

## Implementing e-learning at the University of Nicosia: Making it possible

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This practical paper reports on significant Learning Activity Management System (LAMS) work currently being undertaken at The University of Nicosia in Cyprus; a growing number of full e-courses have been, and are being, created using LAMS and a suite of specialized programs in order to provide an alternate and more convenient educational service for students. Critical administrative, organizational, personnel, pedagogical and technological issues have had to be addressed to support this important project. Some implications of the way students work online will be discussed, sample e-lecture materials will be presented, and suggestions for future technical development will be made. The paper concludes with the assertion that LAMS can be used to deliver local and international full e-learning courses effectively and inexpensively within a supportive and dynamic administrative and organizational super-structure.

### Overview of new e-learning courses

In summer 2009, after having trialled LAMS for one year, a decision was taken by the University of Nicosia to support student learning further by developing a number of full e-learning courses to be delivered using LAMS. It was recognised that a growing number of students were working part-time or full-time and it was felt that such students would be greatly assisted if some courses could be taken online. The institutional strategy implemented therefore involved: (1) setting up a project team<sup>1</sup>; (2) identifying undergraduate degree electives commonly taken by students; (3) sending a formal call from the President of the Council to lecturers teaching the electives enquiring whether they would be interested in developing an e-course elective; (4) developing full courses in the most practicable and visually-advanced way; (5) getting Senate approval to trial e-courses; (6) trialling and upgrading the e-courses

By summer 2010, the University of Nicosia LAMS project team had developed or were developing over twenty e-courses. Moreover it had embarked on developing a full *Association of Chartered Certified Accountants* (ACCA) e-programme or had suggested embarking on extensive and technologically innovative English-for-Speakers-of-Other-Languages (ESOL) ALTE level A1 and A2-B1 programmes. Three separate LAMS servers had been set up by May 2010: a student server (<http://lams.unic.ac.cy:8080/lams/>), a LAMS test server (<http://lamstest.unic.ac.cy:8080/lams/>) and a Professional Studies LAMS Server (<http://ps.unic.ac.cy:8080/lams/index.do>).

Figure 1 shows a screenshot of the re-faced main student LAMS server (<http://lams.unic.ac.cy:8080/lams/index.do>). The Webpage has two recorded student training videos<sup>2</sup>, an email helpdesk and a manned telephone helpdesk that is automatically re-directed to two BlackBerry mobile devices if calls are not taken. Two additional easy-to-remember URLs were also created for this page. (<http://www.online.unic.ac.cy> and <http://online.unic.ac.cy>). A Skype helpdesk had initially been set up, but as it had never been used by any student, it was removed.

<sup>1</sup> The project team comprised Dr Chris Alexander (Head of LAMS e-course development, LAMS system administrator, student/teacher trainer, student management team leader), three fully trained LAMS lab assistants under the supervision of the Head, Ms Anna Lazari, Director of the Centre for Life Long Learning, Dr Dmitry Apraksin, the Head of the Computer Centre and the President of the Council (Dr Nicos Peristianis)

<sup>2</sup> To view the videos go to the webpage on <http://lams.unic.ac.cy:8080/lams/index.do>



**Figure 1: Refaced main student LAMS page**

In Figure 2, a screenshot is presented of the current listing of undergraduate e-courses offered to resident local and international students. There is a wide range of disciplines available, for instance, e-courses include maths, accounting, philosophy, psychology, ESOL, cultural geography, and computing. Non-resident international students have also been targeted and a marketing strategy is now being developed to facilitate e-course delivery.

## Online Courses at the University of Nicosia Summer 1, summer 2 and FALL 2010

ACCT-110	Accounting I
BADM-231	Business Communications
COMP-150	Microcomputer Applications
COMP-151A	Fund. Conc. of Info. and Comp. Tech.
MATH-105	Intermediate Algebra
PHIL-120	Ethics
PSCI-101	American National Government
PSY-110	General Psychology I
TRVL-110	Geography of Travel & Tourism
TRVL-310	Cultural Geography
MKTG-291	Principles of Marketing (FALL to be confirmed)
EUS-201	European Geography
PSY-111	General Psychology II
IREL-361	Current European Issues
HOSP-100	Introduction to Hospitality Management (available in Fall)
PSY-335	Educational Psychology (available in Fall)
PSY-220A	Child & Adolescent Development (available in Fall)
BENG70	English Language Skills (non-resident Internationals only) (available in Fall)
BENG60	English for Beginner (non-resident Internationals only) (available in Fall)
HOSP-490	Intercultural Communication (available in Fall)
MIS-351	Information Systems Concepts (available in Fall to be confirmed)



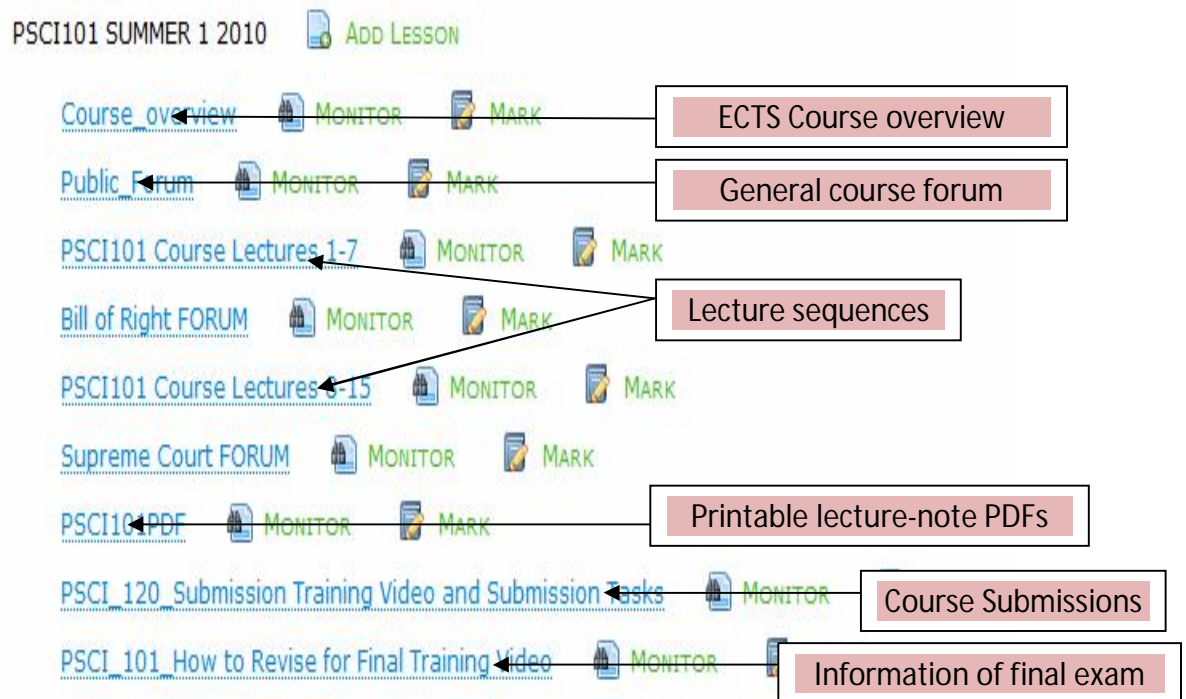
Dear Students! Please be informed that  
The University of Nicosia is offering the  
following courses online:

*Please ask your advisor for  
details or contact our Life Long  
Learning Department  
(tel. 22 841562)*

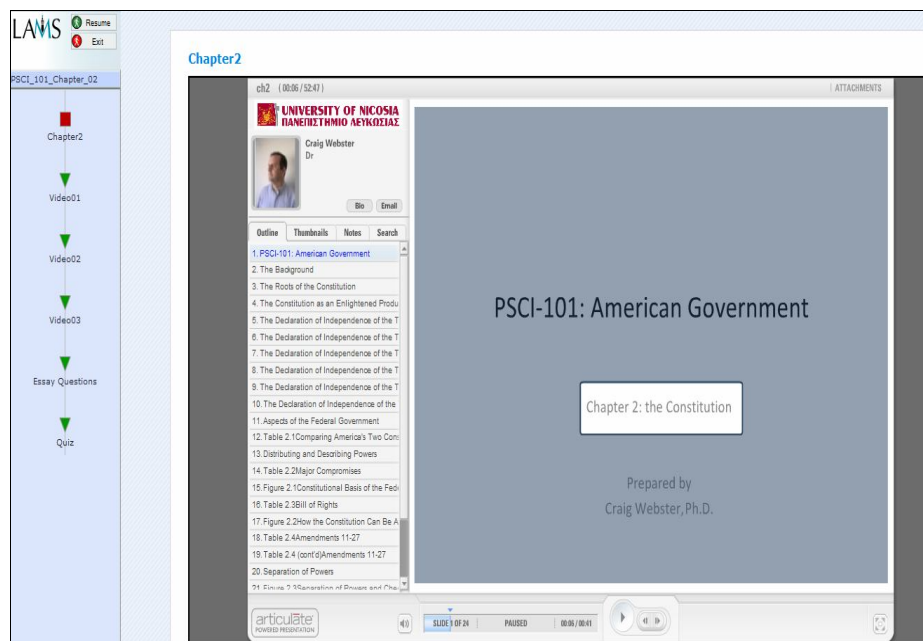
**Figure 2: A listing of current courses available to resident local and international students**

With regard to the basic building blocks of an e-course, an e-course usually comprised seven parts: (1) a printable course overview and a flash-based presentation from PowerPoint, recorded and annotated; (2) a general public course forum for exchange between lecturer and students; (3) recorded flash-based presentation lecture sequences with accompanying sequence tools; (4) course specific forums; (5) printable presentation PDFs in share resources tool; (6) video film on how to do course submissions and course submission tasks; (7) recorded flash-based presentation on how to revise for the final exam. All courses have an important and thorough written final paper or electronic final timed exam to be taken on site at the University of Nicosia or in an authorised testing centre abroad. Figure 3 provides a sample screenshot of a Political Science e-course offered in LAMS. In this screenshot these seven typical e-components are presented. In order for course assessment to be in line with University academic policy, assessment consisted of a minor weighting for completing all lectures and lecture related activities, a minor weighting for doing course submissions and a major weighting for the supervised final exam.

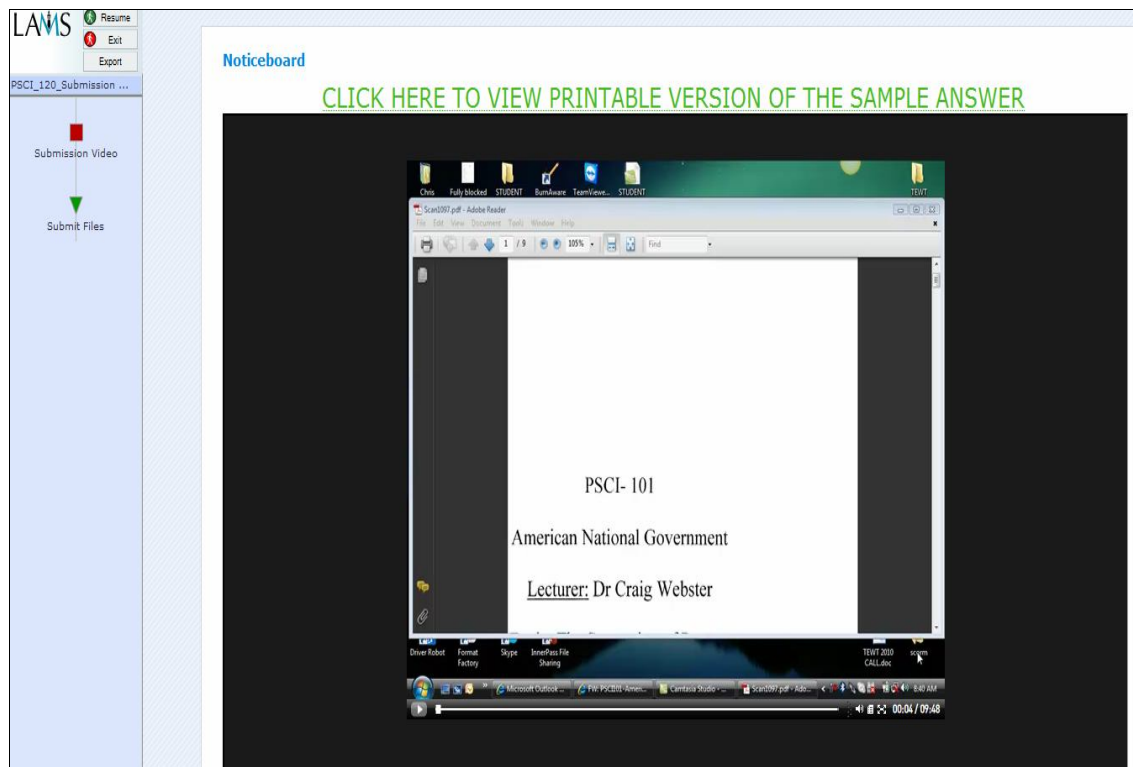
In figure 4 there is a screenshot of a recorded flash-based power-point presentation framed in a LAMS noticeboard tool. The lecture sequence also includes embedded videos in noticeboard tools, a Q/A tool and assessment tool tasks to check lecture comprehension; for more examples of Articulate flash presentation lectures used in this project see here. Figure 5 presents a screenshot of a framed Camtasia Studio (version 6) video in noticeboard explaining how students should do the course submission.



