s**

Education resources mainly prepared by classic, **printed textbooks**, and we started **Computer-based-education**

**2000s**

Computer-based education, CD-ROM resources was transferred to the **Web-based education**, we started **Medical Network - MEFANET**

**2010s**

**Active education resources - Wiki-skripta (Wiki-lectures)** e-learning server, video-MedicalMedia server

**2020s**

The future - new wave of e-learning inspired by **social media**  
**Cloud available educational resources**



**Department of Clinical Biochemistry was the first one started  
Computer-based education with PowerPoint - Windows 3.1  
and LCD projection**



**LCD Projection Panel Monitor  
Proxima Ovation 820  
Cyclop Monitor Synchronization**





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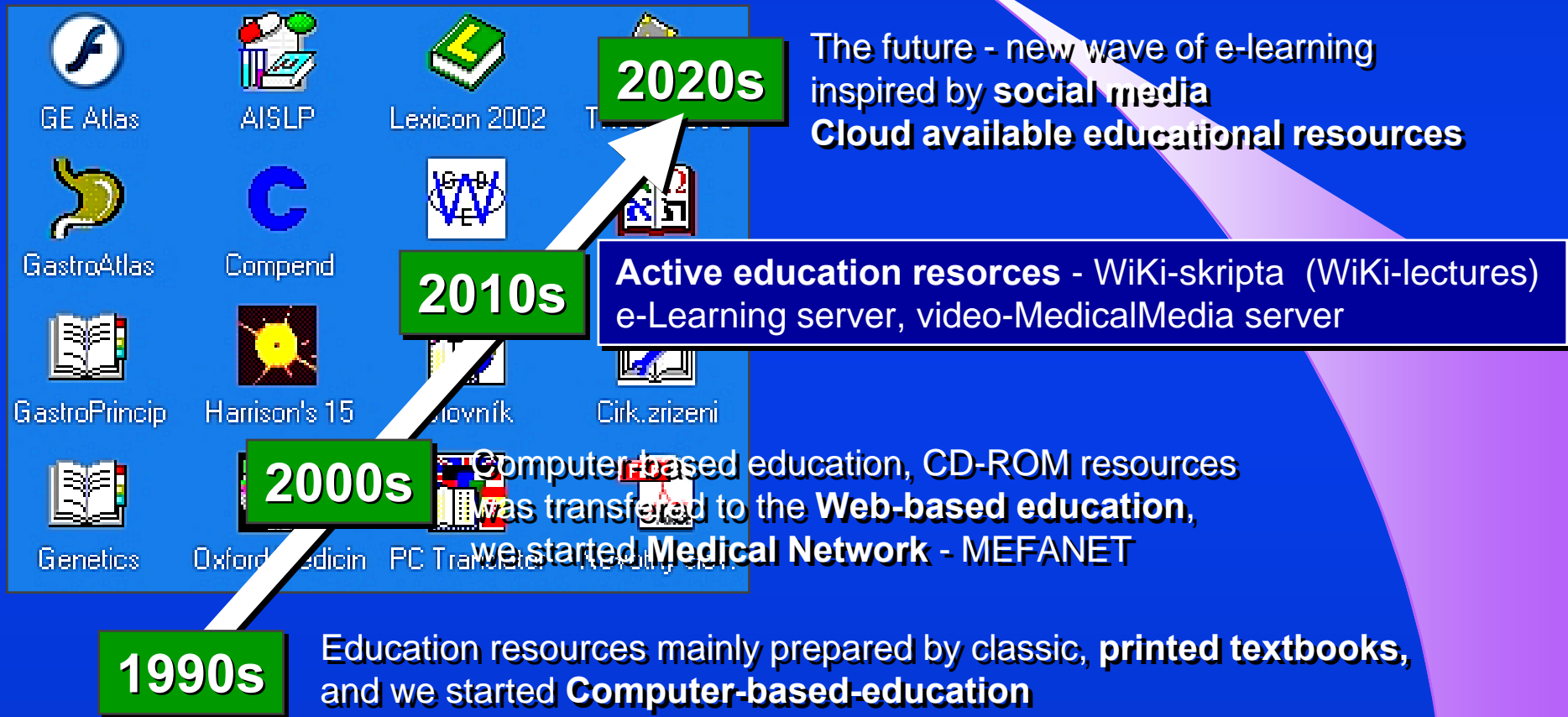
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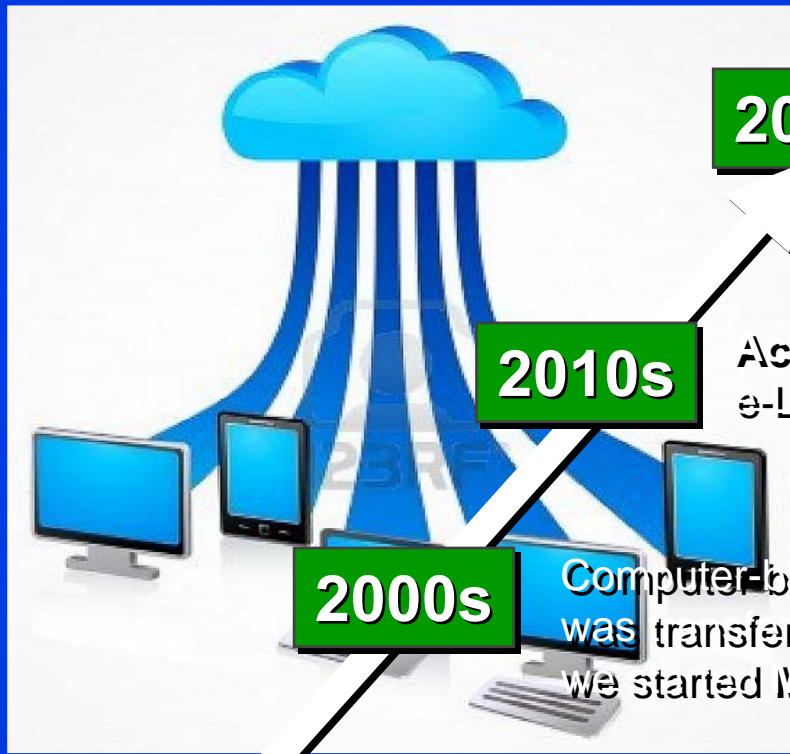


