

**Institute of Clinical Biochemistry and Laboratory Diagnostics,
1st. Medical Faculty, Charles University, Prague, Czech Republic**

**e-Learning experiences of National Societies of
Clinical Chemistry and Laboratory Medicine**
Petr Kocna



IFCC Symposium - May 16, 2011

eLearning and Distance Education in Clinical Chemistry and Laboratory Medicine

Questionnaires - Survey for all National societies

- **Working Group on Distance Education (WG-DE)**
chaired by prof.Juretic
1st. survey 2005
- **Committee on Education and Curriculum Development (C - ECD)**
chaired by L.C.Allen and P.Kocna
2nd. survey 2010
- **Working Group on Internet - Distance Learning (WG - IDL)**
chaired by V.T.Thanh and P. Vervaart

- ❑ **eLearning - Distance Education**

- ❑ **IFCC 1.survey 2005**

 - Working Group on Distance Education**

- ❑ **Changes 2005 - 2010**

- ❑ **C-ECD Educational Database**

 - Committee on Education and Curriculum Development**

- ❑ **IFCC 2.survey 2010**

- ❑ **WG-IDL Perspectives**

 - Working Group on Internet - Distance Learning**

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- ❑ C-ECD Educational Database

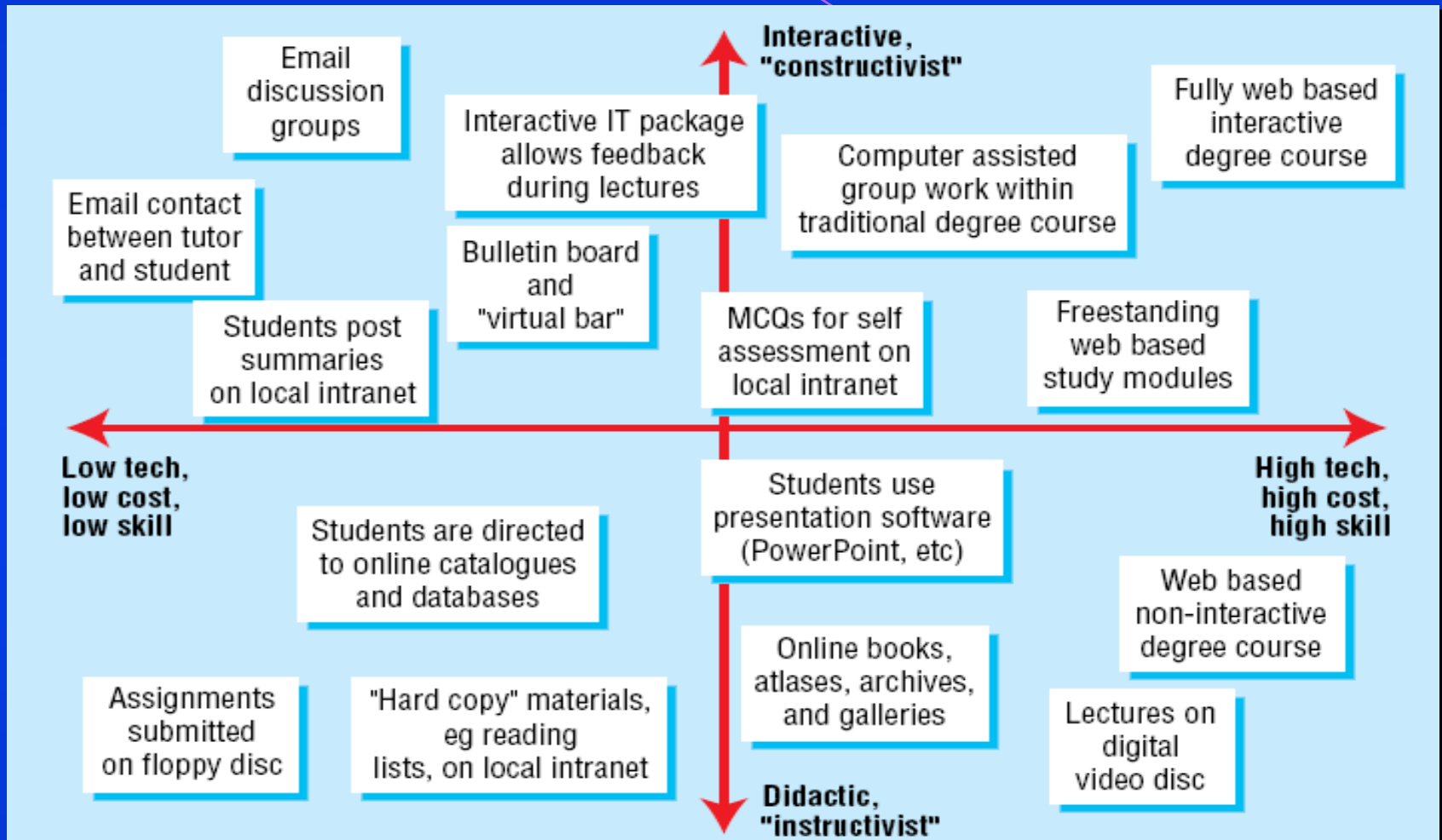
 - Committee on Education and Curriculum Development

