

# **IAA study group 2.8 on “e-learning in space life sciences”**

Chrysoula Kourtidou-Papadeli  
M section III

Gerda Horneck, M section III

Panagiotis Bamidis CM section III

# Overall goals of the study group

- To promote cross-disciplinary collaboration in space medicine
- To report on (electronic) educational activities occurring around the globe in this scientific area
- To facilitate the utilization of contemporary platforms/environments for e-learning deployment
- To spread experiences related to conformance with educational standards
- To facilitate the e-exchange of educational digital material among educators
- To experiment with the implementation of digital copyright

# Intermediate Goals

- To conduct a survey on current use of educational digital material within associated Institutions and IAA members
- To collect all the above information in a common/shared educational environment
- To split into various thematic areas and build cross-linkages/connections
- To enable the uploading of material in the various thematic areas
- To enable the registration of interested parties (e.g. other educators, students)
- To standardize the educational material with the use of educational standards (like SCORM, HealthCare LOM)
- To experiment with the implementation of digital copyright (Creative Commons)
- To enable the exchange of educational material among educators given certain copyright schemes

# Technical conditions for the development of web-based courses

- Various educational platforms support web-based courses and perform as Learning Management Systems (LMS) that enable the management of e-learning courses
- LMS standards are used to ensure interoperability and transfer of courses between platforms.
- The Sharable Content Object Reference Model (SCORM) by ADL is a standard that adopts specific requirements to enable interoperability, accessibility, reusability, sequencing between learning objects.
- SCORM is embraced by a large number of institutions and corporations

# *e-Learning Environments*

- Student-centred teaching plan
- Personal data protection
- 3 users:
  - User-Student
  - User-Teacher
  - Administrator
- Learning methods:
  - self-directed
  - *Asynchronous communication*
  - *Synchronous or Virtual Classroom*

# *Moodle: Modular Object-Oriented Dynamic Learning Environment*

## **21<sup>st</sup> Century Schools**



## **Social Software and e-Learning**



# ***Moodle Features***

- Open source
- Easy creation of courses from existing resources
- Course content which can be re-used with different learners, including content from other vendors (Blackboard, WebCT etc.)
- Enrollment and learner authentication which is simple yet secure
- Intuitive online learner and teacher management features
- An active support community to help solve problems and generate new ideas
- Affordability