# Turning point in history of eLearning on 1st Medical Faculty





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## Educational Portal od 1st. Medical Faculty

portal.mf1.cuni.cz/index-en.php

### Educational portal of 1-st Faculty of Medicine - Charles University in Prague

**Text, pictures, textbooks, manuals**  
**Lectures, presentations - PDF, PPT**  
**Video - MP4, FLV**  
**Courses - MOODLE**

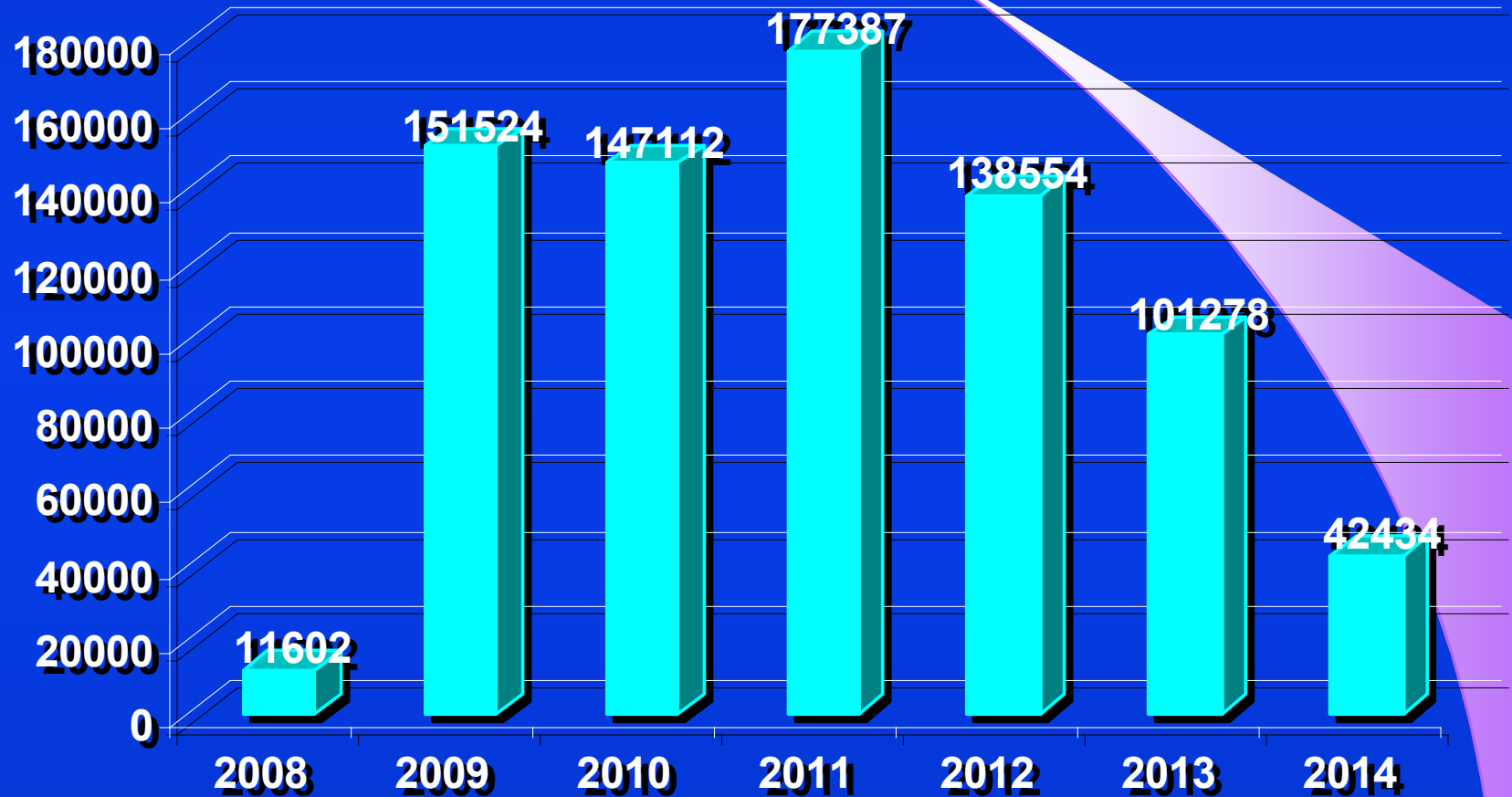
**Traditional web-based education portals**