- ❑ IFCC 2.survey 2010

- ❑ WG-IDL Perspectives

 - Working Group on Internet - Distance Learning

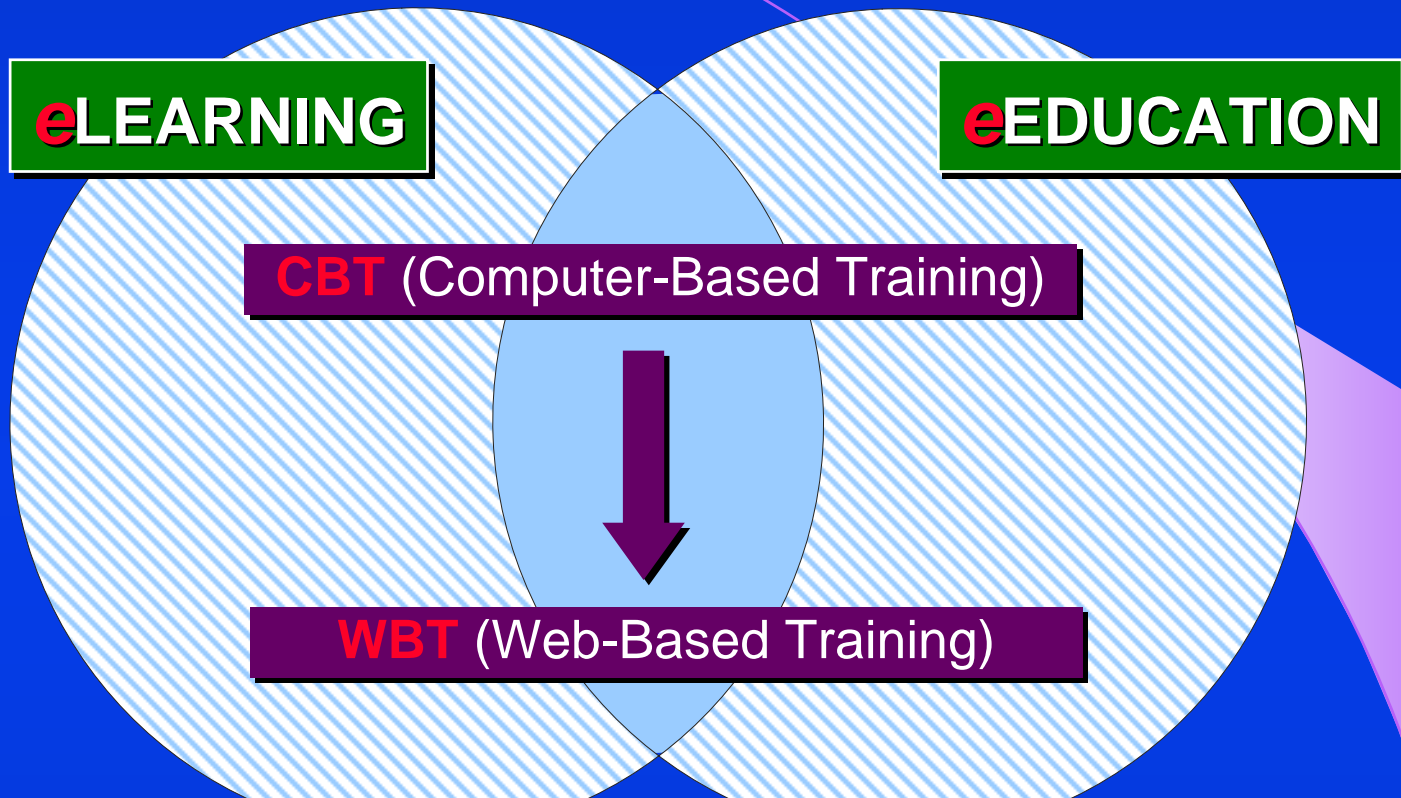
eLearning - Distance Education



Greenhalgh T.; Br. Med. J. 2001; 322

<http://david.openflows.org/edutech/wraparound2.ppt>

eLearning - Distance Education



eLearning - they are **multimedia support** of the educational process using modern information and communication technology **to improve** the quality of education.

- ❑ eLearning - Distance Education

- ❑ IFCC 1.survey 2005

Working Group on Distance Education

- ❑ Changes 2005 - 2010

- ❑ C-ECD Educational Database

Committee on Education and Curriculum Development

- ❑ IFCC 2.survey 2010

- ❑ WG-IDL Perspectives

Working Group on Internet - Distance Learning

1st. IFCC SURVEY 2005

- 34 responded societies of Clinical Biochemistry
- 24 societies with Website on the Internet (70.59%)
- 14 societies with Educational part of website (41.18%)

WEB BASED EDUCATION

in 2005

in 2010

undergraduate study program in CBLM

2.9 %

postgraduate study program in CBLM

20.5 %

program of specialisation in CBLM

14.7 %

clinical cases

5.8 %

multiple choice questions

2.9 %

e-mail teaching communication

2.9 %

electronic books

2.9 %

educational use of EQA national programs

17.6 %

lectures of congresses or courses

29.4 %



slide 27

- ❑ **eLearning - Distance Education**

- ❑ **IFCC 1.survey 2005**

Working Group on Distance Education

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- ❑ **C-ECD Educational Database**