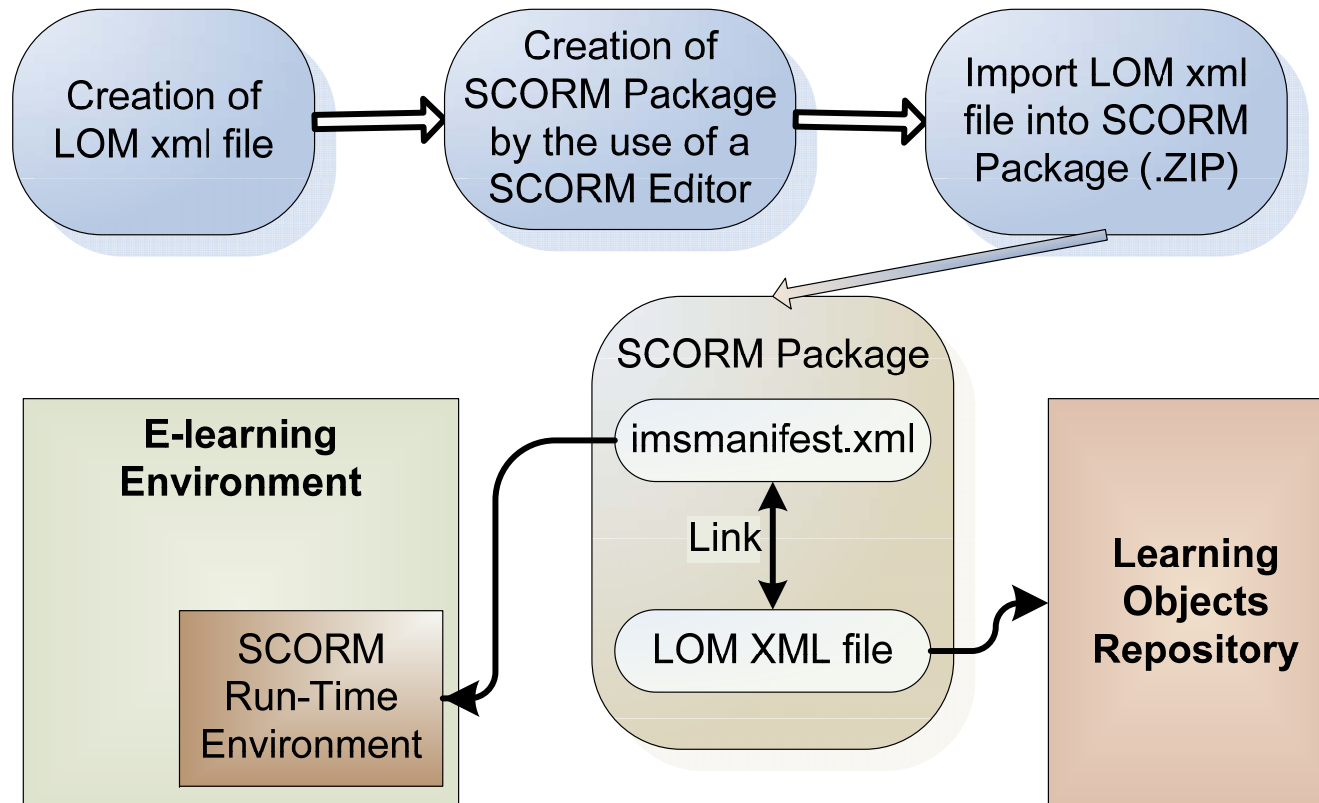


# SCORM

## (Sharable Content Object Reference Model)

- Consists of small, distributable learning entities (Sharable Content Objects (SCOs))
- SCO's are
  - Small in size
  - Reusable
  - Provide solid autonomous learning material but also in combination with others
- The combination of SCO's leads to:
  - An educational unit
  - A complete course
  - A training field
- The result is a “Package as one object” (a ZIP file)

# Our approach



## We can envisage the use of “Blogs” and “Wikis” ...

- A related Web information sharing technology is the ‘blog’. A blog (WeBLOG) is a Web site that contains dated entries in reverse chronological order (most recent first) about a particular topic.
- Functioning as an online journal, blogs can be written by one person or a group of contributors.
- Entries contain commentary and links to other Web sites, and images as well as a search facility may also be included.
- A wiki (from Hawaiian *wiki*, to hurry, swift) is a collaborative Web site whose content can be edited by anyone who has access to it.

# We may also envisage the use of “Podcasts” ...

- “Podcasting’s essence is about creating content (audio or video—*vodcasts*) for an audience that wants to listen when they want, where they want, and how they want.”\*
- Advantages:
  - Listen on your computer or download to portable MP3 players and listen on the move/anywhere (perfect for the busy health professional). But audio and video files can be large in size; users must have sufficient bandwidth to download them.
  - Support for auditory learners (it is claimed that the primary learning style in at least 30% of learners is auditory).

\* <http://en.wikipedia.org/wiki/Podcast>



# ... and why not the “Second Life” environment...



# Members of the study group

## CHAIRS

- Chrysoula Kourtidou-Papadeli (Greece)  
papadc@otenet.gr
- Gerda Horneck (Germany)  
gerda.horneck@dlr.de

## SECRETARY

- Panagiotis Bamidis (Greece)  
bamidis@med.auth.gr

## Members

- Melchor.J.Antunano (USA)
- Andrea Boese (DE)
- Vincent Boles (USA)
- Ludmila Buravkova (Russia)
- Jean-Michel Contant (France)
- Mary Anne Frey (USA)
- Claudie Haigneree (France)
- Nick Kanas (USA)
- Antonios Kyparos (Greece)
- Chiaki Mukai (Japan)
- Christos Papadelis (Italy)
- Thais Russomano (Brazil)
- Ashot Sargsyan ( )
- Nikolaos Spyrou (Greece)
- Patrik Sundblad ( )
- Joan Vernikos (USA)
- Dengyuan ZHUANG (China)