<http://portal.mefanet.cz/>





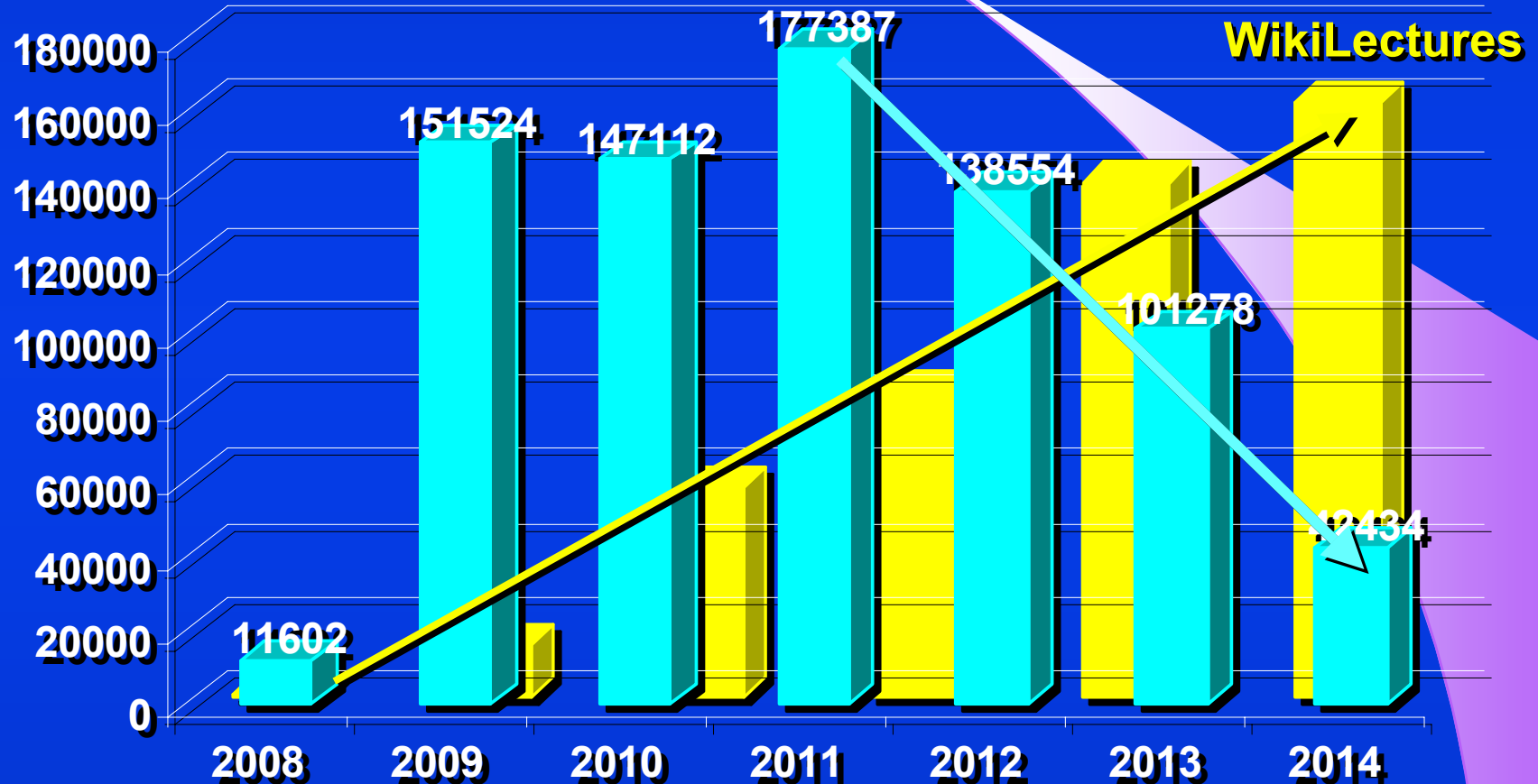
## Educational Portal od 1st. Medical Faculty