Committee on Education and Curriculum Development

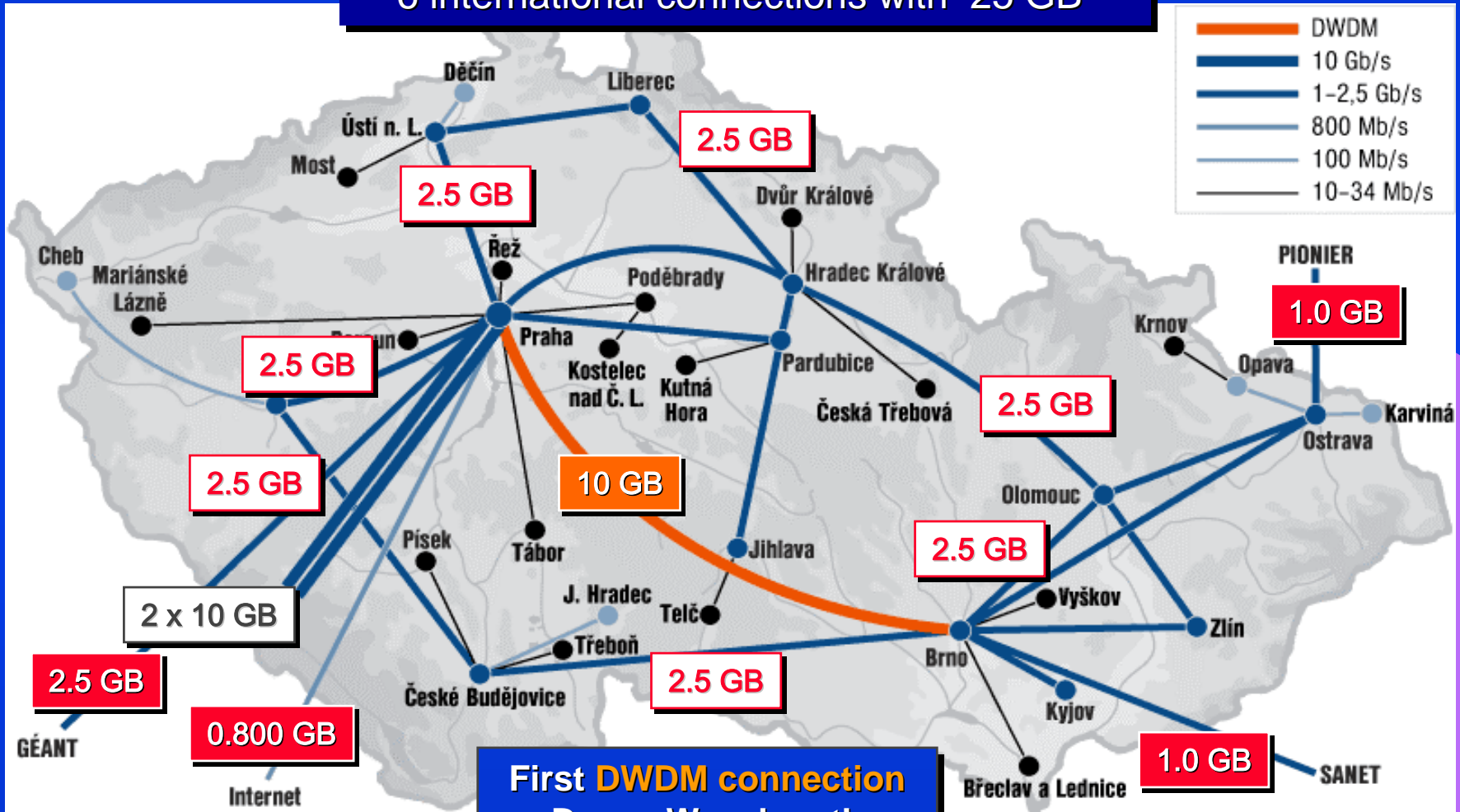
- ❑ **IFCC 2.survey 2010**

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Working Group on Internet - Distance Learning

INTERNET CONNECTIVITY in CR - 2005

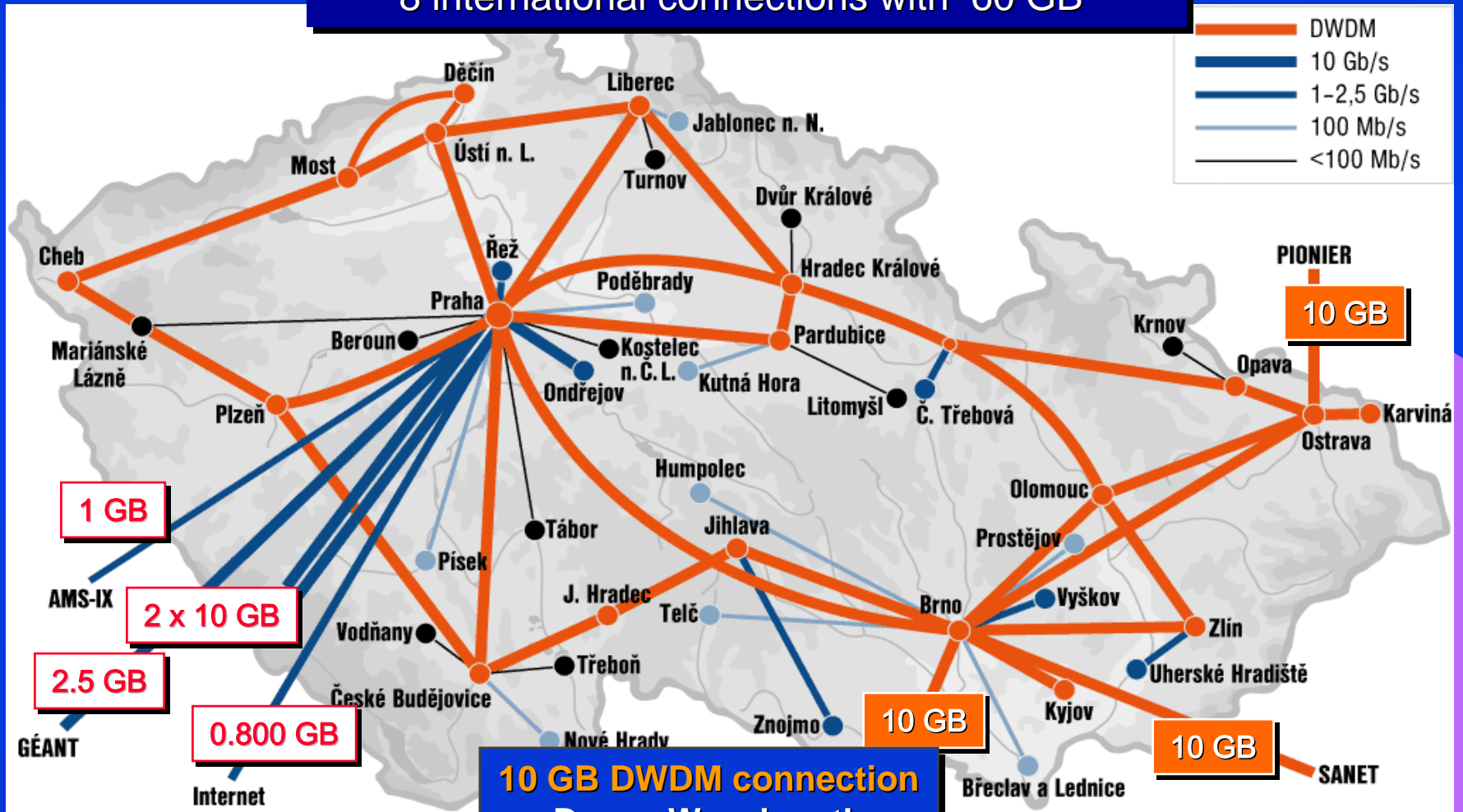
most of cities connected with only 1 - 2.5 GB
6 international connections with 25 GB