# Set up

- During the 1<sup>st</sup> year, the system was set up at the Lab of Medical Informatics, Aristotle University of Thessaloniki, Greece (hardware and software):
  - <http://aerospace.med.auth.gr>
  - A welcome page and then different courses may be chosen
  - Username and passwords can be set
  - Enrolment or free attendance may be enforced / allowed
  - Provide specific links to/from IAA

# Progress in past six months

- A literature review has been initiated already  
(P D Bamidis, S Konstantinidis, C L Papadelis, E Perantoni, C Styliadis, C Kourtidou-Papadeli, and C Pappas, “An e-learning platform for Aerospace Medicine”, Hippokratia. 2008 August; 12(Suppl 1): 15–22.)
- Opened an open source educational environment. (aerospace.med.auth.gr) .
- This will be facilitating temporarily both the “study group web site”, as well as, the “collaboration environment site”.
- Initial set up of course on “Pulmonary Medicine” which is acting like a demo is already available there.
- Instructions for login and use of the educational environment have been drafted and are being delivered to study group members.
- A survey questionnaire has been drafted (is being fine-tuned). The survey is web based using the open source tool “PHP-Surveyor” and is hosted upon:  
<http://www.edumed.gr/questionnaire/phpsurveyor//index.php?sid=24>

# Educational Environment

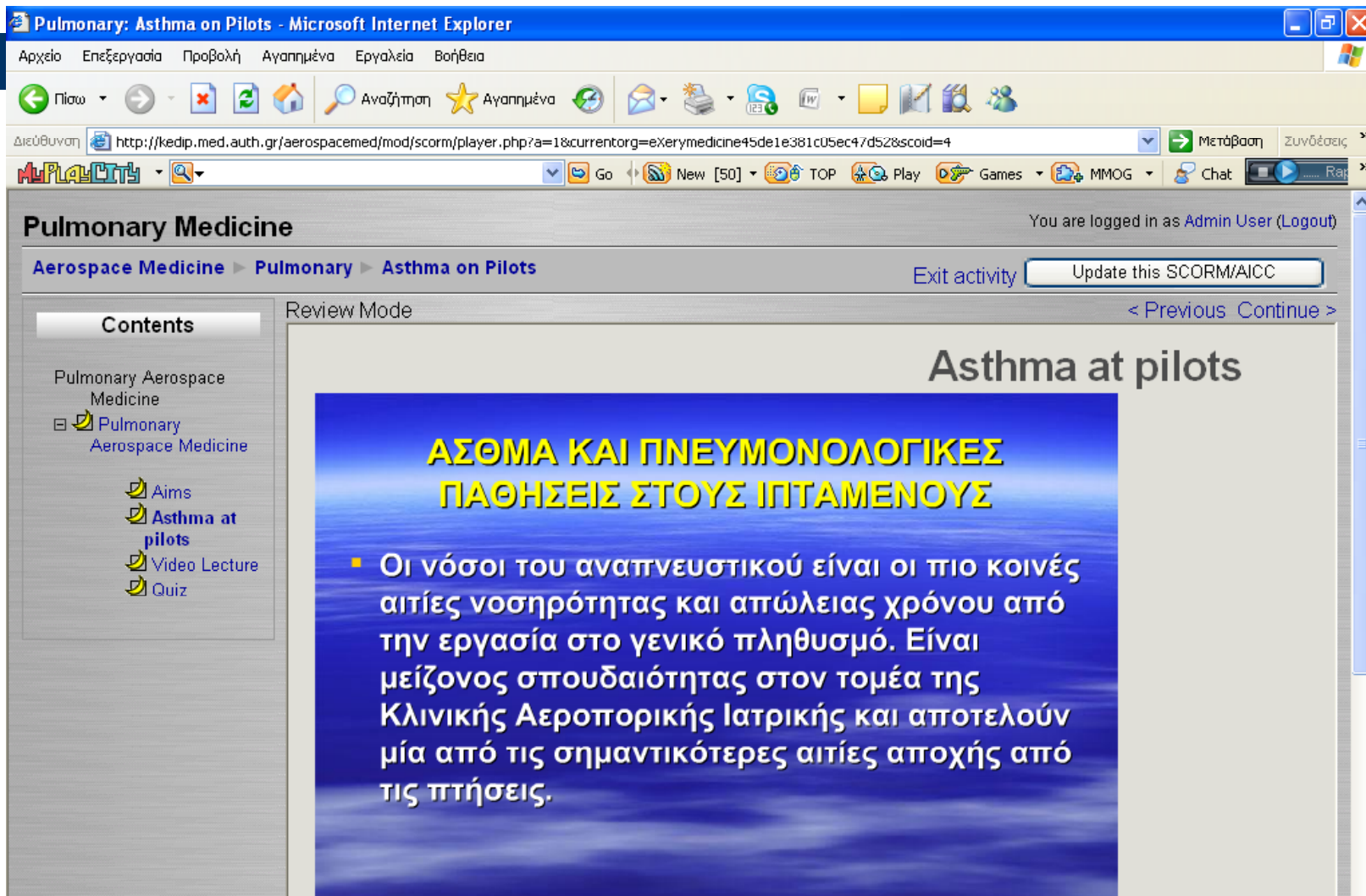
## <http://aerospace.med.auth.gr>

The screenshot shows a Microsoft Internet Explorer browser window displaying the website "Aerospace Medicine / IAA SG 28 'e-learning in Space Life Sciences'". The browser's address bar shows the URL "http://kedip.med.auth.gr/aerospacemed/". The website's header includes the title "Aerospace Medicine / IAA SG 28 'e-learning in Space Life Sciences'" and a user login status "You are logged in as Admin User (Logout)". A language dropdown menu is set to "English (en)".

The main content area is divided into several sections:

- Main Menu:** A list of links including "GREEK AEROSPACE MEDICAL ASSOCIATION & SPACE", "European Space Agency (ESA)", "Lab of Medical Informatics, Medical School, AUTH", and "Site news".
- Site Administration:** A list of administrative links such as "Notifications", "Users", "Courses", "Location", "Language", "Modules", "Security", "Appearance", "Front Page", "Server", "Networking", and "Reports".
- Available Courses:** A section titled "Available Courses" with a "Turn editing on" button. It lists two courses: "New Trends in Medical Education" and "Pulmonary Medicine".
- Medical School Advertisement:** A banner for the "Medical School" of the "Aristotle University of Thessaloniki", featuring an image of a stethoscope and a caduceus.
- Laboratory of Medical Informatics:** A section titled "Laboratory of Medical Informatics" with the text "An environment created for IAA study group 28". Below this, it identifies the "Scientific Responsible" as "IAA study group secretary Panagiotis D. Bamidis" and provides the email "bamidis at med.auth.gr".

# Example course available for “Pulmonary Medicine” (in Greek)



Pulmonary: Asthma on Pilots - Microsoft Internet Explorer

Αρχείο Επεξεργασία Προβολή Αγαπημένα Εργαλεία Βοήθεια

Πίσω Αναζήτηση Αγαπημένα

http://kedip.med.auth.gr/aerospacemed/mod/scorm/player.php?a=1&currentorg=eXerymedicine45de1e381c05ec47d528&scoid=4

Μετάβαση Συνδέσεις

Go New [50] TOP Play Games MMOG Chat

**Pulmonary Medicine** You are logged in as Admin User (Logout)

Aerospace Medicine ► Pulmonary ► Asthma on Pilots Exit activity Update this SCORM/AICC

Review Mode < Previous Continue >

**Contents**

- Pulmonary Aerospace Medicine
- ☑ Pulmonary Aerospace Medicine
  - Aims
  - Asthma at pilots**
  - Video Lecture
  - Quiz

## Asthma at pilots

### ΑΣΘΜΑ ΚΑΙ ΠΝΕΥΜΟΝΟΛΟΓΙΚΕΣ ΠΑΘΗΣΕΙΣ ΣΤΟΥΣ ΙΠΤΑΜΕΝΟΥΣ

- Οι νόσοι του αναπνευστικού είναι οι πιο κοινές αιτίες νοσηρότητας και απώλειας χρόνου από την εργασία στο γενικό πληθυσμό. Είναι μείζονος σπουδαιότητας στον τομέα της Κλινικής Αεροπορικής Ιατρικής και αποτελούν μία από τις σημαντικότερες αιτίες αποχής από τις πτήσεις.