**Figure 3: A sample screenshot of a Political Science e-course offered in LAMS.**



**Figure 4: A flash-based power-point presentation framed in a LAMS noticeboard tool**



**Figure 5: Camtasia Studio video in noticeboard explaining course submission task**

### **Key additional software used and learning design issues**

The main software packages used in this project were Articulate Studio (Version 9) and Camtasia Studio (Versions 6 and 7). Articulate E-Learning Studio is a powerful integrated package that enables users to quickly create e-learning courses from PowerPoint and to develop high-quality interactive content, quizzes, assessments, and surveys. Camtasia Studio is a reliable screen recorder and editor for windows. However it was found that file sizes of published Articulate lectures were significantly smaller than published Camtasia screen-recorded lectures; Please note that this high-quality 25-minute fully edited Camtasia Studio 7 film is over 75MB in size, whereas [this](#) 52-minute Articulate lecture is only about 6 MB. As a result, to accommodate any bandwidth limitations locally and internationally, most e-learning content creation was undertaken in Articulate.

Figure 6 provides a screenshot of the Articulate Add-Ins Toolbar in PowerPoint and Figure 7 shows a screenshot of Camtasia Studio Editor Version 7



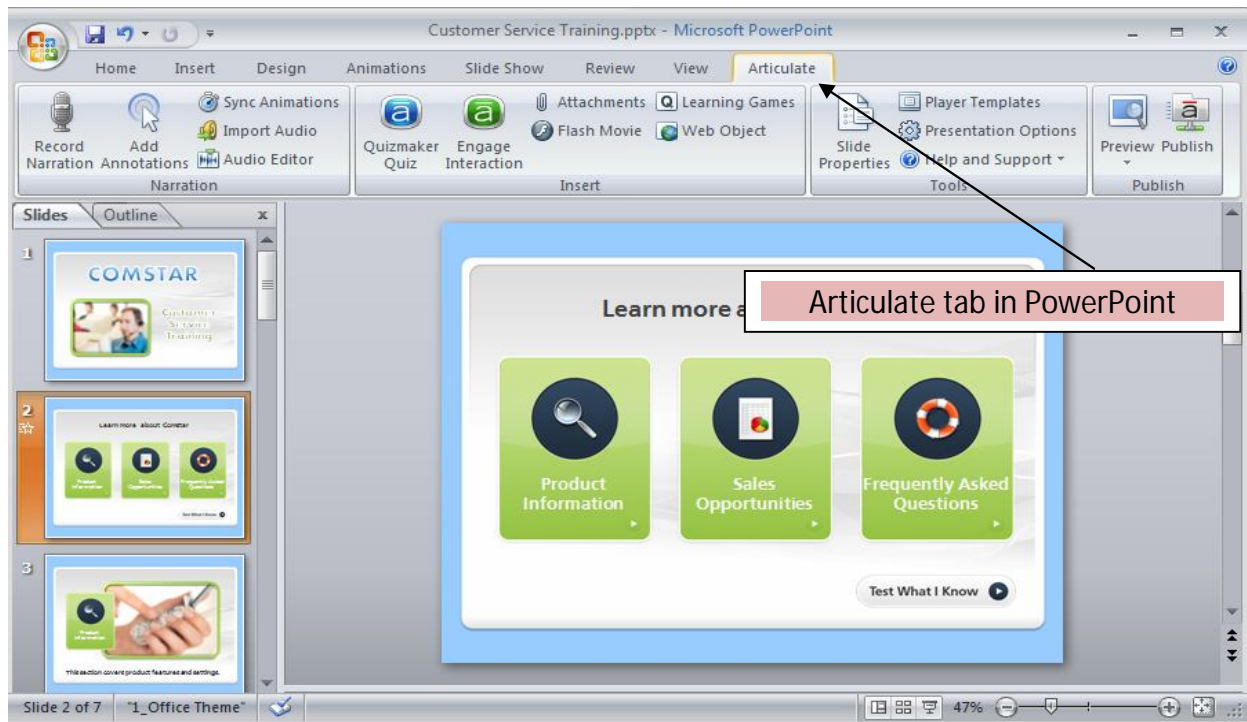


Figure 6: The Articulate Add-Ins toolbar in PowerPoint

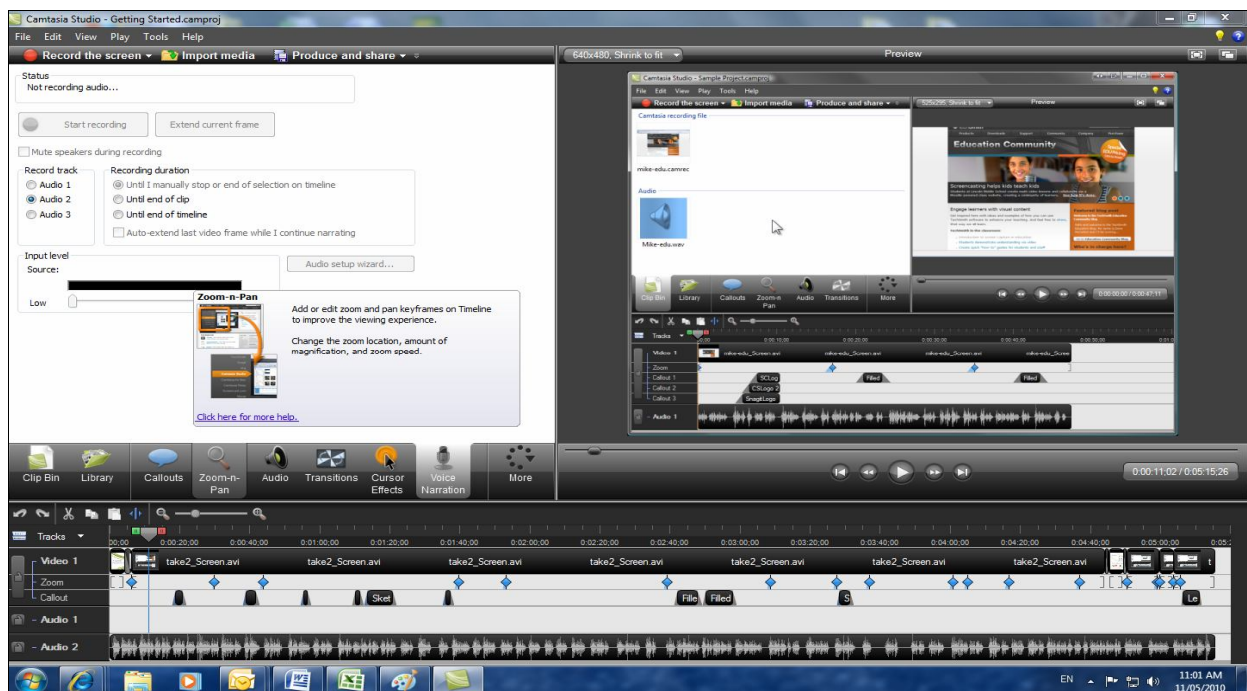


Figure 7: Camtasia Studio 7 Editor

Camtasia studio proved useful for preparing training videos for how to do online course submissions and sample final-exam-question training films. In Figures 8 and 9 there are some screenshots of how Camtasia Studio was utilised for supporting online submission work and final exam preparation.

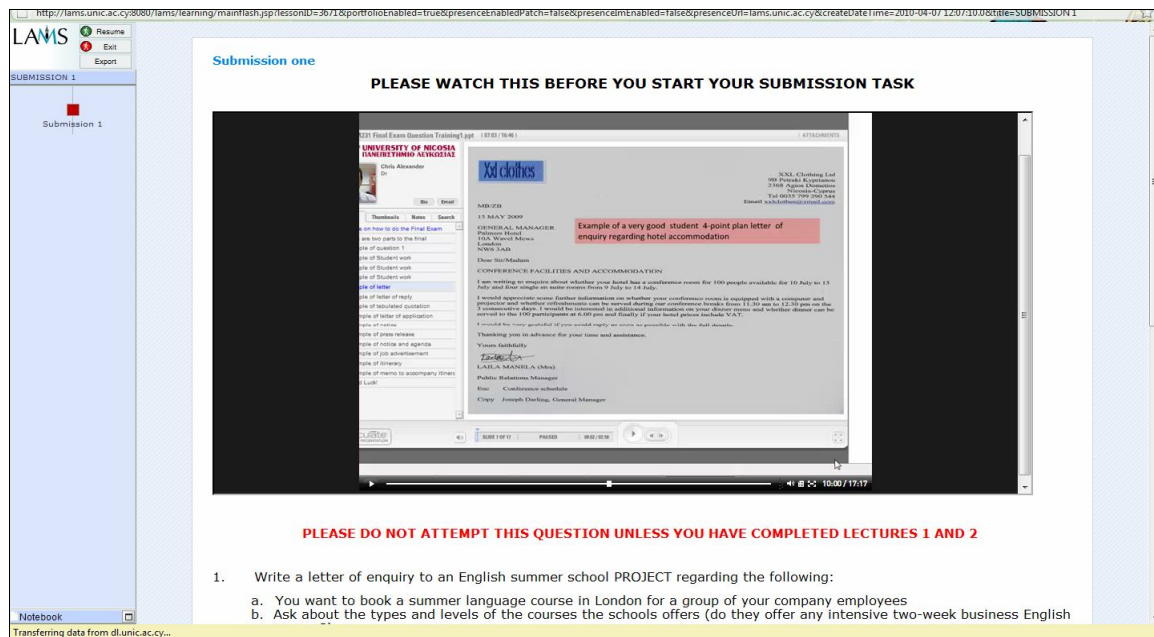


Figure 8: Camtasia Studio video being used to support Submit File tool

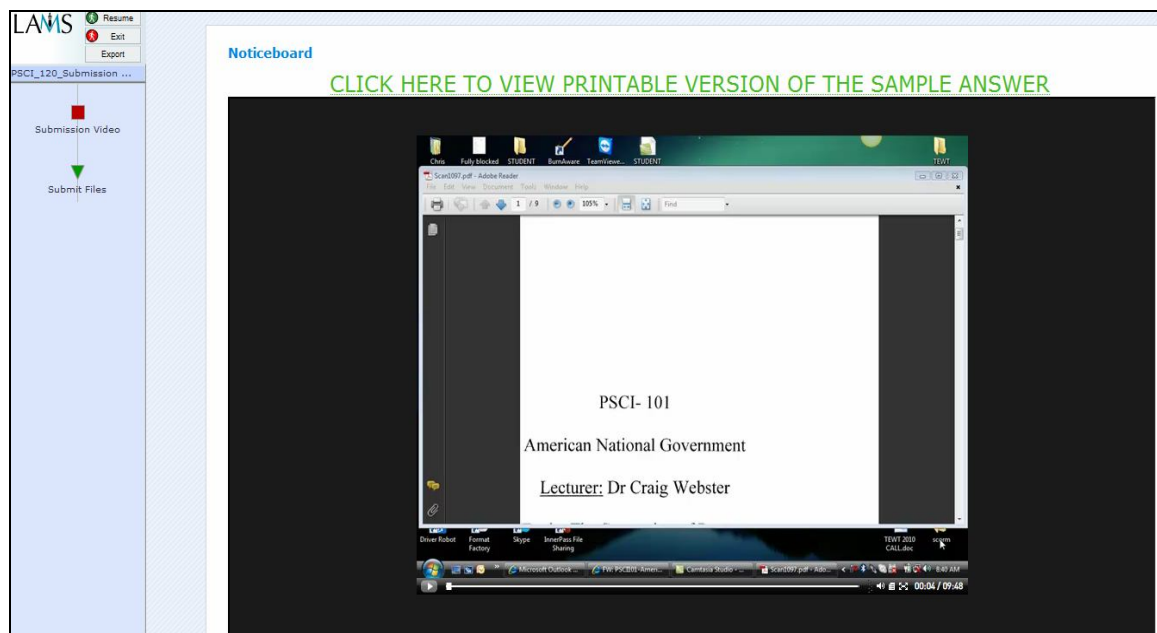
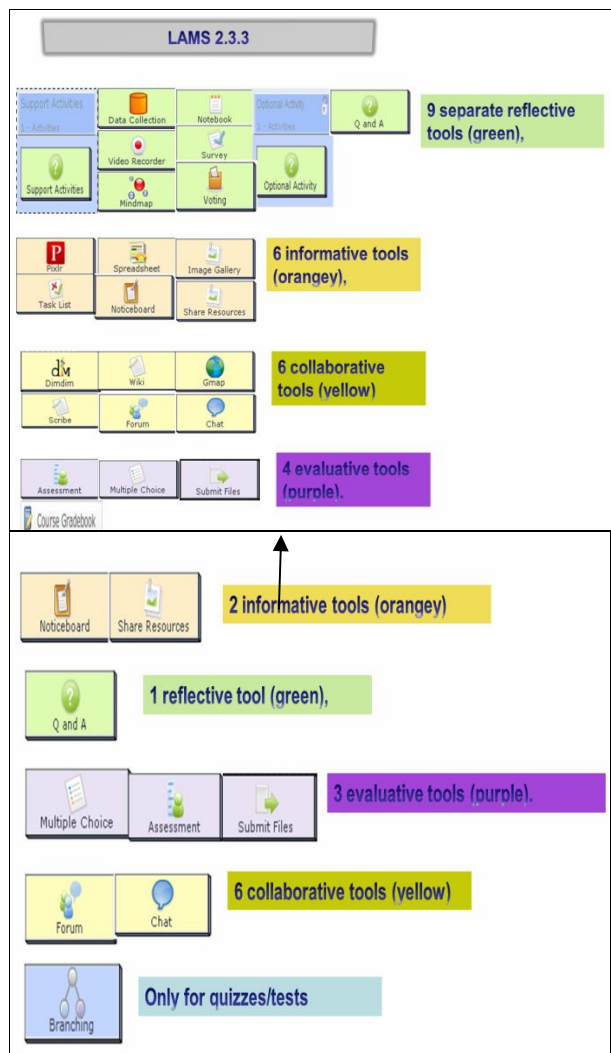