First **DWDM** connection
Dense Wavelength
Division Multiplexing

INTERNET CONNECTIVITY in CR - 2010

ALL edu-centers connected with 10 GB - DWDM
8 international connections with 60 GB





MEFANET

MEDical FACulties – Educational NETWORK

1LFUK	2LFUK	3LFUK	LFP	LFHK	LFUP	LFMU	LFUKB	JLFM	LFPJS
4099	1501	1420	1814	1699	4201	1531	3359	1688	1524

Total: 25,000 students at 10 faculties

MEFANET - Network of educational portals

- ◆ Central gateway
- ◆ 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 UK
in Hradec Králové

Medical Faculty Palacky's
University in Olomouc

Medical Faculty Masaryk's
University in Brno

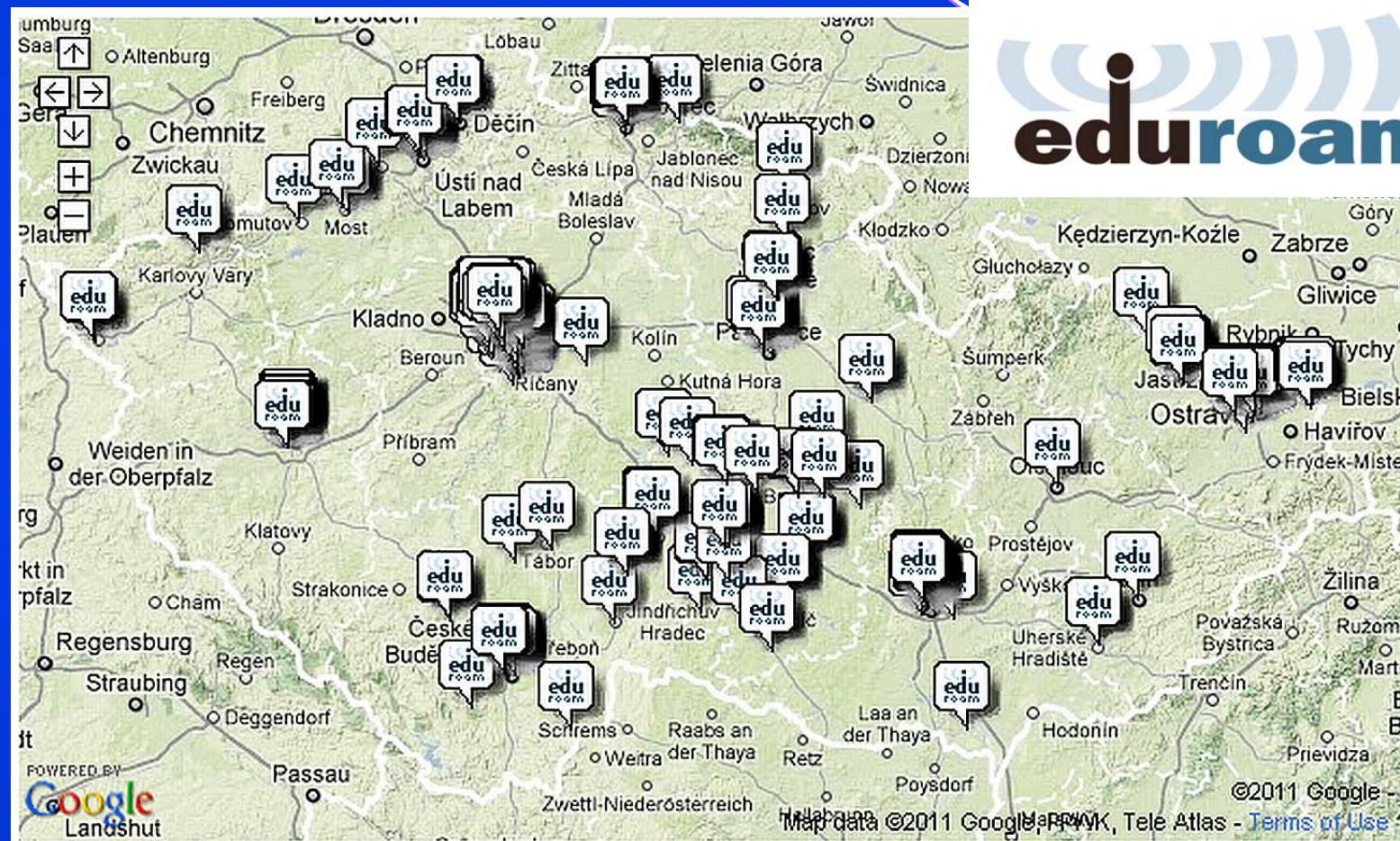
Jessenius's Medical Faculty UK
in Martin