# IAA SG2.8 Web Site News space: acts as collaboration space for group members

The image displays a screenshot of the Aerospace Medicine website's news space, which functions as a collaboration space for group members. The interface is shown in a Microsoft Internet Explorer browser window. The main content area features a forum discussion titled "IAA SG28, data collection form is drafted". The discussion includes a post by "Admin User" dated Tuesday, 17 March 2009, 07:56 AM, which describes the form and its purpose. The form is titled "IAA\_Table\_ModuleDetails\_AUTH\_Example\_EducationalTechnology.doc" and is intended for collecting educational material. The website also includes a "Main Menu" with links to "GREEK AEROSPACE MEDICAL ASSOCIATION & SPACE", "European Space Agency (ESA)", "Lab of Medical Informatics", "Medical School, AUTH", and "Site news". A "Site Administration" section is visible, listing various site settings such as "Notifications", "Users", "Courses", "Location", "Language", "Modules", "Security", "Appearance", "Front Page", "Server", "Networking", "Reports", and "Miscellaneous". The browser's address bar shows the URL "http://kedip.med.auth.gr/aerospacemed/mod/forum/discuss.php?id=6". The Windows taskbar at the bottom indicates the system time as 8:04 pm.

**Aerospace Medicine**

**IAA SG28, survey**

by Admin User - Tuesday, 17 March 2009, 07:57 AM

A survey for the IAA study group is being drafted. It will be available once finalised in :  
<http://www.edumed.gr/questionnaire/phpsurveyor/index.php?sid=24>

Edit | Delete | Reply

**IAA SG28, data collection form is drafted**

by Admin User - Tuesday, 17 March 2009, 07:56 AM

[IAA\\_Table\\_ModuleDetails\\_AUTH\\_Example\\_EducationalTechnology.doc](#)

The form uploaded here will be used as a means to properly collect already available educational material that may be utilised then as modules/courses in the educational environment.

This form is an example of a module on "New Trends on Educational Technology" offered by AUTH (PD Bamidis). Please, download this form, edit and update in order to reflect details for your educational material.

Edit | Delete | Reply

You are logged in as Admin User (Logout)