Visitors of education portal of 1st. Medical Faculty



## Educational Portal od 1st. Medical Faculty



Visitors of education portal of 1st. Medical Faculty



## MEFANET - Network of educational portals

- ◆ e-publishing Central Gate
- ◆ international communication
- ◆ authentication system - Shibboleth

1. Medical Faculty UK in Prague

2. Medical Faculty UK in Prague

3. Medical Faculty UK in Prague

Medical Faculty UK  
in Hradec Králové

Medical Faculty Palacky's  
University in Olomouc

Medical Faculty UK  
in Plzen

Medical Faculty  
Universitas Ostravensis

Medical Faculty Masaryk's  
University in Brno

Jessenius's Medical Faculty UK  
in Martin

Medical Faculty Comenius  
University in Bratislava

Medical Faculty Pavel Jozef Šafárik's  
University in Košice





**MEFANET**

**MEDICAL FACULTIES – EDUCATIONAL NETWORK**

1LFUK	2LFUK	3LFUK	LFP	LFHK	LFUP	LMUO	LFMU	LFUKB	JLFM	LFPJS
4388	1501	1933	1411	1824	2236	1349	4419	4479	1673	1524

Total: 23 000 students at 11 faculties



# MEFANET - Network of educational portals

Service Provider at `shibboleth.lf1.cuni.cz` requires authentication using Central Authentication Service

**Central Authentication Service of Charles University**

Username:

Password:

**Login**

Enter your personal number printed under the photo at ID card as your username. You can also use your faculty login complete with domain (ie. login@faculty.cuni.cz).

Enter your password, check for keyboard settings (language version, CapsLock).

**For security reasons, please Log Out and Exit your web browser when you are done accessing services that require authentication!**



# MEFANET - e-Learning educational resources

## GASTROENTEROLOGY LABORATORY DIAGNOSTICS & CASES Part 4 – Colorectal cancer

MUDr.Petr Kocna CSc.

<http://www.lf1.cuni.cz/~kocna/pkweb1.htm>



evropský  
sociální  
fond v ČR



EVROPSKÁ UNIE



MINISTERSTVO ŠKOLSTVÍ,  
MLÁDEŽE A TĚLOVÝCHOVY



OP Vzdělávání  
pro konkurenceschopnost

INVESTICE DO ROZVOJE VZDĚLÁVÁNÍ

ÚLBLD – 1.LFUK Prague, August 2013

Laboratorní dg.v  
gastroenterologii – 4.  
Kolorektální karcinom



MUDr.Petr Kocna CSc.  
Contact

Outline Thumb Notes Search

Slide Title	Duration
▶ Slide 1	00:06
Slide 2	00:07
Slide 3	01:18
Slide 4	00:19
Slide 5	00:20
Slide 6	00:35
Slide 7	01:19

8 Minutes 18 Seconds Remaining



Slide 1 / 14 | Stopped

00:00 / 00:06







## MEFANET - e-Learning educational resources



Visitors of e-Learning resources of 1st. Medical Faculty



# WikiLectures (English) - WikiSkrпта (Czech)

lač Přeloženo do jazyka: [angličtina](#) Zobrazit původní Možnosti

## WikiSkrпта

Your space for creation and storage  
of medical study materials

[Register](#)  
[FAQ](#)  
[How to Start](#)

- Home
- Help
- Forum
- Create article
- Contacts
- Noticeboard

- ▶ **Instruments**
- ▶ **Print and PDF**

### Medical fields published 7953 articles

Anatomy	Infectious Diseases	Nursing
Angiology	Internal Medicine	Diseases
Biofizika	Cardiology	Patobiochemie
Biochemistry	Clinical Biochemistry	Patofyziologie
Dermatovenerologie	Medical Biology and Genetics	Pediatrics