Medical Faculty Pavel Jozef Šafárik's
University in Košice

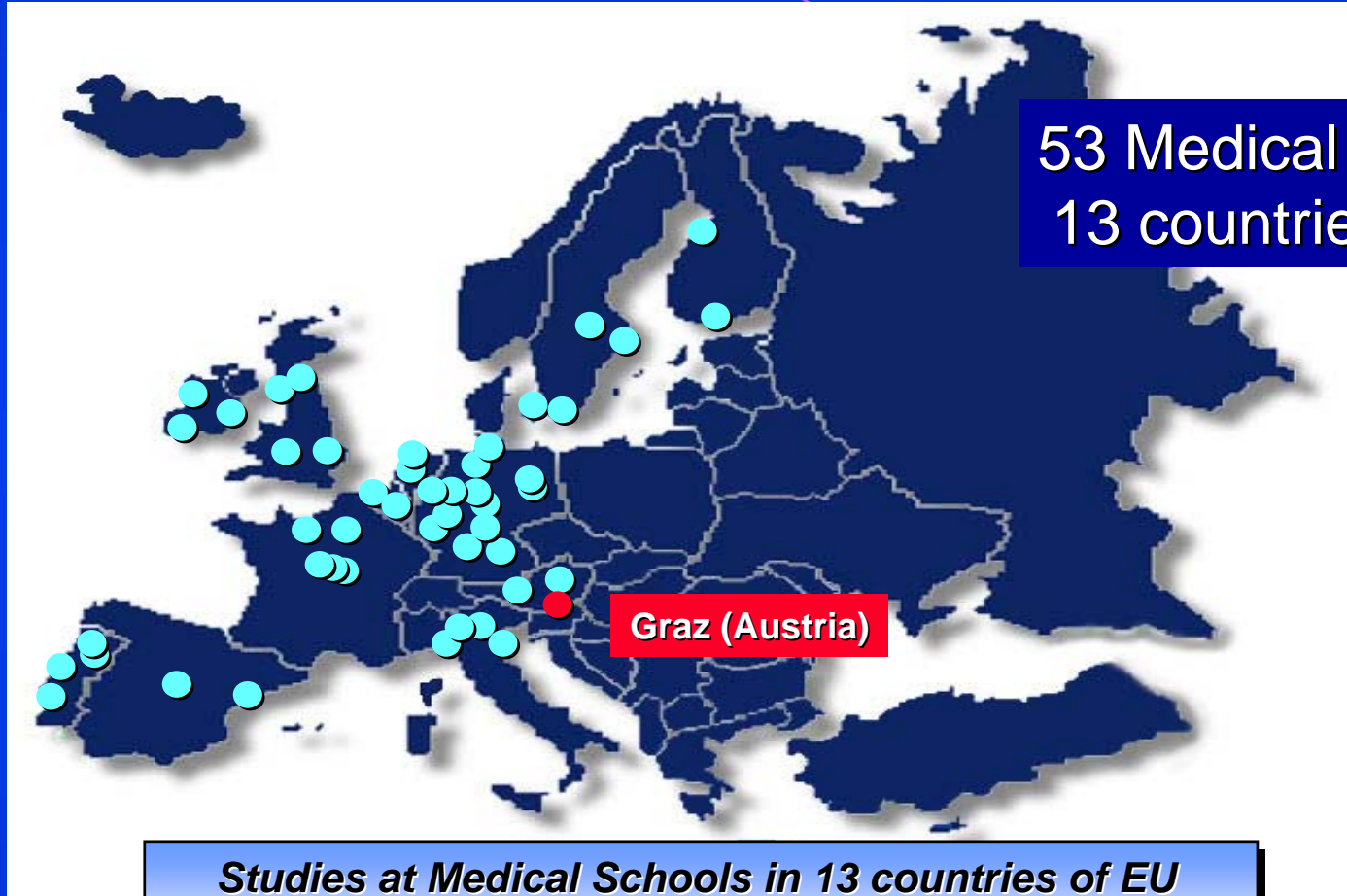
Medical Faculty Comenius
University in Bratislava

EDUROAM - WiFi - CONNECTIVITY in CR

452 WiFi EDUROAM CONNECTED CENTERS



eLEARNING - EU MEDICAL SCHOOLS



*Studies at Medical Schools in 13 countries of EU
and teaching of biochemistry and clinical
biochemistry Štern P., Trnková B., Šebesta I., Zima T.
Klin. Biochem. Metab., 2007, 15/ 3, 138–144*

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Working Group on Internet - Distance Learning

Educational Resource Database - History

- July 2006: Syllabus Project Summary
Syllabus 25 topics, with 110 subtopics
- September 2007: Database structure finalized
website URL, title, topics, annotation, keywords, date of last actualization, type of publication, accreditation of website
- C-ECD members and corresponding members prepared list of more than 300 websites described all database fields
- June 2008: Educational database of C-ECD available on-line

Selected Modern Curricula and Training Program

SELECTED MODERN CURRICULA AND TRAINING PROGRAM REQUIREMENTS FOR TRAINING IN CLINICAL CHEMISTRY AND MEDICAL BIOCHEMISTRY

Updated January 2010

Lynn C. Allen

Former Chair, IFCC Committee on Education and Curriculum Development (C-ECD)

Division of Clinical Biochemistry, Department of Laboratory Medicine and Pathobiology,
University of Toronto, Toronto ON, Canada M5G 1L5

Introduction

Syllabuses of study and curriculum requirements in clinical chemistry and in medical specialties of laboratory medicine from a number of professional associations and accrediting / licensing bodies have been compiled in this document. The intent of this article is to assist individuals to gain insight into modern curricula by providing examples from a number of countries, and to provide this information electronically for easy access. It is not the intent of this article to offer an evaluation of these curricula.

These documents
compare
medical
the review

➤ "Selected Modern Curricula and Training Program
Requirements for Training in Clinical Chemistry and
Medical Biochemistry"

➤ updated January 2010

➤ prepared by Lynn C. Allen, C-ECD Former Chair

Educational Resource Database

- Aims - IFCC recommended educational resources
- Prepared by contributors to Syllabus Project and C-ECD members: Lynn C. Allen, Nilda E. Fink, Dubravka Juretic, Petr Kocna, Rossa Chiu, Eser Sozmen, Annayya Aroor, Rita Paroni, Hideo Sakamoto, Jelena Storozenko, Montserrat Blanes González, Dolores Balsells Rosello, Stella Raymondo, Hoang Van Son, Mariam Klouche
- Visitors could search database by keywords, annotation text and other database fields (actualization date, type of presentation, specific accreditations, type of courses, with/without assessment, tuition fee, language and other fields).