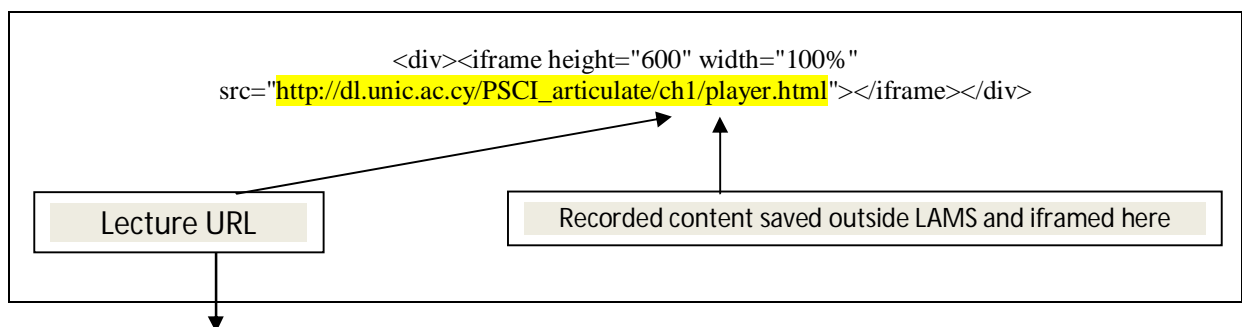
Figure 9: Camtasia Studio video being used to support final exam preparation

With regard to learning design issues, in spite of the fact that LAMS 2.3.3 has a wide range of authoring tools, only 9 tools were used (see Figure 10).

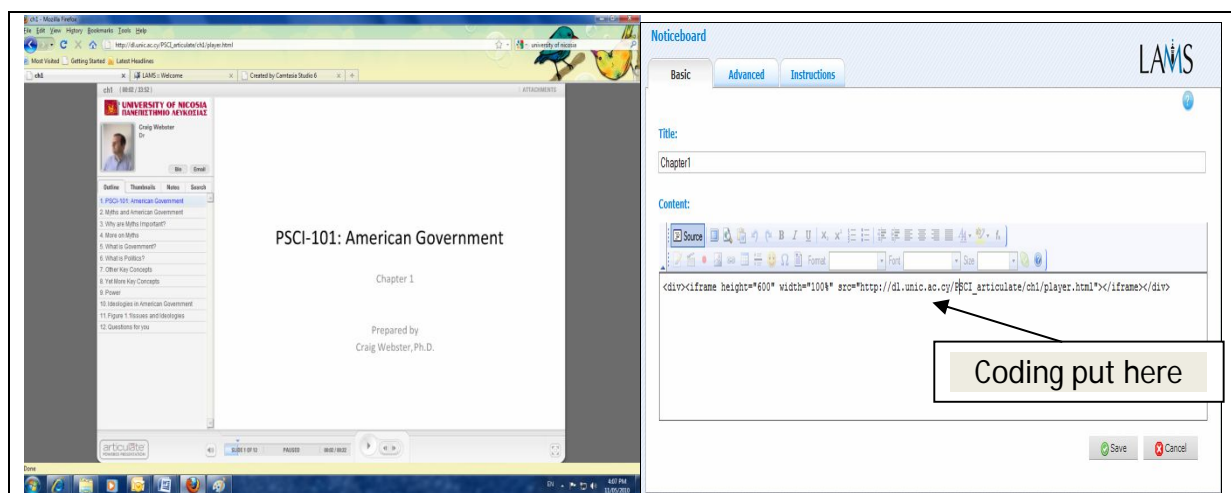


**Figure 10: LAMS tools available and actual tools used**

Published Articulate presentations and Camtasia Studio videos were embedded in the FCK editor using the coding in the editor's Source presented in Figure 11.



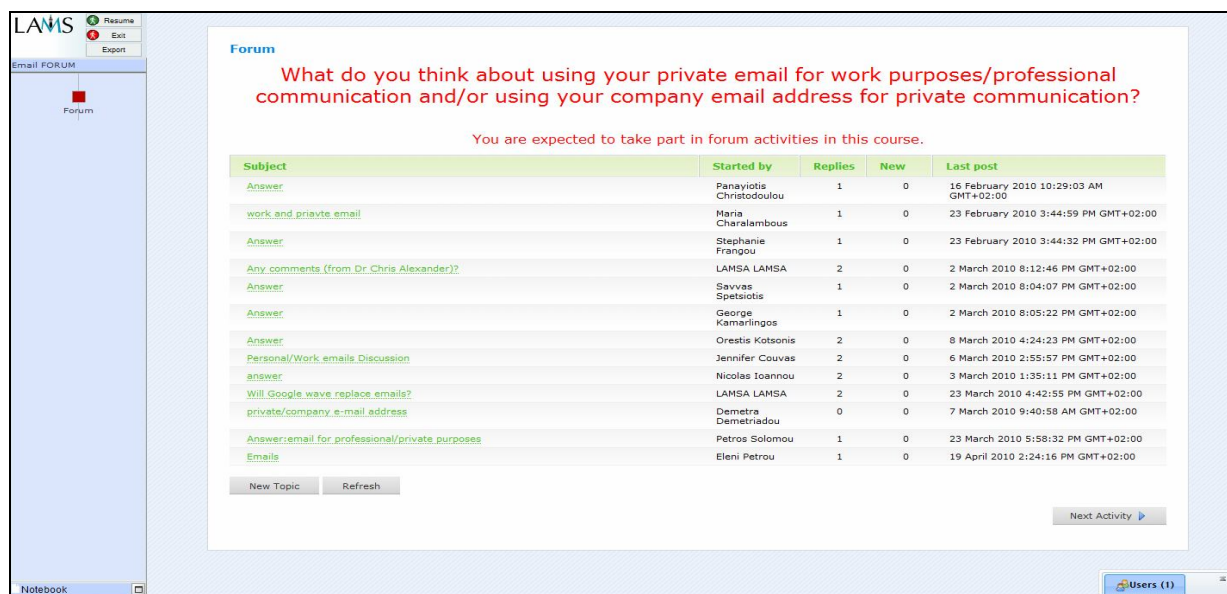




**Figure 11: Embedding a published Articulate lecture in FCK Editor Source**

Lecture sequence learning design in this project comprised three main generic components: (1) *teacher talk*—a recorded/annotated Articulate Presenter/Articulate Engage lecture embedded in Noticeboard; (2) *lecture-related student tasks* such as some kind of lecture-related student Q/A interaction, lecture-related shared resources and voting tool activities. However, forum and chat tools were rarely used within lecture sequences as they required considerably more monitoring by the lecturers. Please note that as all work in this project had initially been done on a ‘goodwill’ basis by lecturers, and as initially, lecturers had not been recompensed for work they had been doing, it was felt that overloading lecturers at this stage might de-motivate them from further engagement in the project; (3) *assessment*—assessing students’ understanding of a lecture was done mainly through traditional summative testing using the Assessment tool, Multiple-choice tool and Articulate Quiz Maker. However, a formative assessment component also was included using the Q/A tool. Even though this project used three basic learning design components in its lecture sequences (i.e. *teacher talk*, *lecture-related student tasks* and *assessment*), it was felt that a fourth important learning design element was missing: a free, practicable and technologically advanced teacher(s)-student(s), student(s)-teacher(s), student(s)-student(s) interact tool that allowed recordable synchronous [Dimdim/Elluminate](#)-style video conferencing interaction. If such tools become freely available in the near future as bandwidths limitations are resolved, it is held that this may add a powerful new dimension to learning design.

A single forum tool in a dedicated sequence was used in two specific ways in e-courses: (1) each e-course had a general course forum for general course announcements or course-related discussion; (2) some mainly humanity-related courses (e.g. psychology, philosophy) had between 1 and 4 lecture-related forum discussions in which for students to participate. Most courses had a minor grade awarded to forum participation, however in spite of this, relatively few students actually took part in forum discussions. In Figure 12 there is a screenshot of a forum activity from a business communications course, here only about 40% of the students took part in the debate, but significantly higher percentages of students viewed the forum contents.



**Figure 12: A screenshot of a forum activity**

## Administrative Issues

Over 20000 words of e-mail correspondence took place with lecturers, university administration, project team members, university stakeholders and e-students during the trial e-semester; also during the initial stages of implementing the project aims, countless meetings took place. Section 3 is divided into two parts: in part one a detailed description of the key areas of student administration is presented and in part 2, an analysis of the kind of issues relevant to lecturer administration is provided.

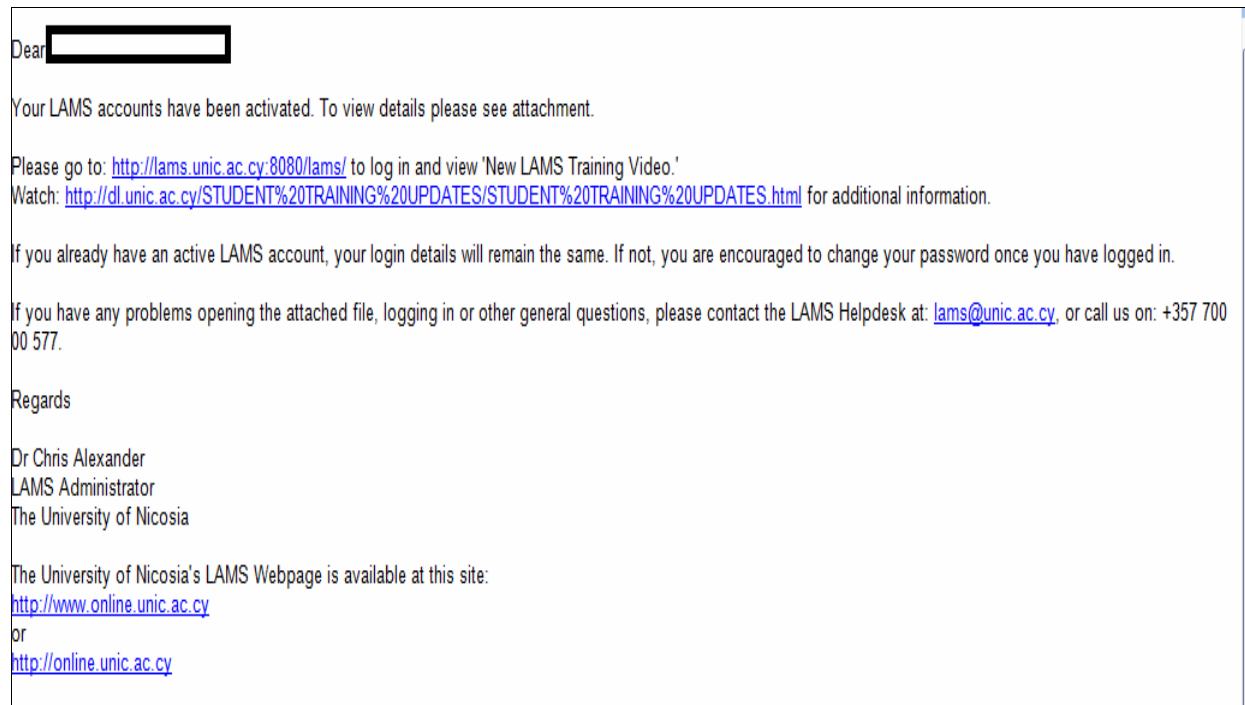
## Student Administration

There were a number of components to developing a resilient e-student administrative infrastructure. Firstly, students had to be informed about the new e-courses; this was done by placing information on the student intranet with a link to courses currently available online. Figure 13 presents a screenshot of how this was done.