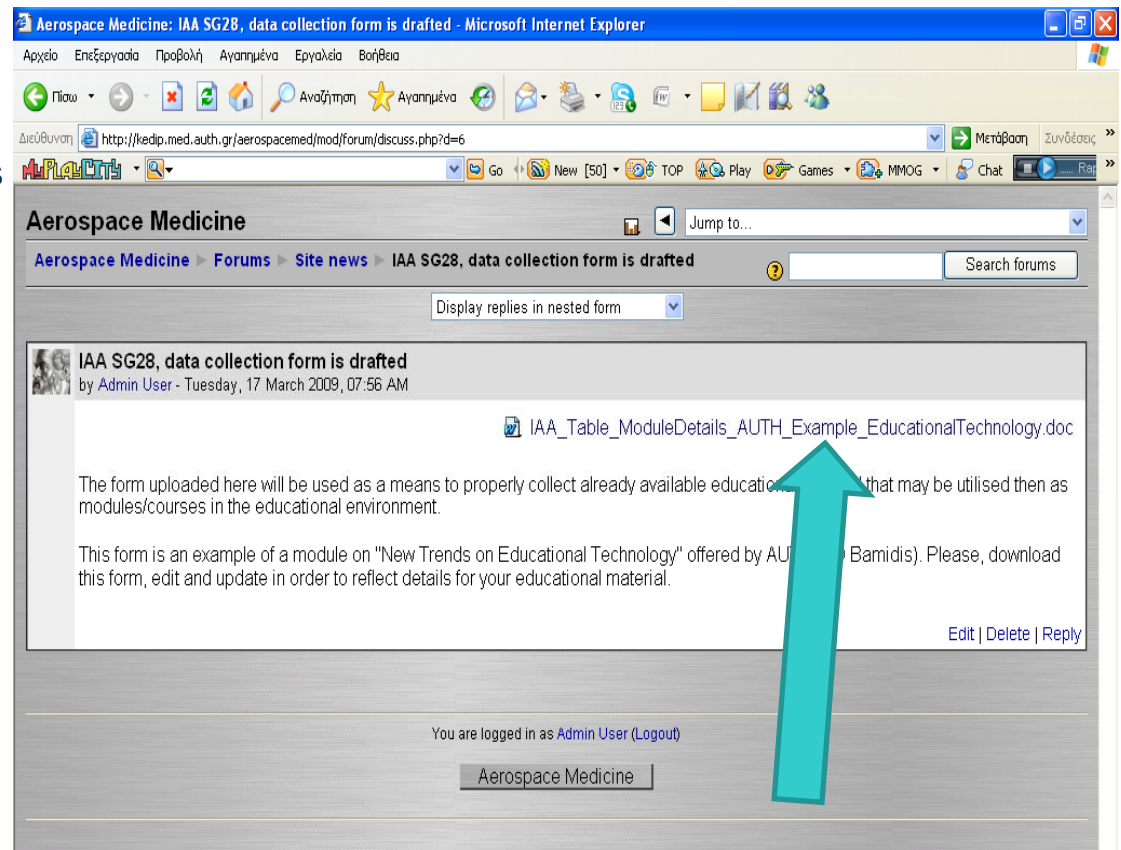
Aerospace Medicine

Moodle Docs for this page

# IAA SG2.8, data collection form

A template was made to facilitate the data collection re the courses/modules

- creator
- copyright
- languages of instruction
- educational goals and objectives
- educational context
- learning outcomes
- content outline
- keywords
- teaching methods & strategies
- type
- instructions for use
- instructions hours / workload
- indicative bibliography
- life cycle



The screenshot shows a Microsoft Internet Explorer browser window with the following details:

- Browser Title:** Aerospace Medicine: IAA SG28, data collection form is drafted - Microsoft Internet Explorer
- Address Bar:** http://kedip.med.auth.gr/aerospacemed/mod/forum/discuss.php?d=6
- Page Title:** Aerospace Medicine
- Breadcrumbs:** Aerospace Medicine > Forums > Site news > IAA SG28, data collection form is drafted
- Post Title:** IAA SG28, data collection form is drafted
- Author:** Admin User - Tuesday, 17 March 2009, 07:56 AM
- Attachment:** IAA\_Table\_ModuleDetails\_AUTH\_Example\_EducationalTechnology.doc
- Text:**

The form uploaded here will be used as a means to properly collect already available educational material that may be utilised then as modules/courses in the educational environment.

This form is an example of a module on "New Trends on Educational Technology" offered by AU (Prof. Dr. Barmidis). Please, download this form, edit and update in order to reflect details for your educational material.
- Actions:** Edit | Delete | Reply
- Footer:** You are logged in as Admin User (Logout) and Aerospace Medicine

A large red arrow points from the bottom right towards the attachment and text area of the forum post.

# Questionnaire - survey

PHP Surveyor - Microsoft Internet Explorer

Αρχείο Επεξεργασία Προβολή Αγαπημένα Εργαλεία Βοήθεια

http://www.edumed.gr/questionnaire/phpsurveyor/admin/dataentry.php?sid=24

## PHP Surveyor

**Browse Responses**

**Data Entry**

**Aerospace Survey**  
A survey for the IAA study group (SG 2.8) on "e-learning in Space Life Sciences"  
**E-learning infrastructure**

1 **\*Institution Name, Department**

2 **\*Is there a Learning (course) Management System (LMS) software available in your institution**

[Only answer this if the following conditions are met:]  
-to question '2', you answered 'Yes'

2.1 **[Only answer this if the following conditions are met:] you answered 'Yes' in question '2'... Which is the LMS available and/or used at your Institute?**

- Moodle
- eClass
- Claroline
- Blackboard Academic Suite
- WebCT
- eXaCT
- ATutor
- Other

[Only answer this if the following conditions are met:]  
-to question '2', you answered 'Yes'

2.2 **What kind of features are available in your LCMS ?**

- Uploading of (file) resources (ppts, pdfs, etc)
- Chat between participants
- Class Wiki
- ...

