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

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Education in Clinical Chemistry and Laboratory Medicine

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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.

Effective pedagogy, not the technology, is at the centre of the process.
The importance of active forms of education

Edgar Dale's cone of learning

EDUCATION

THE KEY ROLE
EDUCATION

THE KEY ROLE

COMMUNICATIONS
Turning point in history of communication

HISTORY
300 000 YEARS

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
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http://www.w3.org/People/Berners-Lee/
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.


1990: PowerPoint officially launched, "Presenter" designed for the Macintosh computer by D.Austin and T.Rudkin.
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Karl L. Zinn - University of Michigan computer-based seminars and computer-based proposal preparation.

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Turning point in history of distance education

http://www.npg.org.uk/collections/search/portraitLarge/mw05032/Sir-Isaac-Pitman
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The origins of the term e-Learning is not certain, although it is suggested that the term most likely originated during the 1980's.

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.

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

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.
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

**HISTORY**

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

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e-Learning server, video-MedicalMedia server

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Department of Clinical Biochemistry was the first one started computer-based education with PowerPoint - Windows 3.1 and LCD projection.
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- E-Learning server, video-MedicalMedia server

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Educational Portal od 1st. Medical Faculty

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

Traditional web-based education portals

http://portal.mefanet.cz/
Educational Portal of 1st Medical Faculty

Visitors of education portal of 1st Medical Faculty

- 2008: 11602
- 2009: 151524
- 2010: 147112
- 2011: 177387
- 2012: 138554
- 2013: 101278
- 2014: 42434
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 Plzen
Medical Faculty Masaryk's University in Brno
Medical Faculty Palacký's University in Olomouc
Medical Faculty Comenius University in Bratislava
Medical Faculty Pavel Jozef Šafárik's University in Košice
Medical Faculty UK in Hradec Králové

Jessenius's Medical Faculty UK in Martin

Medical Faculty Universitas Ostraviensis

http://portal.mefanet.cz/
### MEFANET
MEdical FAculties – Educational NETwork

<table>
<thead>
<tr>
<th>1LFUK</th>
<th>2LFUK</th>
<th>3LFUK</th>
<th>LFP</th>
<th>LFHK</th>
<th>LFUP</th>
<th>LMUO</th>
<th>LFU</th>
<th>LFKB</th>
<th>JLFM</th>
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<td>1501</td>
<td>1933</td>
<td>1411</td>
<td>1824</td>
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<td>1349</td>
<td>4419</td>
<td>4479</td>
<td>1673</td>
<td>1524</td>
</tr>
</tbody>
</table>

Total: 23 000 students at 11 faculties
MEFANET - Network of educational portals

CAS - Central Authentication Service of Charles University

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

Central Authentication Service of Charles University
Username: [enter your username]
Password: [enter your password]

Enter your personal number printed under the photo at ID card as your username. You can also use your faculty login complete with domain (e.g., 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!
GASTROENTEROLOGY
LABORATORY DIAGNOSTICS & CASES
Part 4 – Colorectal cancer

MUDr. Petr Kocna CSc.
http://www.if1.cuni.cz/~kocna/pkweb1.htm

ÚBLBD – 1.LFUk Prague, August 2013

http://portal.mefanet.cz/
MEFANET - e-Learning educational resources

Total 3 505 e-Learning objects
928 accounted for Laboratory Medicine

Visitors of e-Learning resources of 1st. Medical Faculty
WikiLectures (English) - WikiSkripta (Czech)

WikiSkripta
Your space for creation and storage of medical study materials

Medical fields
- Anatomy
- Angiology
- Biochemistry
- Dermatovenerologie
- Infectious Diseases
- Internal Medicine
- Cardiology
- Clinical Biochemistry
- Medical Biology and Genetics
- Nursing
- Pathology
- Pathobiology

Meet WikiSkripta

Imagine learning without books hundreds of pages thick. Imagine a world in which students and professionals collaborate in the development of lively, credible and dynamic educational texts. These are WikiSkripta. ...

Get Involved
- Want to get involved in the creation of WikiLectures? List one of the desired articles:
  - Wavelength • Melatonin • Anaerobiosis • Catalase • History of
- Some articles are too short and need only extend - to help us improve them. What do you think?
- To rewrite a new post is missing here your contribution? Do you have a last minute idea? What do you want to add?
  Write to the editor: roadeo@wikiskripta.eu

People

Professor Stípek, WikiLectures initiator, received the prestigious award

Congratulations to Professor Stípek 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 unanswerable tasks which then

http://www.wikilectures.eu
WikiLectures (English) - WikiSkripta (Czech)

ARTICLES PREPARED BY TEACHERS & STUDENTS

ACTUALIZED BY A STUDENT

CHECKED BY A TEACHER

CHECKED ARTICLES

Quality, Checking Process for WikiLectures, WikiSkripta
Chronic pancreatitis (CP) is defined as an 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 eosynence pancreas, the determination of the rate of secretion of pancreatic enzymes evaluation activities - chymotrypsin or elastase-1 in stools. Recently, there are more novel function tests - breath tests when orally substrate is labeled with carbon isotope $^{13}$C (earlier tests isotopes $^{14}$C). The measure of activity of pancreatic enzymes, the concentration of $^{13}$C (or $^{14}$C) in the exhaled air. The gold standard of diagnosis is functional secretin-pancreozymin (secretin-CK) test as a reference test is used as a quantitative determination of fat in a 72-hour stool collection.

**References**

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

**Related Articles**

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

**Source**

- Taken with permission from KOCN Petr, Gastralab. Minerva medicina. Laboratory methods in mastertoncheky. [online] @ www.wikiskripta.eu
Total 7,931 articles
Number of visitors reached 41.5 million

Visitors of WiKi-Lectures-Skripta of 1st. Medical Faculty
The newest educational resources started in 2011
224 videos published in 2 years

Visitors of Medical Media Server of 1st Medical Faculty
EDUROAM - WiFi - Connectivity in CR

http://www.eduroam.cz

650 WiFi EDUROAM CONNECTED CENTERS
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)

2012 -
Member of IFCC - Committee on Internet and eLearning (CPD C-IeL)

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


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THANK YOU