**Figure 13: The University of Nicosia student intranet link to e-courses**

Once students had started registering, login accounts had to be sent to students; registration was done online or through an academic advisor. In Figure 14 there is a screenshot of the text of a typical email sent to new students; this email had a detailed attachment covering important account activation information in more detail (Figure 15 presents an example of such an attachment). As at this stage it was very important to make sure students were fully supported, account activation emails had to include information about: (1) the LAMS server URLs; (2) username and password; (3) University E-handbook (see Figure 16); (4) technical specifications and suitable browsers; (5) the University LAMS email and telephone helpdesk; (6) the various student training videos. The main student training video is the Camtasia-Studio-recorded New LAMS Training Video; other student training videos include the LAMS Student Training Presentation, the New Student Training Update; Trouble Shooting in LAMS (older training video).



**Figure 14: The text of a typical email sent to new e-students**



**UNIVERSITY OF NICOSIA**  
**ΠΑΝΕΠΙΣΤΗΜΙΟ ΛΕΥΚΩΣΙΑΣ**

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**Your LAMS account has been set up!**

The University LAMS webpage is <http://www.online.unic.ac.cy> or  
<http://online.unic.ac.cy>

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**Your username is:**

**Your password is:**

You may change your password once you have logged in.

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The e support handbook is on <http://dl.unic.ac.cy/E-SUPPORT%20HANDBOOK.doc>

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**Hardware/Software Requirements**

1. Internet connection: DSL 512kbits/s or better
2. Pentium 4 Celeron 1.8 GHz CPU, 1GB RAM, 40GB HDD, Windows XP OS, or better configuration.
3. It is recommended that you use the most up-to-date version of Mozilla Firefox  
<http://www.mozilla-europe.org/en/firefox/>
4. BUT also keep Internet Explorer updated  
<http://www.microsoft.com/windows/internet-explorer/default.aspx>
5. LAMS Trouble-shooting PDF: click here  
[http://lams.unic.ac.cy:8080/lams/www/help/troubleshoot-en\\_AU.pdf](http://lams.unic.ac.cy:8080/lams/www/help/troubleshoot-en_AU.pdf)
6. IF YOU HAVE ANY QUESTIONS REGARDING THE ABOVE, CONTACT THE LAMS HELP DESK [lams@unic.ac.cy](mailto:lams@unic.ac.cy)

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**Also watch these training presentations**

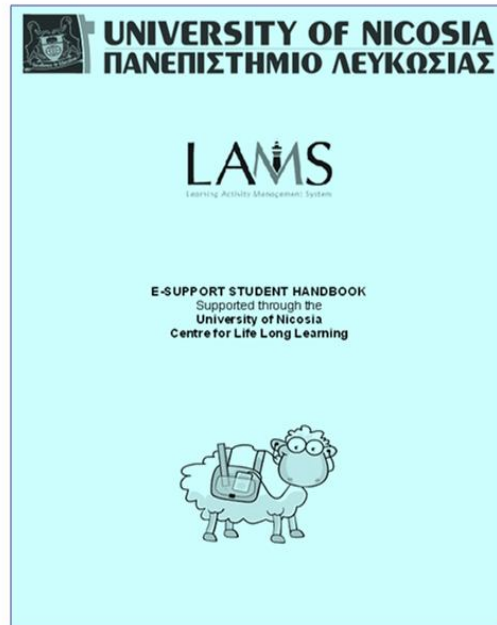
FIRST VIEW LAMS STUDENT TRAINING PRESENTATION  
<http://dl.unic.ac.cy/LAMS1/player.html>

VIEW THIS VIDEO ON THE LAMS WEBPAGE:  
[New LAMS Training Video](#)

CLICK HERE FOR PRESENTATION ON GENERAL SYSTEM REQUIREMENTS AND TROUBLE-SHOOTING IN LAMS  
<http://dl.unic.ac.cy/Information%20Bar%20TROUBLE%20SHOOTING/player.html>

Figure 15: Email attachment sent to all new e-students

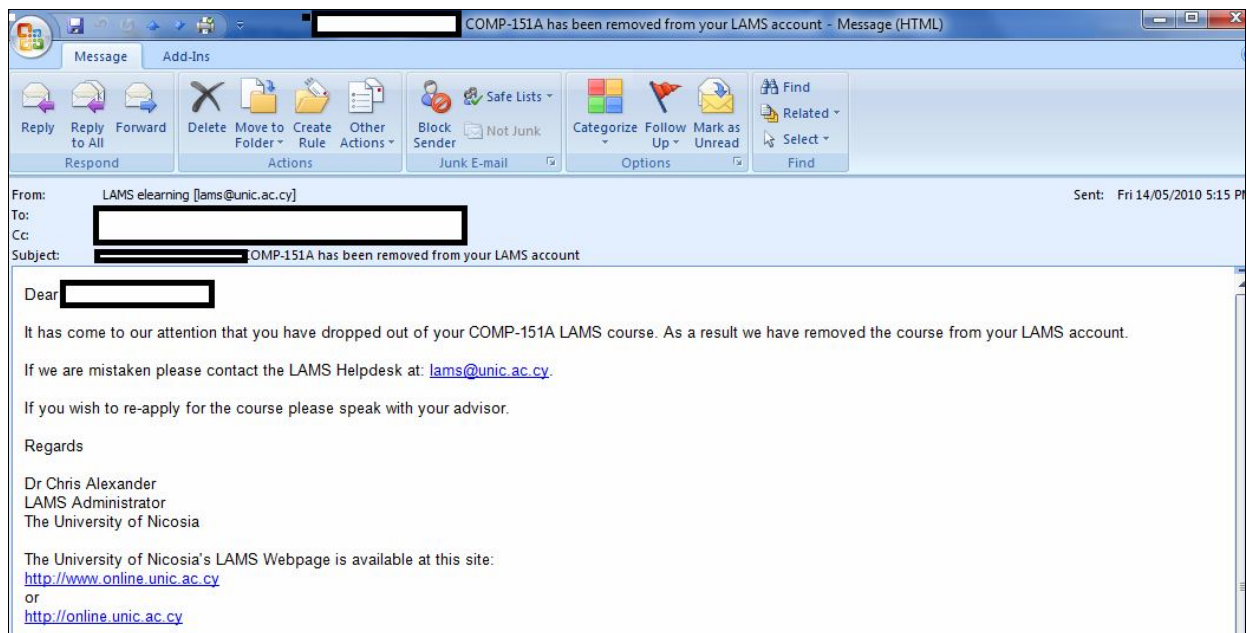




## The e support handbook

**Figure 16: The E-Support Student Handbook**

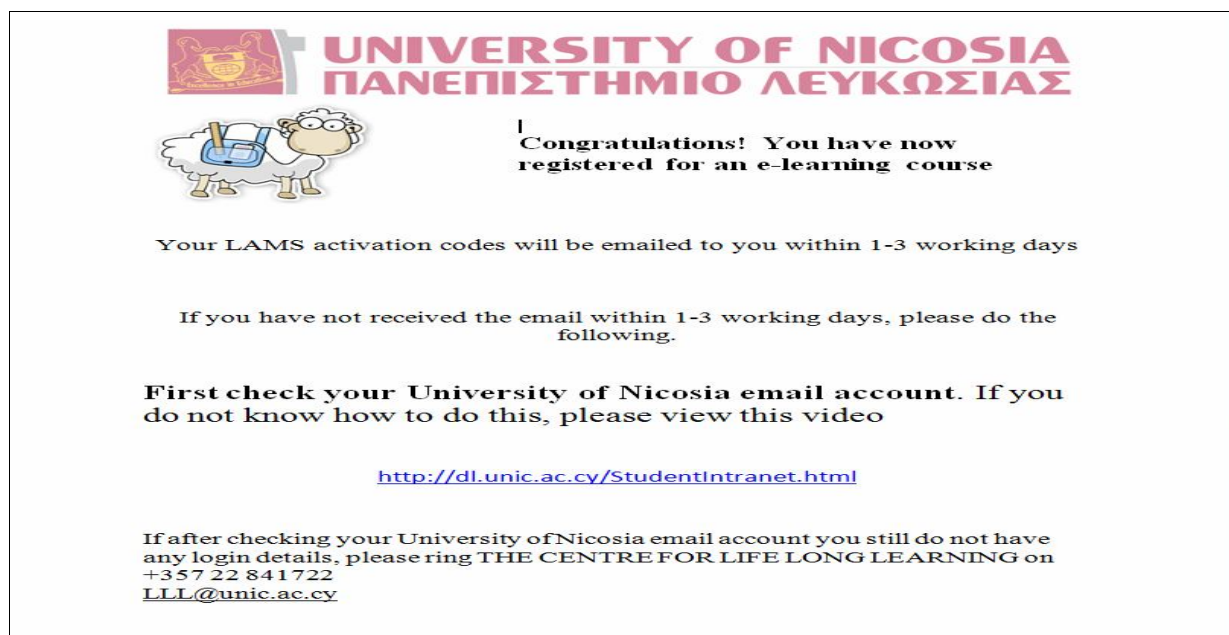
As the University of Nicosia had a two-week add-drop period, students were allowed to register for a course and drop it if they chose. This added a new administrative dimension to managing e-students effectively. All University student database searches had to include a daily check for students that had dropped courses. If a student had dropped a course, he/she would be sent an email, informing him/her that he/she had been removed. Figure 17 provides a screenshot of such an email; please also refer to section 5 for a discussion on technical ramifications of this procedure in LAMS.



**Figure 17: The email used to inform students that they have been dropped from an e-group**

However a number of teething problems became apparent while trying to administer student accounts and while attempting to adequately support students online. For the project team, the Spring 2010 semester was a 'true' stress-test, 'baptism-of-fire' period that exposed a number of weaknesses in the existing student e-administration/e-support system and led to the development of new ideas for supporting students. In Fall 2009, the total number of online students for two e-courses was twelve; the courses offered were COMP151 (an introductory computing course) and BADM231 (an English for Special Purposes course). However, with more organized publicity, this number had jumped to 192 e-students for ten courses in Spring 2010.

A major problem encountered, concerned the fact that large numbers of students did not know that they had been sent LAMS logins because they had not known how to access their University emails. Also, many personal student email addresses had been incorrectly entered by the student into the University Exelixis database system, or occasionally, the project team did not have any University or personal email to which to send login account information; in such cases an attempt was made to telephone students. As a result some students started their courses late or very late. One solution to this problem involved preparing a [Camtasia-Studio training film](#) with a fairly short URL address explaining how students might access their university emails and printing a special leaflet to be given to all new e-students by academic advisors (see Figure 18). However it was felt that this might not fully address the problem because it only increased the project team administrative workload and did not address the problem: student emails need to be checked automatically and students need to view a training film (see leaflet) to learn how to access their emails. A recommendation has therefore been made to develop a special computer program to automate this process.




**Figure 18: Leaflet given to all new e-learning students by academic advisors**


Another common problem issue was that many students had not viewed or fully viewed the student training films on how to use the system and as a result they did not appear to have fully mastered the user-friendly LAMS learner environment early on in the course. This realisation became apparent during follow-up telephoning of students to enquire why they had been falling behind with their LAMS e-work.

This problem was addressed in three main ways. Firstly, a pop-up window reminder appears on the LAMS webpage to remind students to view training films; Figure 19b provides a screenshot of this pop-up. Secondly, lecturers were asked to contact students to tell them about training videos and thirdly, academic advisors were instructed to recommend face-to-face training to all new e-students, and especially those with Cumulative Point Averages (CPAs) below 2.5 as of the Summer 1 2010 session. Figure 20 presents a summary of the Spring 2010 student CPA spread; it is asserted however that CPA level may not necessarily correlate positively with IT skills, but may be reflective of lack of self-study skills. Moreover, during the Spring semester there was considerable evidence that some students had not been studying regularly or at all. As a result, lecturers were informed and asked to contact students, and the project team got approval for the appointment of a new person for Life Long Learning (LLL) to help chase up lackadaisical students (ie remind them to work more). Three new LAMS monitoring accounts had been set up for LLL and it was thought that this would help. However, as monitoring or contacting large numbers of e-students significantly augmented the workload of the LLL Centre, a recommendation was made regarding the development of a special computer program to automatically remind students to work (a study scheduling program); in section 5.2 some ideas are presented for the creation of study scheduling program. Also new students as of summer 1 2010 were asked to reflect on their possible aptitude to e-learning; the main areas for reflection are presented in Figure 19a<sup>3</sup>.