IFCC Educational Resource Database

- 254 educational resources
- checked for availability in February 2010

Web link:	From chemistry to biochemistry			WWW LINK
Annotation	Hypertext oriented distant education of chemistry - biochemistry in 24 chapters, PowerPoint presentations, notes and comments			
KeyWords	Chemistry: Matter and Measurement, Atoms, Molecules, and Ions, Formulas, Equations, and Moles, Reactions in Aqueous Solution, Periodicity and Atomic Structure, Ionic Bonds and Some Main-Group Chemistry, Covalent Bonds and Molecular Structure, Thermochemistry: Chemical Energy, Gases: Their Properties and Behavior, Liquids, Solids, and Phase Changes, Solutions and Their Properties, Chemical Kinetics, Chemical Equilibrium, Hydrogen, Oxygen, and Water, Acids and Bases, Applications of Aqueous Equilibria, Thermodynamics: Entropy, Free Energy, and Equilibrium, Electrochemistry, The Main-Group Elements, Transition Elements and Coordination Chemistry, Metals and Solid-State Materials, Nuclear Chemistry, Organic Chemistry, Biochemistry			KEYWORDS
Type of publication	Lecture, text, notes	Date of publication	2004	
Accreditaion		View full record data	View It	
Web link:	Biochemical Theory - Steve Science			
Annotation	Hypertext lectures of chemical and biochemical principles, pH, enzymes, DNA, proteins, lipids, genes, chromatography and more others. Lectures are finished with short tests.			ANNOTATION
KeyWords	Acids, bases and pH, Atomic structure, Biochemical nomenclature, Biotransformation, Carbohydrates, Cell communication, Cell cycle, Chromatography and electrophoresis, DNA replication, Electron microscopy, Enzymes, Genetics, Lipids and membranes, Molecular biology,			
Type of publication	Lecture, text, notes	Date of publication	2007	
Accreditaion		View full record data	View	ALL DATA
Web link:	Lactose Intolerance - eMedicine			


Educational Resource Database

IFCC Internet (web) educational resources for distant education

Last updated: May 5, 2008

Visitors page

International Federation of Clinical Chemistry and Laboratory Medicine
Education and Management Division
Education and Curriculum Development (C-ECD)



Educational Resource Database is prepared and updated by team of C-ECD Committee members. Visitors could search database by keywords, annotation text and other database fields (actualization date, type of presentation, specific accreditations, type of courses, with/without assessment, tuition fee, languages and other fields).

Educational Database Search - by string or substring, or multiple strings of any database fields separated by comma (e.g. ePublic Merck, HON, MedEdPORTAL, pancreas ...).

Educational Resource Database is prepared from data authorised by contributors to Syllabus Project C-ECD: Lynn C. Allen, Nilda E. Fink, Dubravka Juretic, Petr Kocna, Rossa Chiu, Eser Sozmen, Annayya Aroor, Rita Paroni, Hideo Sakamoto, Jelena Storozenko, Montserrat Blanes González, Dolores Balsells Rosello, Stella Raymondo, Hoang Van Son.

Editors (administrators) page

EDITORS LOGIN

Done

<http://eduweb.virt.cz>

C-ECD Database Visitors 2011

	Country	Visitors
1	numeric IP address	271
2	.net generic domain	86
3	Czech Republic	78
4	.com generic domain	54
5	Italy	29
6	United Kingdom	21
7	Spain	17
8	France	15
9	Poland	14
10	Argentina	13
11	Australia	13
12	not defined	11
13	Turkey	11
14	.edu generic domain	10
15	Canada	10
16	Germany	10
17	Greece	9
18	India	9
19	Brazil	8
20	Croatia/Hrvatska	8
21	Sweden	8
22	Saudi Arabia	7
23	Mexico	6
24	Romania	6
25	Netherlands	5
26	Austria	4
27	Belgium	4
28	Colombia	4
29	Peru	4
30	Russian Federation	4

**2053 visitors
up to 5/2011
from 89 countries**

INTERNET RESOURCES SEARCHING



www.google.com
search.yahoo.com
www.ncbi.nlm.nih.gov/pubmed
www.scirus.com
eduweb.virt.cz

"colorectal cancer screening"
 "colorectal cancer screening"
 "colorectal cancer screening"
 "colorectal cancer screening"
 "colorectal cancer screening"

Google	215,000
Yahoo	960,000
PubMed	2,155
Scirus	85,111
IFCC-ECD	2

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2nd. IFCC SURVEY 2010

International Federation of Clinical Chemistry and Laboratory Medicine
Education and Management Division
Education and Curriculum Development (C-ECD)



Survey from the IFCC Education and Management Division Committee on Education and Curriculum Development (IFCC C-ECD)

The IFCC Committee on Education and Curriculum Development is attempting to assess the needs of its member societies for curriculum development and continuing education. We want to ask some questions on website education, eLearning and distant education. We would greatly appreciate it if you could forward this survey to the appropriate individual to complete if you are not that person (your Education Committee, University program chairpersons, etc.). Thanks very much for your kind reply.

National Society:

Associate Representative/Member to Committee on Education and Curriculum Development (If one has been appointed)

Please write your Email for communication with IFCC C-ECD committee. :

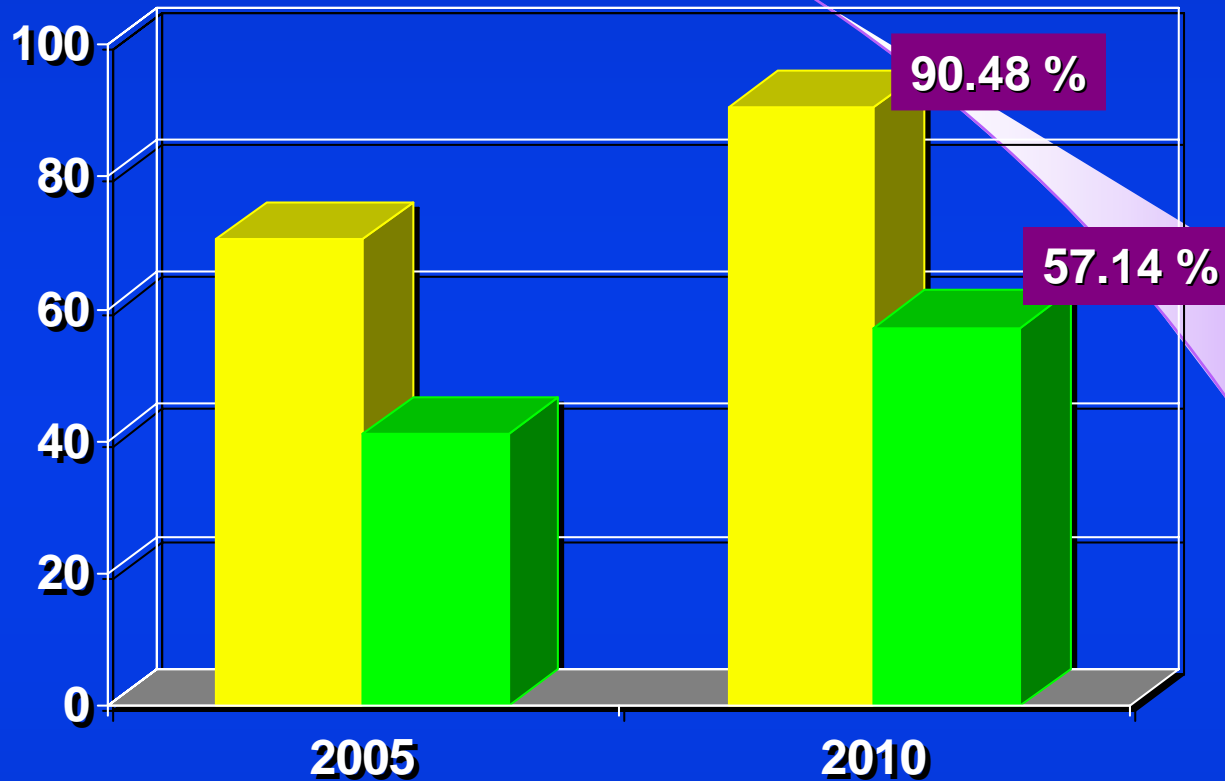
Has your Society its own website on the Internet?

