USING ONLINE TOOLS IN A HYBRID COURSE: TEACHING IN A MULTICULTURAL AND MULTIETHNIC ENVIRONMENT

Isabel S. Carvalho[1,2] and Zoran Zdravev[3]

[1]Instituto Superior de Engenharia de Lisboa, Lisbon Polytechnic Institute, Lisbon, Portugal
[2]IDMEC, University of Porto, Porto, Portugal
[3]Computer Science Faculty, Goce Delecev University, Stip, Macedonia
icarvalho@dem.isel.ipl.pt; zoran.zdravev@ugd.edu.mk

Abstract

The present paper reports on a "hybrid" course, where a significant amount of the course-related learning activities take place in an online learning environment, making it possible to optimize the learning and teaching methodologies and the amount of time spent in the classroom for a short and intensive International Summer Course. Twenty eight candidates applied for the course from six different countries with different ethnical and religious believes. Twenty five students from four different countries (Croatia, Kosovo, Macedonia and Serbia) attended the "Online Teaching" Summer Course. The official language of the course was English. The traditional face-to-face instruction is reduced but not eliminated. Instead, active learning techniques are implemented, both in and outside of the class room and are used "to supplement rather than replace lectures". This paper addresses the authors (co-teachers) experience throughout the course the "International Summer School" that was held in Bitola, Macedonia.

Keywords - Hybrid Course, Multicultural, Multiethnic, Active Learning, Online Teaching.

1 INTRODUCTION

The International Summer School hereafter referred as ISUM07 (International Summer University in Macedonia) was held in Bitola Macedonia from 7 to 22 of July, 2007.

As stated by the organizers "… the International Summer University in Macedonia is a project aimed at contributing to the restructuring and reform processes at the participating universities. … a most useful contribution can be made in assisting the involved universities to improve the quality of its education and research" [1]. Relevant information on the International Summer University Macedonia can be found in [2] and the ISUM 2005 – 2007 project summary is included in [3].

In cooperation with the faculties of Law, Public Administration, Economics, Business Administration, Education and Teacher Training of the Universities of Skopje, Tetovo, Bitola, and the South Eastern Europe (SEE) University in Tetovo, SPARK (formerly ATA – Academic Training Association) organised the International Summer University Macedonia (ISUM) in 2005, 2006, and 2007. Funding until 2007 has been granted by the Netherlands Embassy in Skopje, Macedonia. The project is increasingly co-financed by the participating local institutions and other donors.

The aim of this project is to foster academic cooperation on a national and European level and to assist in the implementation of the Bologna Process in Macedonia. Each summer, 20 intensive summer courses are organised [1].

In addition to the academic courses, public debates on topics such as the Ohrid Agreement [4] and the Bologna Process are organised. Recreational activities provide ample opportunity for students and professors to meet in an informal setting.

Moreover, the project includes a workshop programme and study visits for local faculty, and an annual seminar for student unions from SEE. All these activities aim to contribute to the project's overall aim to foster inter-university co-operation within Macedonia, while improving the quality of higher education in Macedonia and accelerating its integration into the European Higher Education Area [1].

Most of the ISUM courses take place in a traditional environment and only a few (two in 2007) had an online learning component.

Hybrid courses (also known as blended or mixed mode courses) are courses in which a significant portion of the learning activities have been moved online and time traditionally spent in the classroom is reduced but not eliminated. The goal of hybrid courses is to pair the best features of face-to-face

teaching with the best options of online learning to promote active and independent learning and reduce class seat time. Using instructional technologies, the hybrid model forces the redesign of some lecture or lab content into new online learning activities, such as case studies, tutorials, self-testing exercises, simulations, and online group collaborations. The reasons the authors decided for a hybrid course is mainly twofold: i) to introduce it to students, and; ii) to use it for better results in the ISUM environment.

This paper describes the initial activities for the ”Online Teaching” summer course, meeting and acceptance of candidates, (their background, age, culture, country, computer and English language skills), leading through the course activities and to the learning outcomes at the end. Communication with the students through e-mail, forum, personal Blogs and SMS is described and an analysis is provided, based on both instructors experience, final official course questionnaires and student's feedback online.

2 COURSE PREPARATION AND DESCRIPTION

The reported course “Teaching Tools for Online Education and Training” (Online Teaching for short) was mainly prepared at a distance. Extensive and detailed information and instructions were provided in advance by SPARK to the professors. The course preparation process started with applying for a possible course (course theme) for ISUM2007 on the part of co-professor (Zoran). Both the theme and the course were accepted by SPARK and then SPARK suggested the course to be realized by a visiting professor (Isabel).

Although the co-authors (co-professor and visiting professor) never met before they exchanged several e-mails in order to attune the course theme, the manner or realization, conditions of realization, and they concluded that such a course could be realized in the frames of ISUM2007. There was an early exchange of emails to prepare the co-professor's one week visit to the hosting Institution of the visiting professor. This visit, which took place in May 2007, was devoted to the fine-tuning, defining the title and course structure, preparing a syllabus, establishing the course level and prerequisites and discussing the teaching and assessment methods, among others. The necessary technical conditions were also defined. The precondition of the course realization was the provision of an appropriate computer laboratory equipped with modern computers, access to the Internet and necessary software. SPARK was able to provide the appropriate computer lab but not the complete necessary software. The key part of the software was the provision of Learning Management System (LMS) and it was provided as sponsorship by “Moonlight“, a company from Lisbon that conducts development of such software [5].