▼ [View all courses](#) ▼

### News

#### Professor Štípek, WikiLectures initiator, received the prestigious award



Congratulations to Professor Štípek for his contribution to obtain prizes by Werner von Siemens for the best teaching staff!! Award-winning contribution was not only his life teaching activities, but also to create a climate conducive to the development of innovative solutions. Your friends and co-workers presented unsolvable tasks which then

### Meet WikiSkrпта



Imagine learning without books hundredweight. Imagine a world in which students and professionals collaborate in the development of timely, credible and dynamic educational texts. [These are WikiSkrпта](#) :-).

### Get Involved

- Want to get involved in the creation WikiLectures? Load one of the desired articles :  
na • [Wavelength](#) • [Metronidazole](#) • [Analgo-sedation](#) • [Catalase](#) • [History of](#)
- Some articles are too short and need only extend - to help us improve unfinished articles !
- To insert a new post is missing here your industry? Do you have a text suitable for WikiSkrпта, but you do not want to convert it into wiki code?  
**Write to the editor!** - [redakce@wikiskrpta.eu](mailto:redakce@wikiskrpta.eu) 📧

### People

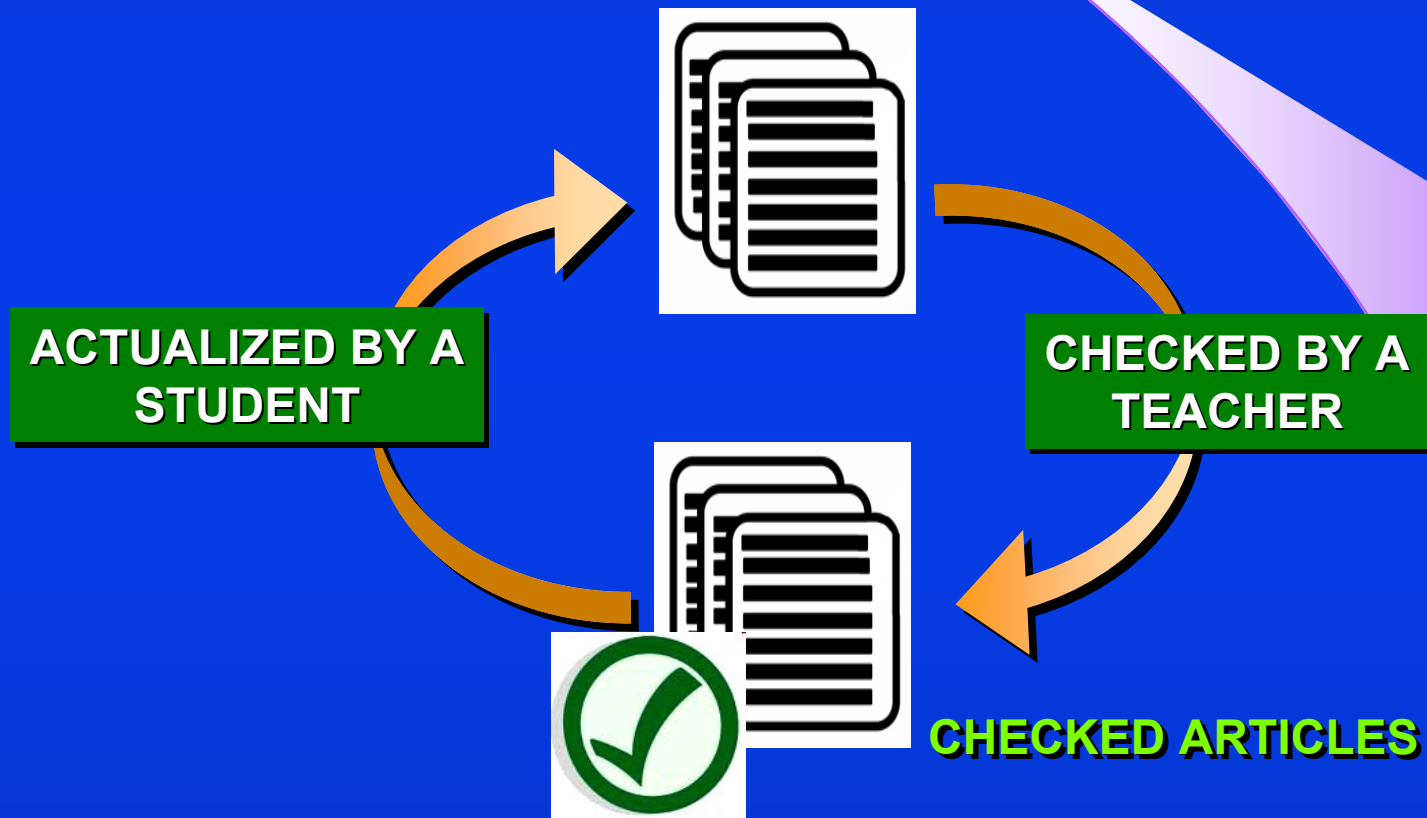
George M

<http://www.wikilectures.eu>



# WikiLectures (English) - WikiSkripta (Czech)

ARTICLES PREPARED BY TEACHERS & STUDENTS