<sup>3</sup> This document is based on ideas presented in WorldWideLearn



## Will You Be a Successful Online Learner?



To help you decide if online learning is right for you, ask yourself the following questions.

- Do you like to learn when you are in the comfort of your own home? ☐
- Do you manage your time well? ☐
- Are you comfortable using the Internet, Skype and e-mail? ☐
- Do you have basic computer skills? ☐
- Can you spend several weeks studying online? ☐
- Do you like to communicate through your computer? ☐
- Can you learn with "discussion" through your computer? ☐
- Can you learn through computer interaction with a teacher and classmates? ☐
- Do you learn better with audio-visual materials on your computer? ☐
- Do you have regular access to an online computer? ☐

If you answered "yes" to most of these questions, online learning is probably suitable for you. If you answered "no" to most of these questions, online distance learning may not be right for you.




Figure 19a: E-Checklist for new e-learning students

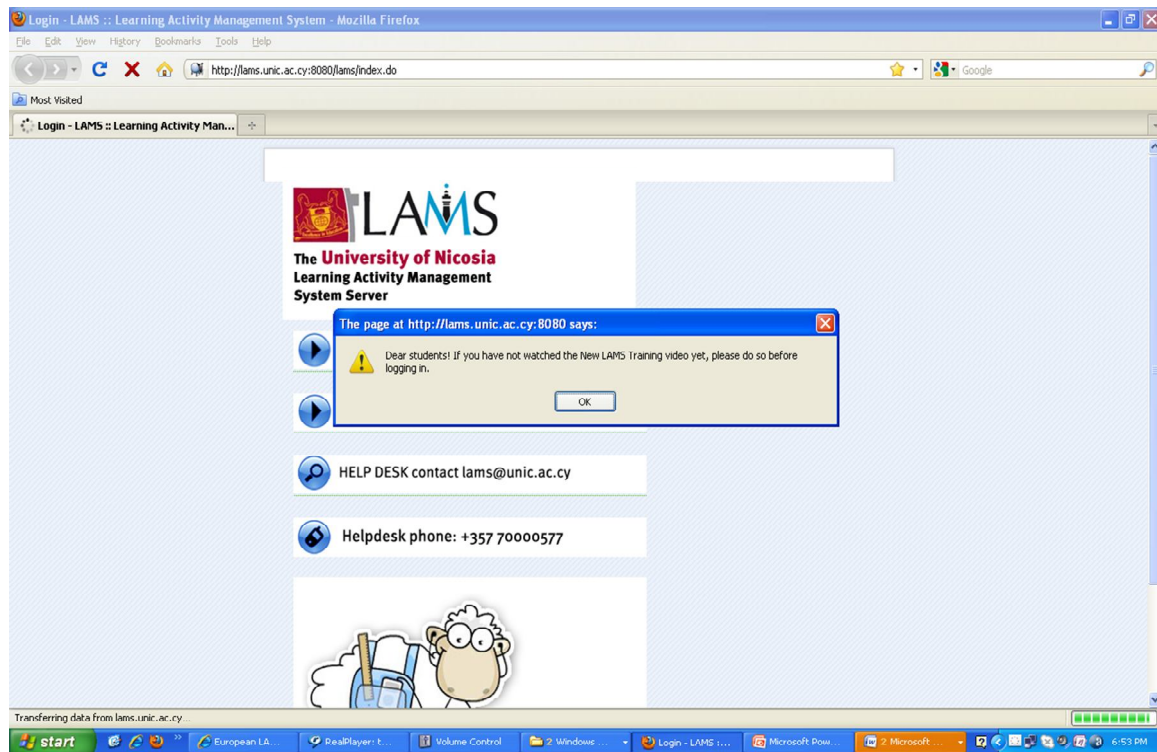


Figure 19b: A pop-up to remind students to view the training films

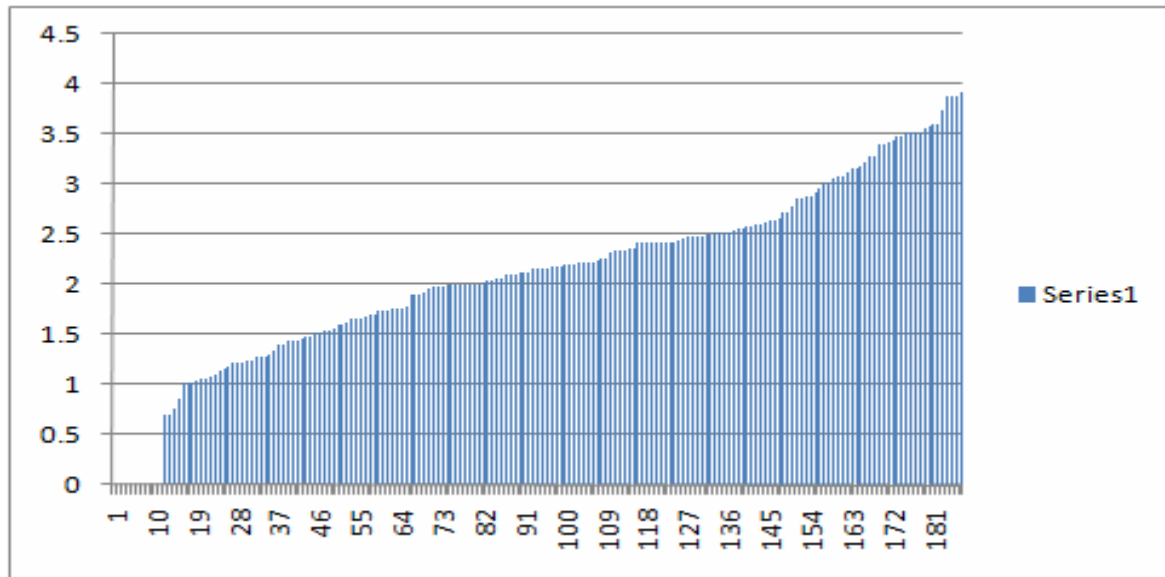


Figure 20: Student CPA spread for the Spring 2010 semester

Therefore taking all the above teething problems into consideration, it was expected early on in the Spring 2010 semester that the number of student deferrals and incompletes might be higher than normal, however it was also felt that this would be justifiable within the existing University regulations. A short analysis of final exam results and key questionnaire feedback for Spring 2010 is presented in section 6.



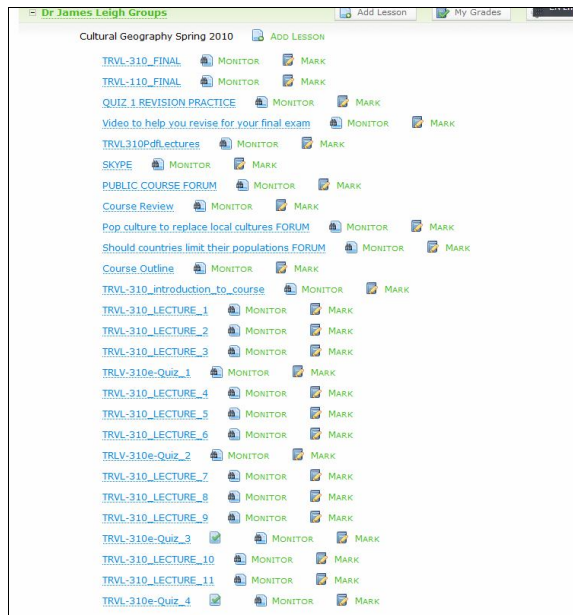
## Lecturer administration

Two Camtasia Studio LAMS teacher-training videos were created for the purposes of giving additional support to lecturers. The first video was about 25 minutes (i.e. the LAMS teacher training video) and the second video was a 5-minute update training video. As it was not practicable to meet lecturers on a regular basis for face-to-face training, lecturers received regular training update emails during the course of the semester. Two key aims of these emails were: (a) to keep lecturers aware of the student administration issues discussed in section 3.1; (b) to guide and support lecturers during their first semester of e-learning using LAMS. One of the first jobs after lecturers had viewed training videos was to give lecturers a recommended check-list of activities to be done as LAMS monitors. The key tasks comprised suggestions to: (1) monitor student progress regularly (i.e. at least every 2-3 days for 20-30 minutes each time) noting which students were moving through the course and which students were not; (2) posting at least once a week something on the public forum. It was suggested that forum posts include updates on how students were progressing throughout the course, feedback on submissions, reminders, final exam information, putting examples of interesting student responses to Q/A; (3) be available for the stated [Skype](#) hours; Skype hours were to be announced on the public forum; (4) respond to student emails within 1-2 days, however it was also noted that some students might prefer instant messaging through Skype; (5) contact students directly and ask them to catch up if they were significantly behind. It was held that maintaining a disciplined elearning environment would be important and students were expected to know that there were strict learner expectations on such e-courses. Choice of method of contact could initially be email, and then telephone or Skype (if available). In extreme cases where the student was not doing any work, or next to no work, the Centre for Life Long Learning would be informed. However, an observation made by all the lecturers appertained to how little Skype was used by students. Lecturer Skype usernames were distributed to all student LAMS accounts using noticeboard, nevertheless, no students actually used Skype to speak with their lecturers; emails, course forum or Skype instant messaging were the preferred modes of contact. Based on anecdotal feedback, there were two main reasons why Skype calls were not used: it was difficult to find convenient times to ring lecturers and it may be seen as potentially threatening by some students.

Apart from the checklist tasks discussed above, lecturers were invited to attend special training sessions at the end of the semester to learn how to export student portfolios and discuss methods for calculating grades for quizzes, assignments and other online work.

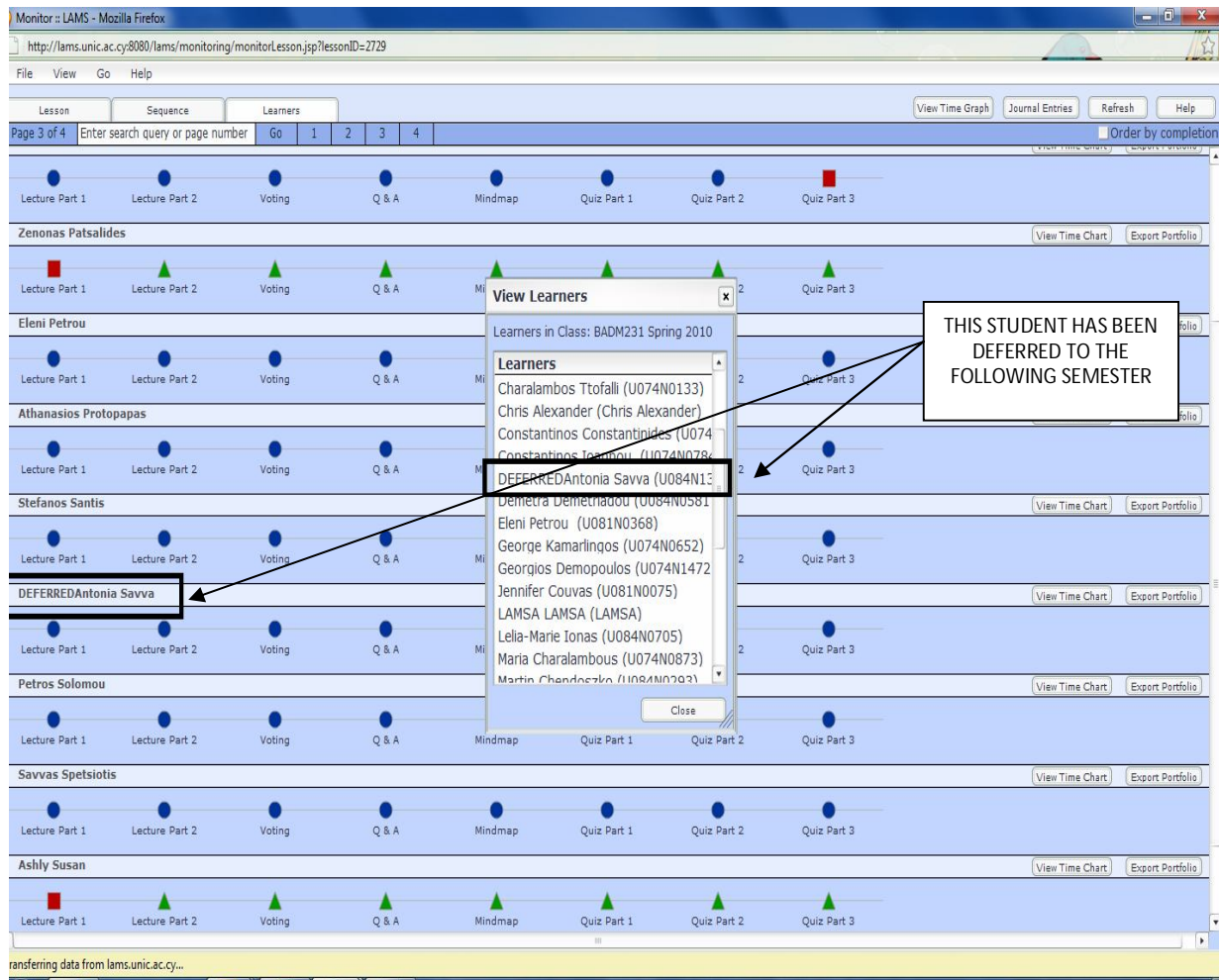
## Improving/updating LAMS e-course materials