☐ YES ☒ NO

Is part of your website devoted to "Education"?:

☐ YES ☒ NO

2nd. IFCC SURVEY 2010



NATIONAL SOCIETY WEBSITE
EDUCATIONAL PART OF WEBSITE

2nd. IFCC SURVEY 2010

- 42 responded societies of Clinical Biochemistry
- 38 societies with Website on the Internet (90,48%)
- 24 societies with Educational part of website (57,14%)

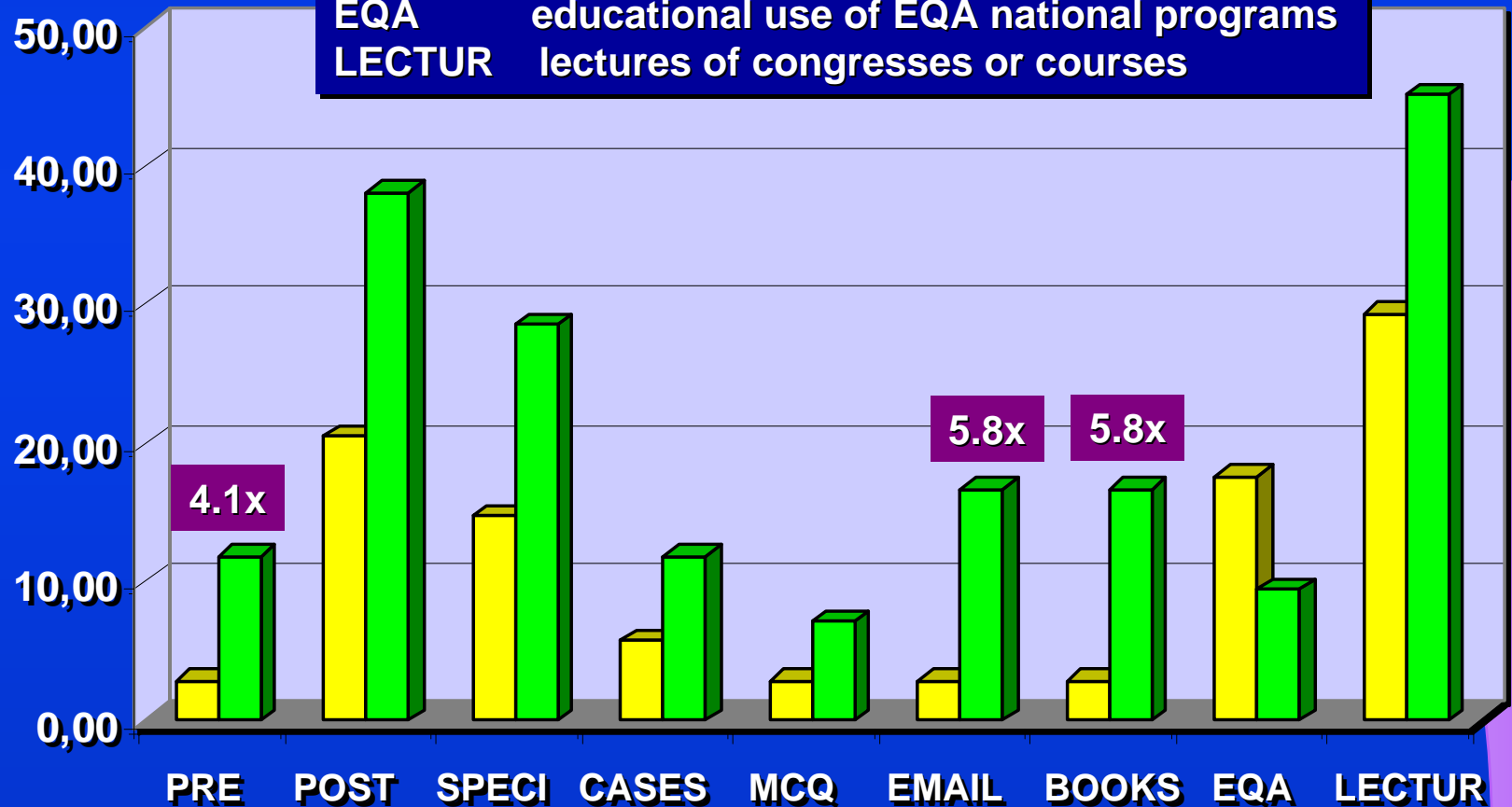
WEB BASED EDUCATION

in 2005

in 2010

undergraduate study program in CBLM	2.9 %	11.9 %
postgraduate study program in CBLM	20.5 %	38.1 %
program of specialisation in CBLM	14.7 %	28.5 %
clinical cases	5.8 %	11.9 %
multiple choice questions	2.9 %	7.1 %
e-mail teaching communication	2.9 %	16.7 %
electronic books	2.9 %	16.7 %
educational use of EQA national programs	17.6 %	9.5 %
lectures of congresses or courses	29.4 %	45.2 %