# WikiLectures (English) - WikiSkripta (Czech)



## Chronic pancreatitis

**Chronic pancreatitis** (CHP) is defined as the ongoing inflammatory disease of the pancreas with a characteristic, irreversible, morphological changes characteristic causing pain and permanent loss of function of the pancreas . Laboratory diagnosis is therefore focused on the direct and indirect tests Thermo exocrine pancreas, the determination of the rate of secretion of pancreatic enzymes evaluation activities - chymotrypsin or elastase-1 in stools . Recently, there are more new function tests - breath tests when orally substrate is labeled with carbon isotope  $^{13}\text{C}$  (earlier tests isotope  $^{14}\text{C}$ ). The measure of activity of pancreatic enzymes, the concentration of  $^{13}\text{C}$  (or  $^{14}\text{C}$ ) in the exhaled air. The gold standard of diagnosis is functional secretin-pankreozyminový (secretin-CCK) test as a reference test is used as a quantitative determination of fat in a 72-hour stool collection.

### References [ edit | edit source ]

### Related Articles [ edit | edit source ]

- Acute pancreatitis
- Acute pancreatitis (laboratory diagnostics)
- Chronic pancreatitis

### Source [ edit | edit source ]

• Taken with permission from KOCN Petr *Gastrol ab: MiniEncyklopedie laboratorv methods in gastroenterology* [online] ©

### The article was checked by teacher



This article has been checked by the teacher.  
Signature: MD. Petr Kocna, PhD.  
This template may insert a teacher .