During the course of the Spring 2010 semester many improvements were made to e-courses. Among the chief improvements were: (1) screen-recorded training videos to help students do better in submissions were prepared by all lecturers and sample model answers were included e.g. see here (business communications ESP course) or here for newer Camtasia Studio 7 (Psychology II); (2) lecturers also were asked to prepare exam support materials for students to help them prepare for the final exam, click here for an example of a business communications ESP course); (3) all online quizzes were presented randomized in the assessment tool and an option was considered to branch students into repeating quizzes if they did not do well enough in them; (4) A further development pertained to a feeling by some lecturers that having an occasional face-to-face session during the semester with students might be helpful and motivating especially for low achievers. Therefore lecturers were informed that this could be arranged if they wanted to explore the option; (5) courses had all lecture activities presented in one or two more-easy-to-monitor sequences. In Figure 21 there is a screenshot of the Spring 2010 semester e-course structure and the e-course structure used for all subsequent courses. The justifications for these changes were (a) this would significantly reduce monitoring time for lecturers and the Centre for Life Long Learning; (b) it would be easier to make back-ups and set-up accounts. A possible drawback was that students would have to do the lectures in the order they appeared in the larger lecture sequence(s).



**Figure 21: The Spring 2010 semester and post Spring 2010 semester e-course structures**

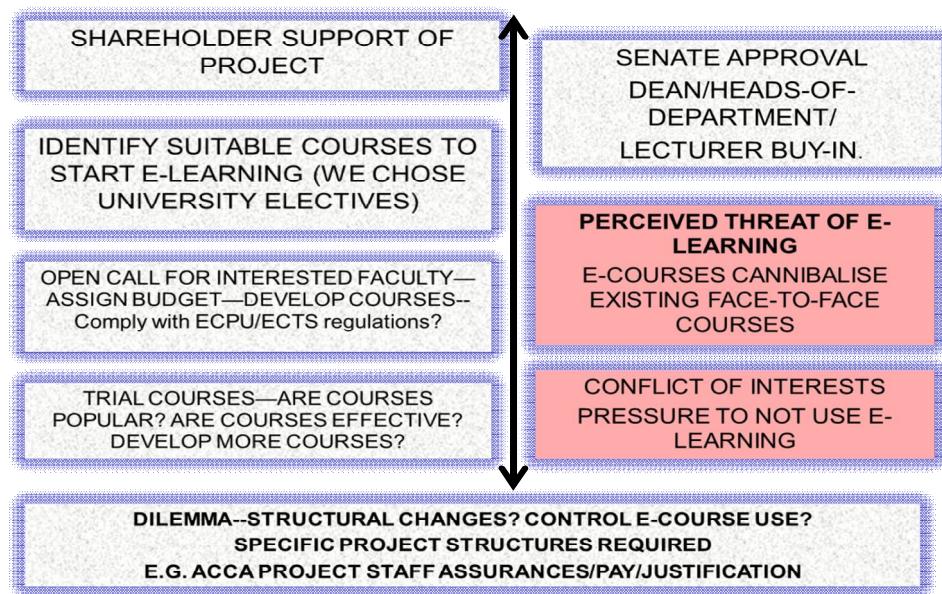
With regard to updating student status at the end of a semester, LAMS proved to be a very versatile system. Students can be removed or allowed to continue depending on whether they were withdrawn, passed, failed, given incomplete or deferred. Figure 22 shows an example of how changing student group status can easily be made known to the lecturer in LAMS monitor



**Figure 22: An example of how changing student group status can easily be made known to the lecturer in LAMS monitor**

## Organisational issues

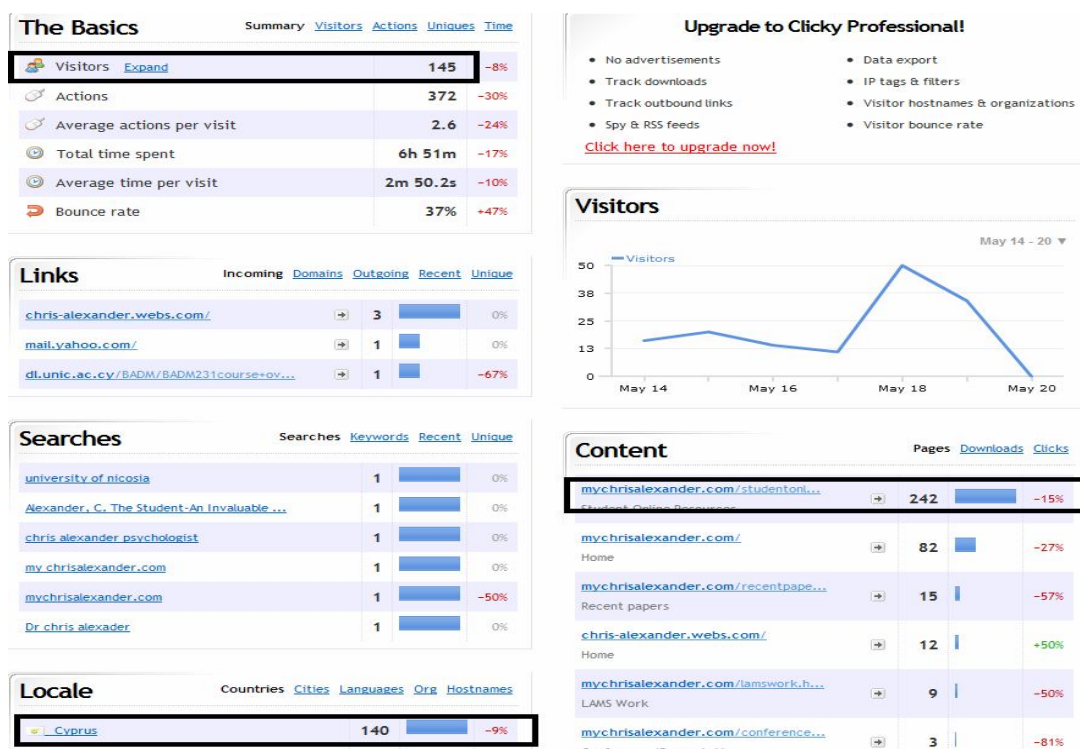
Figure 23 attempts to summarise some of the organisational issues that arose during the project.



**Figure 23: A summary of some of the organisational issues that arose during the project**

Even though a plan was established to start the creation of e-learning courses in a clear manner (NB this process has already been described in section 1), it appeared that there were some legitimate concerns voiced by some Heads of Departments and other faculty members regarding how such courses might impact on the number of face-to-face classes and the number of students in face-to-face classes. Moreover as the University was not sure that offering e-learning courses would lead to clear increases in student numbers and to a certain extent thought that some existing students might simply shift to e-learning, it did not wish to risk increasing overall expenditure by offering e-learning courses as an additional option to face-to-face. In practice, financial considerations led to, in some cases, e-learning courses replacing face-to-face sections; the term *cannibalisation* was coined and used to describe this process. Cannibalisation or risk of cannibalisation led to hesitancy or a conflict-of-interest crunch-point from some Heads of Department and various lecturers, regarding whether to oppose the creation of more e-courses. Even though this paper does not deal with these issues in any qualitative detail, the main suggestions put forward to gain more lecturer buy-in were to raise lecturer awareness of, or reiterate, the fact that:

- (1) providing new ways of delivering lectures might help address any present or future student attrition in an increasingly unpredictable financial world;
- (2) many students seem to prefer e-learning. Moreover, student questionnaire data discussed in section 6 indicates that most of the e-students stated that they find it harder to attend face-to-face classes because they actually have to work as well;
- (3) an investment in e-learning is actually a savvy professional development move, as lecturers would learn how to develop and deliver their courses to new local and international markets;
- (4) developing e-learning recorded lectures could also enhance overall face-to-face classes, as students could listen to lectures if they missed classes or re-listen to them for revision purposes. Furthermore, online recorded lectures can be a popular method for revising for exams. For instance, Figure 24 indicates that online course student resources for face-to-face students were used 242 times in the days preceding the course final exam for a business communications course. Moreover, these resources were used nearly 800 times during the three-month semester.



**Figure 24: Site statistics data indicate significant use of online student support resources for face-face students during the Spring 2010 exam period**

- (5) offering e-courses may attract more students to lecturer courses. Figure 25 for instance, shows how PSCI 101 (American National Government online) in the Spring 2010 semester had its largest intake for over five years and attracted mostly non-majoring students. Less than a third of the students were students of the IR and European Studies Department.

Student Program	Number of Students
IR and European Studies	7
Computer Science	4
Applied Multimedia	4
Public Relations	2
Psychology	2
Business Administration	2
Interior Design	1
Communications	1
<b>Total</b>	<b>23</b>

**Figure 25 An analysis of the Student majors in a PSCI 101 E-course in Spring 2010**

- (6) lecturers could attend a special two-day training conference in July 2010 with LAMS experts from Macquarie University (i.e. Professor James Dalziel—the creator of LAMS, and Dr Leanne Cameron), Dr Spyros Papadakis (The Hellenic Open University—the foremost Greek LAMS expert) and participants from the University of Nicosia. Also a new edited-edition book launch<sup>4</sup> on LAMS and Learning Design by prominent international authors was timed to coincide with this event to draw

<sup>4</sup> Dalziel, J., Alexander, C & Krajka, J. (Eds.). (2010). *LAMS and Learning Design*. Nicosia: University of Nicosia Press



attention to the fact that many researchers in top educational institutions across the world from diverse fields of specialisation are engaged in LAMS and Learning Design research.

- (7) Student questionnaire feedback was on the whole very positive regarding e-learning (section 6)

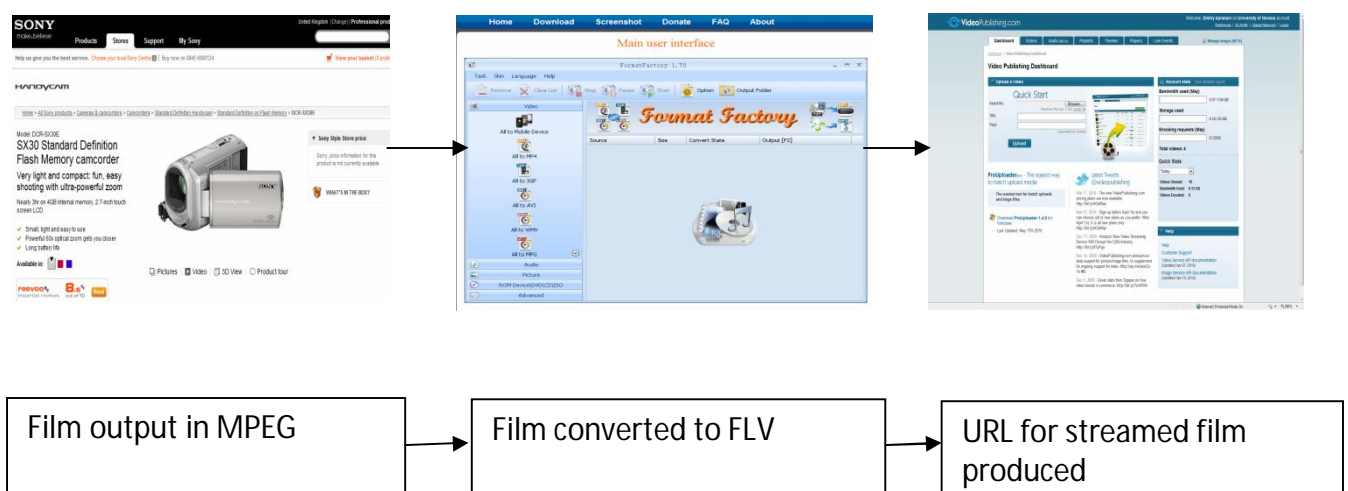
## Technical issues

In section 5 a summary of some of the main technical issues encountered will be presented and some recommendations for further technical development will be made.