Ολοκλήρωση

Internet

# Immediate and Future activities

- Finalise and complete the online survey
- Turn digital material into SCORM compliant material,
- Experiment with Creative Commons,
- Upload on e-learning space,
- Experiment with their interaction friendliness and easiness to use
- Fully report on each activity.

# Longer term goals

- Our target community is initially medical students, which can be extended in all science students, teachers, universities and medical colleges, medical associations and medical doctors, as well as researchers in space medicine, and space life sciences
- SG 2.8 secretary was awarded a European Project on “medical education content sharing” and achieved funding from the EU for the next 3 years.
- It is believed that there will be a chance, some of the achievements of this SG to be able to continue with partial funding from this project (which will be hopefully available to some extent to study group members – especially those related to medical education).

# mEducator: Multi-type Content Repurposing and Sharing in Medical Education

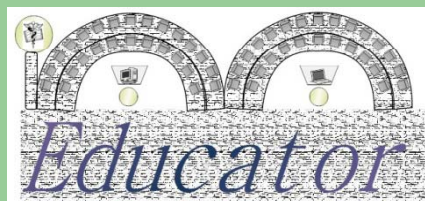
**Panos Bamidis**

Assist. Prof. Medical Education Informatics

ARISTOTLE UNIVERSITY OF THESSALONIKI  
Medical School

Lab of Medical Informatics  
Medical Education Office

[bamidis@med.auth.gr](mailto:bamidis@med.auth.gr)



# mEducator

- To be funded by the
  - **eContentplus 2008** programme
  - European Commission, Information Society and Media Directorate-General, Digital Content & Cognitive Systems
- Best Practice Network
- Duration 3 years
- Starting in 2009

# mEducator Partners

1	Aristotle University of Thessaloniki	GR	Coordinator, Technology provider, Content provider, User/Evaluation, Dissemination
2	University of Cyprus	CY	Technology Provider, Content provider, User/Evaluation, Dissemination
3	Democritus University of Thrace	GR	Content provider, Technology provider, User/Evaluation, Dissemination
4	SITUSI Limited	IR	Content provider, Technology provider, Dissemination
5	Technical Univ. of Cluj-Napoca	RO	Technology provider, Pedagogical expert
6	Université Nice Sophia Antipolis	FR	Content provider, User
7	Medical University Plovdiv	BG	Pedagogical expert, Content provider, User
8	Università degli studi di Catania	IT	Pedagogical expert, Content provider, User/Evaluation
9	University of Helsinki	FI	Pedagogical expert, Evaluation
10	St George's Hospital Medical School	UK	Standardisation Body Technology and Content Provider
11	Succubus Interactive	FR	Content and Technology Provider
12	The Open University	UK	Technology Provider
13	Coventry University	UK	Content provider, Technology provider
14	European Cervical Cancer Association	FR	User/Evaluation

# Questions and concerns ??

- Ultimate goal/focus of study group needs to be towards recommendations
- The study will not be bound to any tool/solution, but will focus on the international collection of “practice” and identify gaps, make recommendations
- There is a risk to “act locally”... Thus, SG2.8 will try to expand and involve as many “topic experts” as possible
- Thus, the survey will try to collect as much of this material and experience as possibly achievable

# Contacts

- **Gerda Horneck**
  - [gerda.horneck@dlr.de](mailto:gerda.horneck@dlr.de)
- **Chrysoula Kourtidou-Papadeli**
  - [papadc@otenet.gr](mailto:papadc@otenet.gr)
- **Panagiotis Bamidis**
  - [bamidis@med.auth.gr](mailto:bamidis@med.auth.gr)