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#### Portals

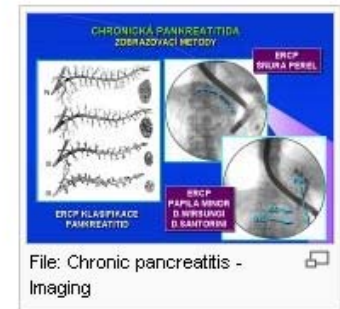
Biochemistry

Gastroenterology

Clinical Biochemistry

#### Instruments

#### Print and PDF



File: Chronic pancreatitis - Imaging

### Content [ hide ]

1 Links

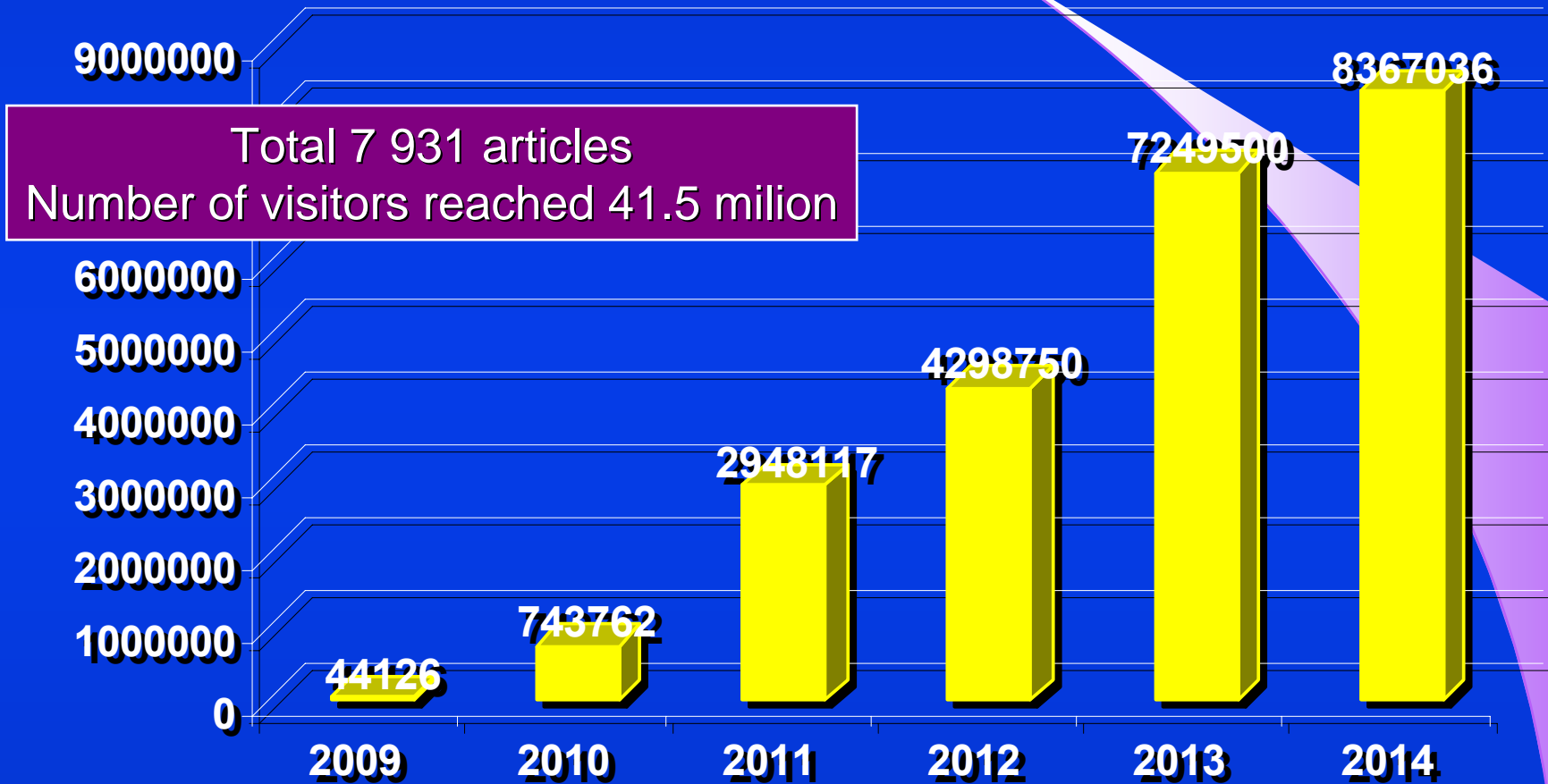
1.1 Related Articles

1.2 Source

1.3 References



## WikiLectures (English) - WikiSkripta (Czech)



Visitors of WiKi-Lectures-Skripta of 1st.Medical Faculty



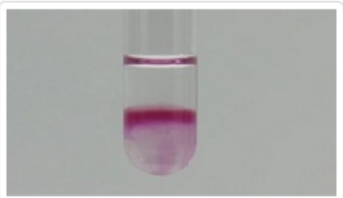
# Medical Media - Educational Video Projects

Videa | Medical Media

www.medicalmedia.eu/en/


Medical Media Search CZ Sign in

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Průkaz žlučových barviv a krev...

views 0x | 2/26/2015 00:04:27




Transfer Technologí

views 0x | 2/24/2015 00:00:00




Viskozita kapalin

views 7x | 2/24/2015 00:07:10




Ošetření vysokovýkonným oévníím...

views 0x | 2/24/2015 00:08:38




Excize drobného junkčního mela...

views 0x | 2/24/2015 00:03:04




Ošetření bazaliomu na čele kry...

views 0x | 2/24/2015 00:02:04




Odstranění fibroma molle elekt...

views 0x | 2/24/2015 00:02:13




Totální excize bazaliomu na zá...