## Key technical issues

The system architecture designed for this project purposely kept a lot of content separate from LAMS. All recorded lectures and films were embedded as separate URLs within the FCK Editor. This decision facilitated portability and quick upgrading of content without the need to change a live LAMS sequence. Moreover it did not lead to any overloading of the LAMS server and LAMS sequences were much smaller in size so quicker to download for students. Regular weekly back-ups were undertaken and all completed LAMS course sequences were exported and stored separately. At the end of a semester all student online work was also exported and stored for any possible future reference. Data management became an issue as the project began to expand and an effective data management system is now required to store large numbers of recorded lecturer materials and updated LAMS sequences that have been exported.

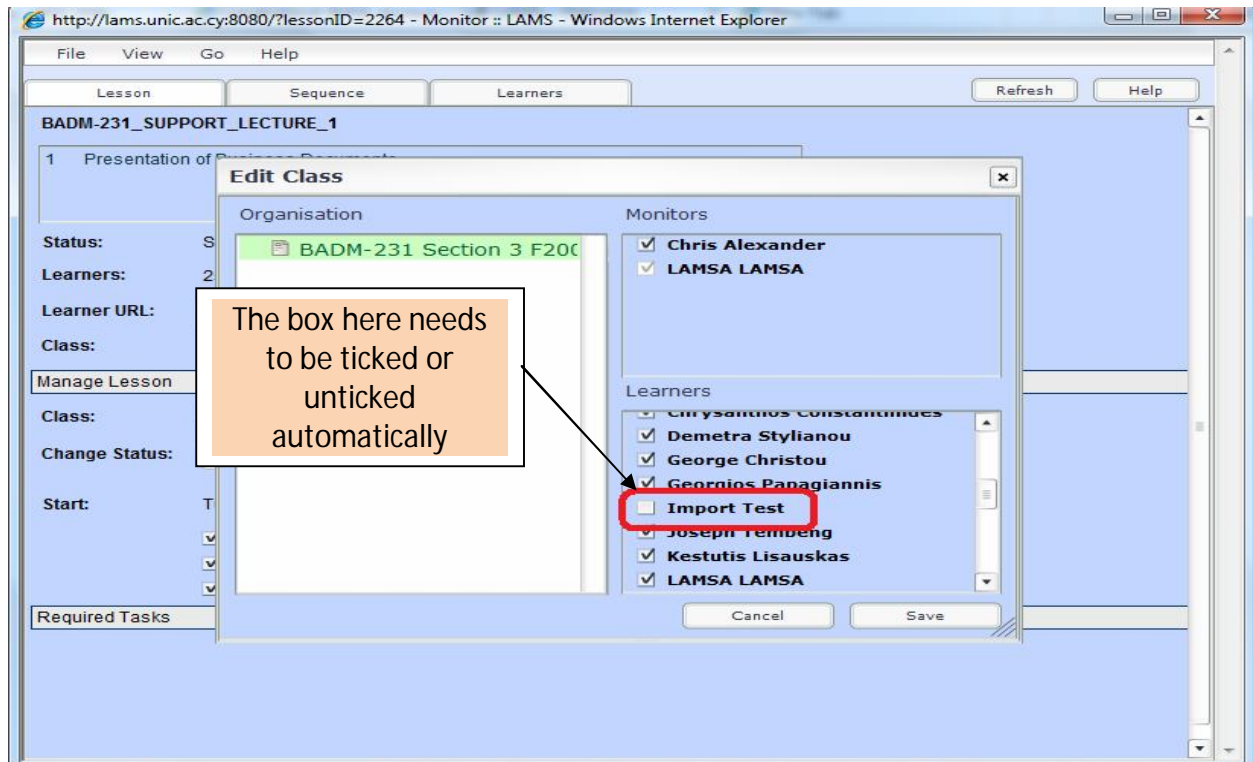
The option to create streamed films of lecturers giving lectures in class without students being present was considered, and it was thought that some lecturers might prefer this style of lecture e-content creation. However, on the whole, this option was rejected after initial spike tests identified some disadvantages of streaming technology in Cyprus. Figure 26 provides a visual representation of what was involved in the process of creating streamed lectures without the involvement of far more expensive professional film production services. Firstly, films were recorded using a fairly good digital camera (e.g. SONY HANDYCAM DCR-SX30E), and then Format Factory, a freely downloadable film conversion program, was used to convert the much larger camera MPEG output to FLV. The converted films were then sent to VideoPublishing.com in America and URLs for streamed films were then available for embedding in the LAMS FCK Editor. However in practice, bandwidth limitations in Cyprus meant that the buffers on streamed films slowed down viewing considerably, moreover, progressive downloaded films were found to be far quicker and practical to use.



**Figure 26:** A visual representation of what was involved in the process of creating streamed lectures films

Another technical issue concerned the ease to which students could be logged in and out of sequences. As this is currently a laborious manual job, Macquarie University's E-Learning Centre Of Excellence (MELCOE) were informed, and they have confirmed that they would be developing a facility to allow students to be logged in

and out of sequences automatically. This function would help allow integration between the University of Nicosia's Exelixis system and LAMS (ie once a student registered for a course, he/she would automatically be logged into (or out of as required) all course sequences. Figure 26 provides a screenshot example of what is required.



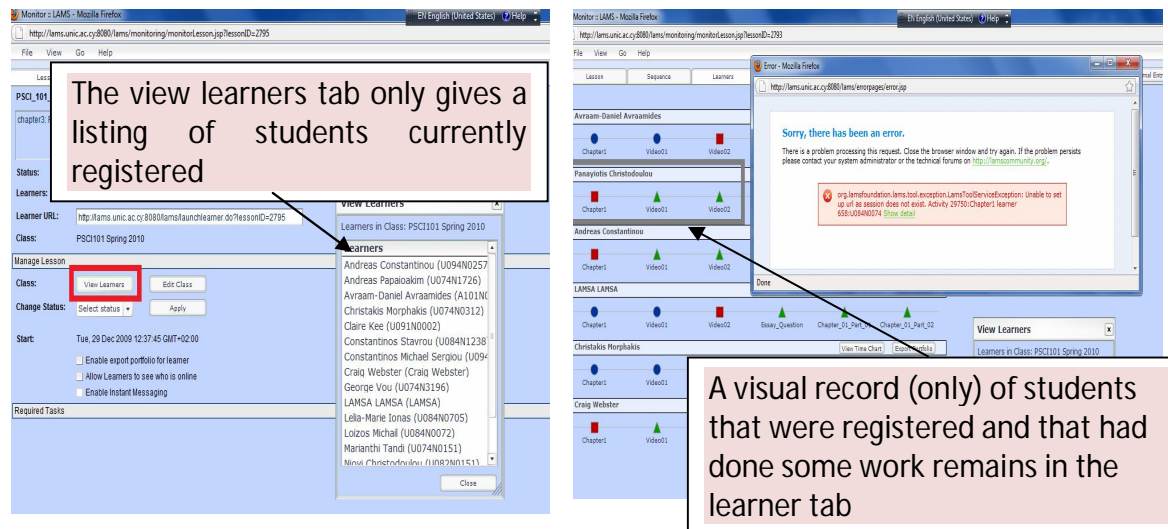
**Figure 26: Logging students in or out of sequences automatically**

A related problem with which to deal involved coping with the constantly fluctuating numbers of registered students during the semester. There were cases of students registering for courses, unregistering and then registering again. However, even though this process was currently undertaken manually, LAMS proved to be extremely effective. Figure 27 for instance indicates that the view learners tab only gives a listing of students currently registered, however a visual record (only) of students that were registered and that had done some work remained in the learner tab. Moreover LAMS developers had much foresight in allowing administrators to reinstate student accounts without any loss of past account data.

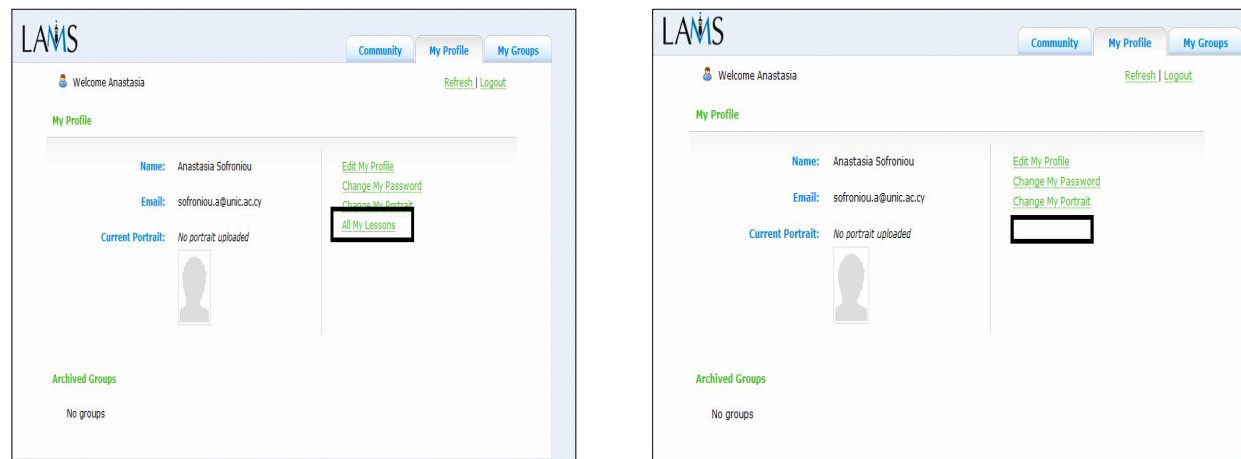
An additional technical issue pertained to the need to deny students access to past course materials i.e. to be able to remove the All my lessons tab in My Profile; Figure 28 provides a screenshot of this. Ernie Ghiglione, the LAMS Project Manager at Macquarie University, provided the coding to do this (see below).

In your: jboss-4.0.2/server/default/deploy/lams.ear/lams-central.war directory, edit the profile.jsp page comment out (or remove) from line 49 this chunk of code:

```
<li class="no-list-type"><a
href="index.do?state=active&tab=lessons"><fmt:message
key="title.all.my.lessons" /></a></li>
```



**Figure 27: The view learners tab and the learner tab**



**Figure 28: Removing the All My Lessons Tab in My Profile denies students access to past lessons**

A final technical matter concerned the decision not to attempt to train lecturers to use the LAMS Authoring Environment or to try to train lecturers to use any advanced software; rather a skilled LAMS teacher representative materials up-loader was used (Figure 29). The system chosen was in line with Alexander (2009a, 2009b) who states that two important TESOL-germane broad-spectrum issues often presented in the findings of mainstream LAMS literature pertain to (1) the need for a supportive environment (Burns 2007, McDonald and Star 2006, Laurillard 2006, Walker and Masterman 2006); (2) mainstream LAMS studies reporting lower than expected numbers of sequences created (Russell et al. 2005, Masterman and Lee 2005, Levy et al. 2008, Jameson et al. 2007). Alexander (2009b) thus states that the risk of a fissure appearing in the teacher and LAMS teacher-trainer relationship might necessitate the creation of a skilled LAMS teacher-representative materials up-loader. Namely, it is maintained that it may be quicker to discuss desirable content, learning outcomes and format with the teacher, rather than train teachers fully to use the increasingly sophisticated Author environment tools. In addition, the creation of such an intermediary expert LAMS Author may be an unavoidable outcome of a rift that could appear between technological innovation and practicable in-service teacher training.

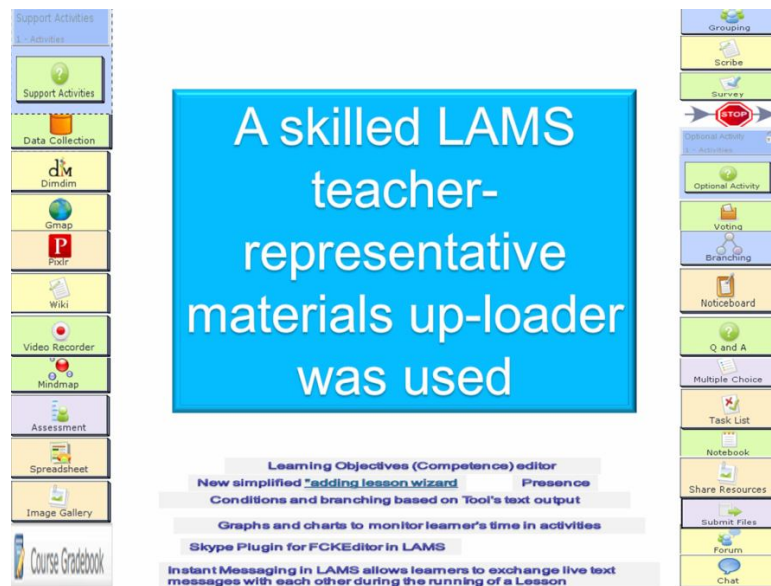


Figure 29: This project used a skilled LAMS teacher representative materials up-loader

### Technical recommendations

The key technical improvement that has already been discussed in section 3.1 was the recommendation to develop a study scheduling tool. In Figure 30 a suggestion has been made regarding where this could appear in LAMS and Figure 31 presents a suggestion for how such a student study schedule tool might function.