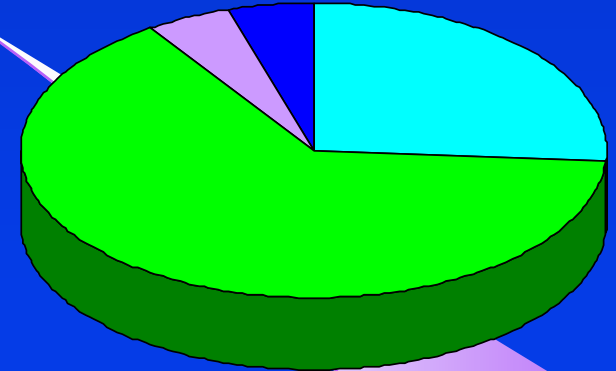
PRE undergraduate study program in CBLM
 POST postgraduate study program in CBLM
 SPECI program of specialisation in CBLM
 CASES clinical cases
 MCQ multiple choice questions
 EMAIL e-mail teaching communication
 BOOKS electronic books
 EQA educational use of EQA national programs
 LECTUR lectures of congresses or courses



2nd. IFCC SURVEY 2010

Resource language

- 64.2 % English language
- 26.2 % Both - English + National language



Unify educational resource

Do you think that it would be useful unify educational presentations among the IFCC members?

Most national societies, 76.2% (32 of 42), preferred a unified IFCC educational strategy

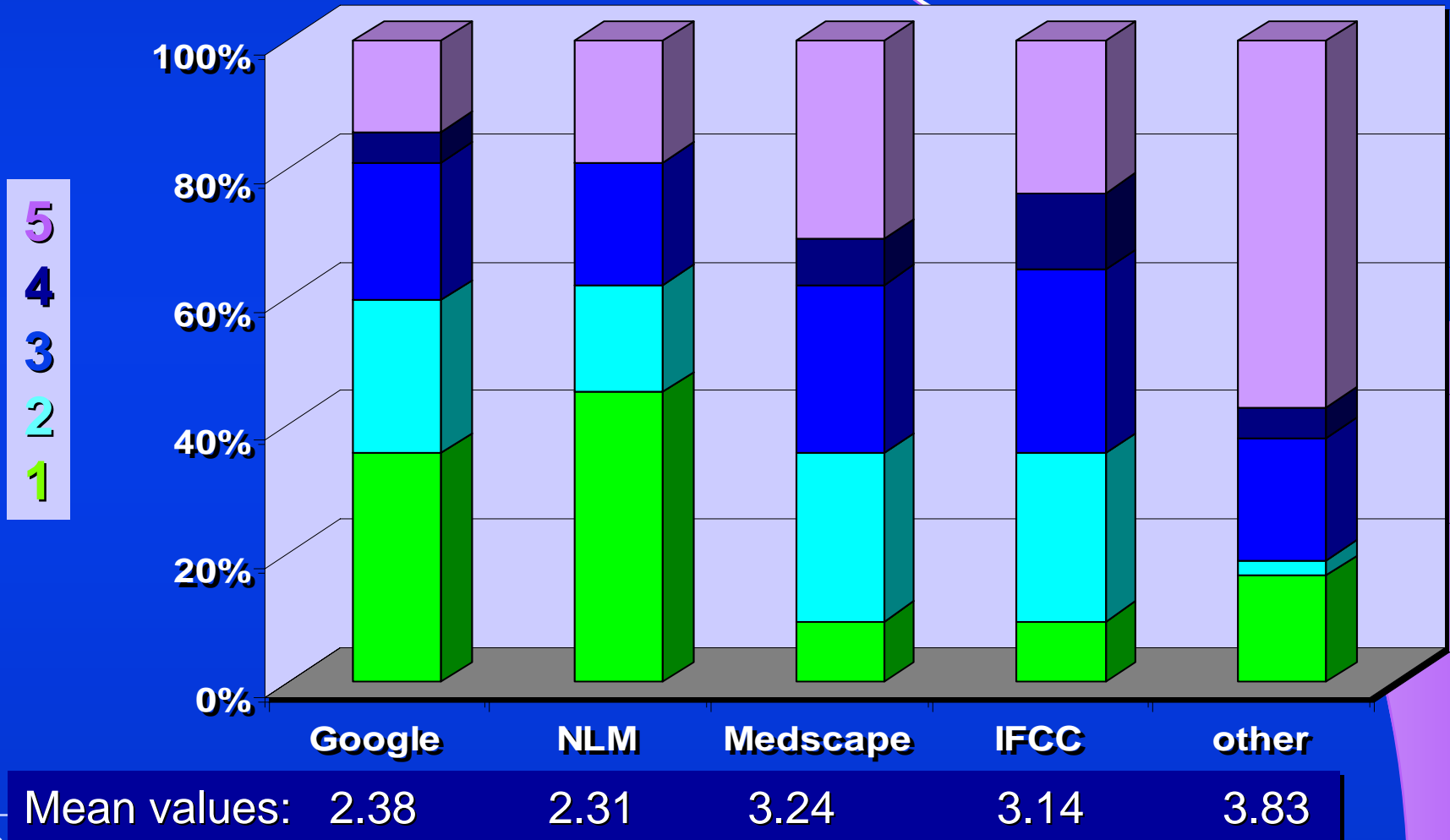
IFCC educational credits

What do you think about IFCC educational credits unified for all countries?

IFCC educational credits marked as *good - great - important - interesting idea* 42.8% (15 of 42)

INTERNET - WEB BASED RESOURCES

Importance - marking: (1-Very important ... 5-Useless)



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- ❑ **WG-IDL Perspectives**

Working Group on Internet - Distance Learning

C-ECD Corresponding members world distribution (2010)



**invitation to be members of the
WG-IDL - 2011**

CPD: WG-IDL members

- might be invited to be joined to WG-IDL projects
- may promote educational database and help us with updating
- may promote IFCC educational activities to national societies web sites
- could send us new resources to be added to educational database

➤ development of one IFCC educational/publication database

**eLearning 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. (1.1MB)

<http://www.masie.com/masie/researchreports/elearning0700nate2.pdf>



THANK YOU