views 0x | 2/24/2015 00:10:52



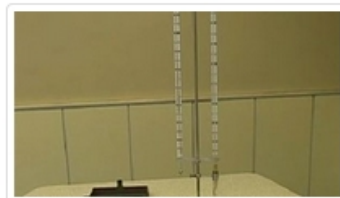
neurologického aparátu



neurologického aparátu



Coibovnění okulárního



Měření základních

www.medicalmedia.eu/en/





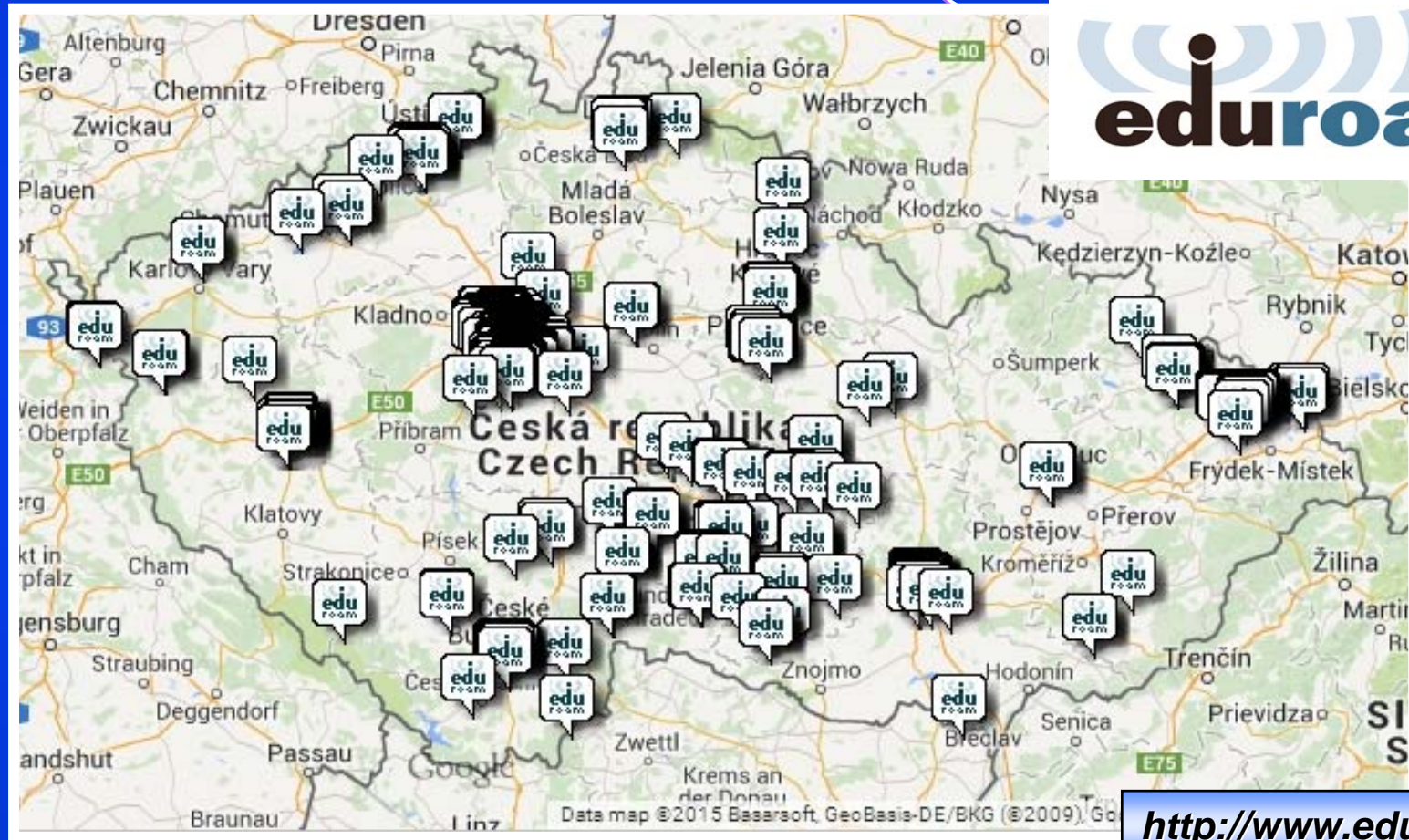
## Medical Media - Educational Video Projects



Visitors of Medical Media Server of 1st.Medical Faculty



## EDUROAM - WiFi - Connectivity in CR



<http://www.eduroam.cz>



**EXPERIENCES  
OF 1st MEDICAL FACULTY  
CHARLES UNIVERSITY**

**RECOMMENDATIONS  
OF IFCC  
COMMITTEES**

**2004 - 2007**

**Member of IFCC - Working Group on Distance Education (WG-DE)**

**2008 - 2010**

**Chair of IFCC Committee on Education and Curriculum Development (C-ECD)**

**2009 - 2011**

**Member of IFCC - Working Group on Internet & Distance Learning (WG-IDL)  
since 2012**

**Member of IFCC - Committee on Internet and eLearning (CPD C-leL)  
since 2015**

**Corresponding Member of IFCC - Committee on Distance Learning (C-DL)**





**e-Learning solutions facilitate  
the delivery of the  
right information and skills  
to the right people  
at the right time.  
B. W. Ruttenbur**

***Ruttenbur, B., Spickler, G., Lurie, S. (2000). eLearning:  
The Engine of the Knowledge Economy.  
Published by Morgan Keegan & Co., July 6. 2000, 109pp.  
<http://www.masie.com/masie/researchreports/elearning0700nate2.pdf>***



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**THANK YOU**