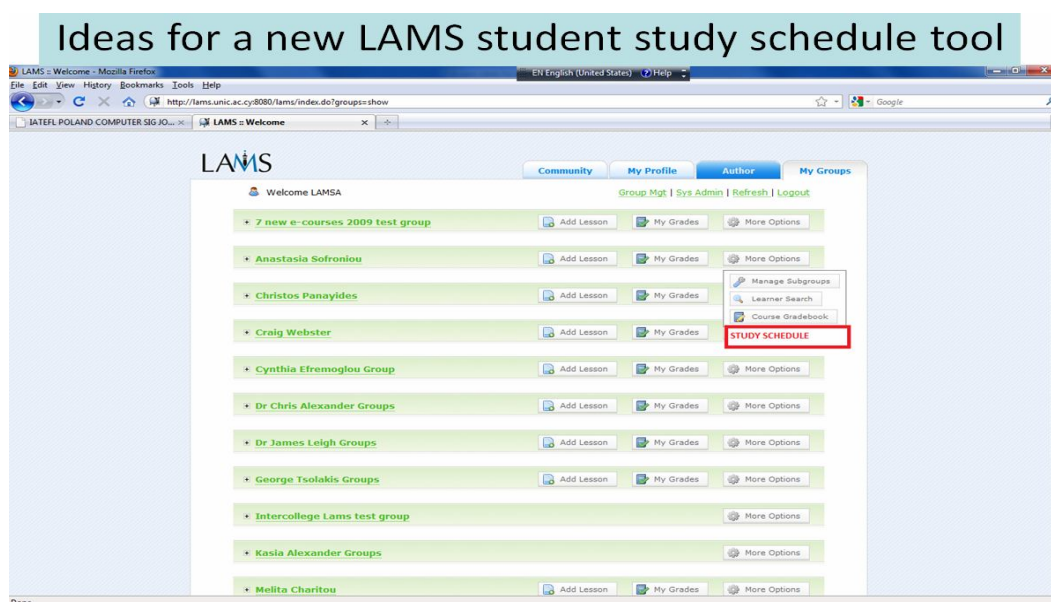
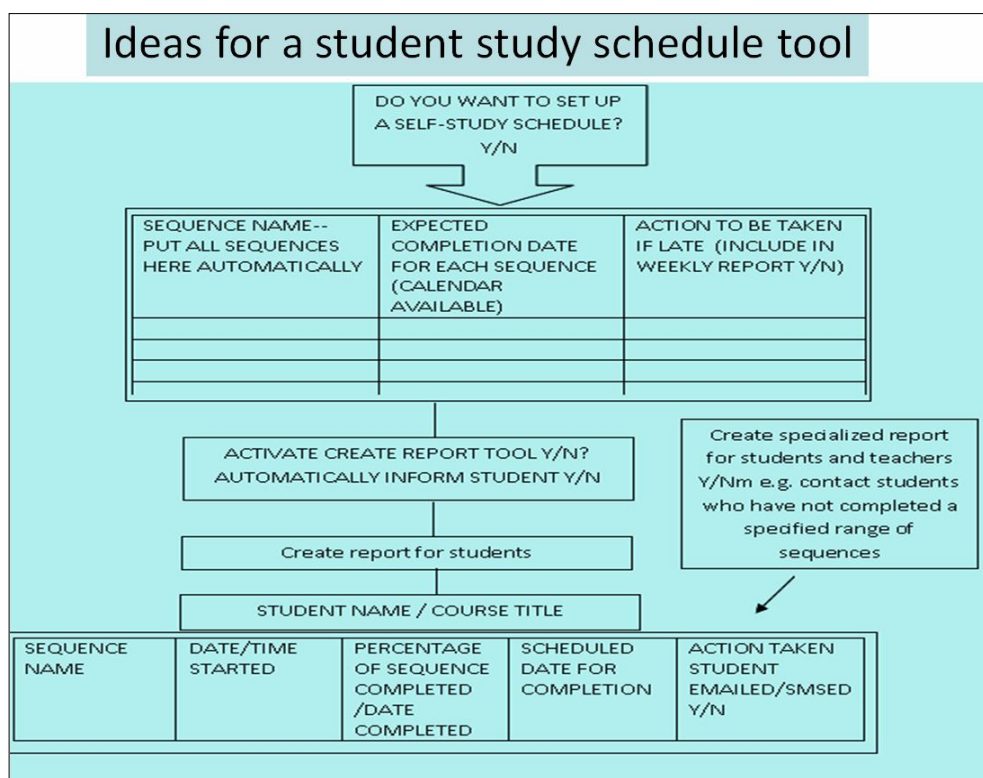


Figure 30: Where a study schedule tab might appear in LAMS





**Figure 31: A suggestion for how a student study schedule tool might function**

### Questionnaire feedback and evaluation of overall grades for Spring 2010 e-courses

In section 6 some key questionnaire feedback and information on final course grades will be given.

Three important questions that required feedback during the Spring 2010 semester trialling e-courses were: (i) Why had the student decided to take an e-course? (ii) How easy had it been to study online? (iii) Had the student had any problems using LAMS? 126 mostly anonymous questionnaires had been returned for analysis. With regard to the first question, 58 students (47% of total) stated that either they could not attend face-to-face classes because of work or because of scheduling issues (or both). 36 students (27% of the total) mentioned that they preferred the freedom to study at any time from home. About 14% of the students wrote that they lived a long way from Nicosia and found the travelling time consuming. Some other reasons included: (i) the student was doing the final year project; (ii) the student was interested in technology; (iii) the student could not register for other sections because they had been closed; (iv) the student felt face-to-face classes were boring; (v) the student was personally interested in doing the e-course.

Pertaining to question 2, about 9% of students stated that it was not so easy to study online, moreover some students held that: (1) it was sometimes hard to motivate themselves; (2) it would be helpful to have some face-to-face class contact with the teacher. However, most students (over 80%) found online study easy or very easy. In particular, some students asserted that: (1) they found it less stressful to take e-learning classes than attending traditional face-to-face classes; (2) it was useful to be able to re-listen to lectures; (3) online study was more engaging because it involved a wide range of activities.

With reference to question 3, 95% of the students stated that they had no problems using the system. Interestingly, the remaining 5% of the student problems did not have anything to do with LAMS: they were mostly related to problems using browsers or recording quality.

Appertaining to student final course grades, a comparison of 797 students taking some of the same courses face-to-face in Fall 2009/Spring2010 with approximately 150-e-students for Spring 2010 is presented in Figure 32 and Table 1. The aim was to make a quick evaluation of any immediately noticeable differences between the final summative outcomes of the two modes of delivery.



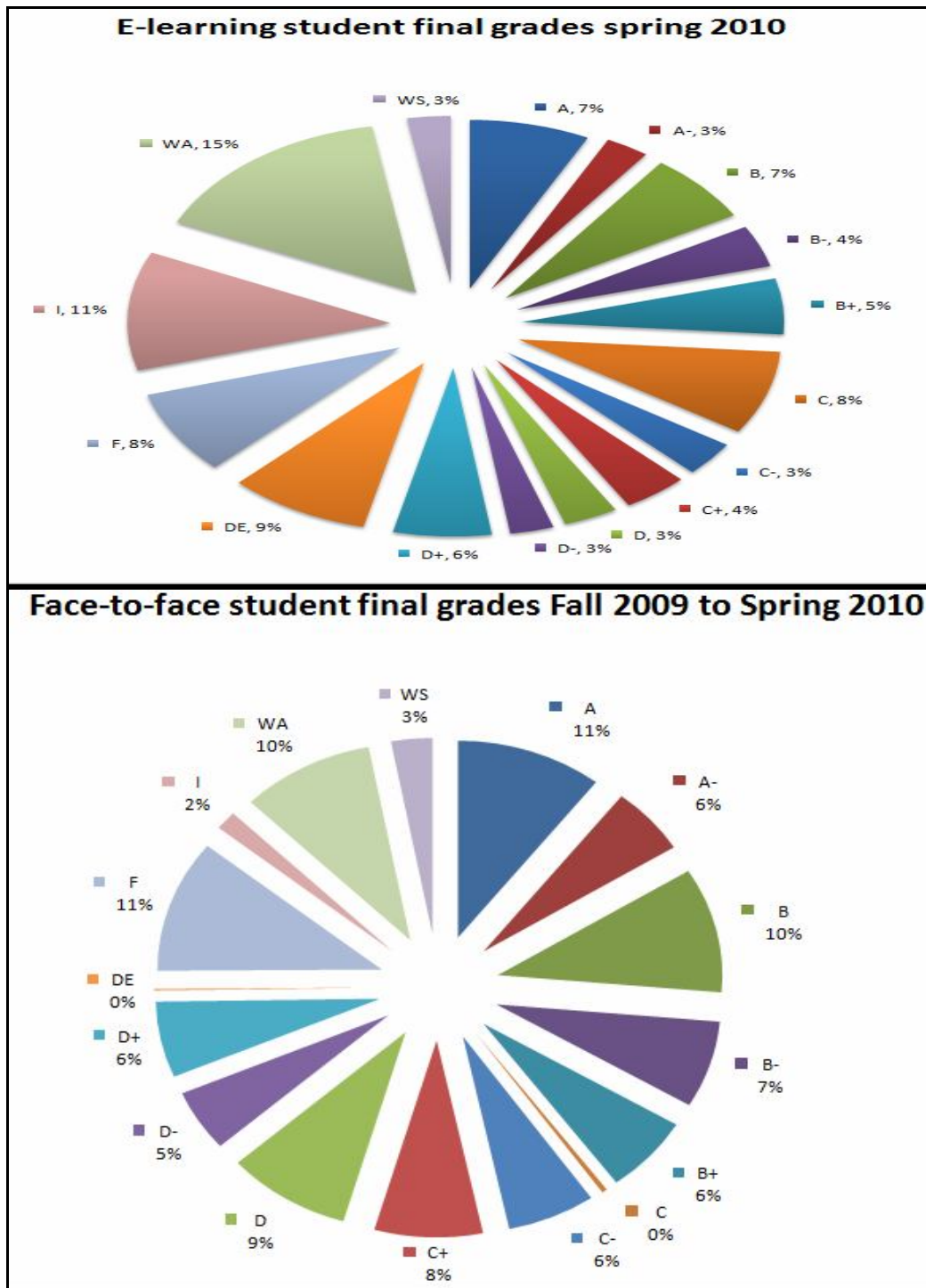


Figure 32: A comparison of face-to-face-student and e-student final course grades

**Table 1 A comparison of face-to-face-student and e-student final course grades in percentages**

	A/A-	B/B-/B+	C/C-/C+	D/D-/D+	Deferred	Fail	Incomplete	Withdrawn
<b>E-learning</b>	<b>10%</b>	<b>16%</b>	<b>14%</b>	<b>12%</b>	<b>9%</b>	<b>8%</b>	<b>11%</b>	<b>18%</b>
<b>Face-to-face</b>	<b>17%</b>	<b>23%</b>	<b>14%</b>	<b>20%</b>	<b>0%</b>	<b>11%</b>	<b>2%</b>	<b>13%</b>

E-learning students therefore tend to score fewer grade As and Bs than face-to-face students, however, they also appear to score fewer grade Ds and Fails. It may be that weaker students perform better in an e-learning environment because they can re-listen to lecture materials, have more time to translate lecture materials or can work at their own pace; whereas in class they are forced to work at a possibly faster 'class pace'. However better students may benefit more from classroom interaction and as a result might perform better overall in the course. E-courses also attracted more incompletes and withdrawals. This issue however has already been discussed in section 3.1 and it is expected that these relatively high percentages will go down as student administrative and technical support improves. Nonetheless, a key problem to address is the perception by teachers that many students lack self-study skills. Therefore, it was felt crucial to get new students as of summer 1 2010 to reflect on their possible aptitude to e-learning; the main areas for reflection have been presented in Figure 19a

## Conclusion

This report has looked at the kind of e-work being undertaken successfully in LAMS at the University of Nicosia. It has described the main software being used, analysed some learning design issues, highlighted important student and lecturer administration areas, provided a summary of key technical concerns, presented some questionnaire data and given a breakdown of final course grade data. This project has shown that a minimal financial investment managed wisely can transform an educational institution. The salient benefits include: providing a different kind of student educational support, improving university cash flow (NB nearly 50% of e-students work and cannot easily attend regular face-to-face classes), offering the potential to reach wider local and international markets.

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