Finally, the Online Teaching course was designed and made available through “Moonlight”, a proprietary Learning Management System (LMS), before the beginning of the course. An available online course structure, syllabus, daily topics, and a list of required and suggested readings were provided.

A simple and straight forward structure was chosen as there was no up-front knowledge on the participants' background. The course required online registration and was accessed through a login and password. The information was structured in a Menu type layout: Course description, Syllabus, Readings (required and suggested available for download), Links and Activities. Also a welcome forum (see box) was set-up and others followed along the two weeks.

Course credits (ECTS) were also established and approved by SPARK before the ISUM2007. The ECTS for the “Online Teaching” course were 2,5.

We should emphasize here that both professors had complete liberty in creating the course. A great advantage was the visiting professor's experience in previous courses of this type, but not in the frames of a “Summer University” which was a challenge: mobility in a new manner, a very short time to prepare the course, and a very intensive realization of the course.

WELCOME MESSAGE IN THE FORUM:

- *Subject: Welcome to the Online Learning Course*
- *This Forum and others which will be set-up in the future and are an important part of your online learning environment*
- *Please use this Forum to get familiar with the features and write and reply to messages.*

We wish you all to enjoy these two weeks.

Have a great time!!!

3 TEACHING AND LEARNING METHODOLOGY

3.1 Classroom Environment

Twenty five students from four different countries (Croatia, Kosovo, Macedonia and Serbia) attended the "Online Teaching" Summer Course.

How can we promote effective teaching and learning during a short and intensive Summer Course? The students were on their official vacation, the course was short but covered a wide syllabus, the weather was great out there (temperatures went above 40 ^{o}C on a daily basis) and the assigned classroom was small for all the students and extremely warm due to the PCs. This was achieved in several ways which can be summarized as:

- establish, nurture and maintain a relationship;
- promote variety both at the learning environment and learning activities;
- full integration of face-to-face and online components;
- integrating assessment into the learning process.

The classroom was equipped with computers, not new, but in good condition. They were connected to the Internet, but the connection was not really good. SPARK provided technical support and they were always ready to help. Another computer (Internet) lab for after courses hours student work was not provided.

Diversity was promoted for the teaching and learning environments during the Online Teaching course. From the PC Lab, to a conventional classroom or the amphitheatre and at the professors' hotel, several room layouts were used. The students became acquainted, in practice, with the different opportunities and possibilities for active teaching and learning. Occasionally a short traditional class (mainly listening) took place in the PC Lab and the amphitheatre was also used to promote a very active, cooperative and collaborative learning in a very effective way. At the hotel a Web Conference was staged and several activities were carried out and the learners were engaged doing mind maps related to one of their course projects.

Students had accommodation in the hostel, 20 min from the classroom. They also had extra social and learning activities during the ISUM: presentations and discussions – not connected to the Online Teaching course, campus fun events and nightlife, a visit to Ohrid Lake during the weekend, etc.

The complete environment and all the activities including all the 500 students from different countries, belonging to different religions and ethnic groups, and with different mother tongues, created a multicultural working environment. In this way, the difficult conditions in the small, too hot classrooms, including the busy agenda, were barely felt. The students adapted to these conditions very quickly, in a couple of days and it had no impact on their further work.

3.2 Approach to Attendees

On day 1 the course assignment consisted on sending the professors and email with the participants "background and expectations" concerning the course. Besides the feedback on course expectation there was also a need to establish the English and the computer skills level of the participants.

The first contact with students was used to introduce them to what was ahead and to find more data about them, with the aim to adapt the course to their average level. For this a few activities were planned:

- Filling in the initial questionnaire;
- Opening an account in the "Moonlight" LMS;
- Filling in the personal profiles in the LMS;
- Photographing students and uploading their photographs in the profile, using the exercise for reducing the size (compressing) of the photos with previously prepared Flash clip;
- In the end, each student had a task to send an initial email to assess students' expectations and knowledge of English.

The results of the initial questionnaire with a total number of 24 surveyees (2/3 of which were female and 1/3 male) were as follows:

- All students had easy access to PCs, they regularly used e-mail and searched the Web
- Most of them had easy access to Internet and used Word regularly
- 2/3 used PowerPoint, forums and Chat
- Half of them were familiar with Video Conferencing; they used Excel and accessed School's Web Site.
- Less than one fifth had a laptop, experience in E-Learning and were involved in Online assignments
- None of them had experience in Online shopping, Virtual Labs and Remote Labs
- One of the students had his/her own blog for more than 3 years and one was very interested in e-services and e-learning

From the initial mail (course expectations) it could be seen that most students applied because of the interesting topic, i.e. the alternative offered for learning. More than half explicitly expressed they wanted to learn more about Online Teaching and that they hoped it would help them in their further carrier. All the students had an average knowledge of the English language with the exception of 4 to 5 who had excellent knowledge, and 3 to 4 who had problems in understanding and speaking English.

3.3 Teaching in class & Teaching-Learning Online

Active Learning [6 - 14] was used to promote a high level of participation and interaction among all course participants. Individual, cooperative and collaborative methodologies were implemented and assignments given out on individual and workgroup basis.

At all levels the course participants were requested to bring their own background, cultural experience and multi-literacy into the discussions.

Each class / day was structured in the following way:

- Topic of the day
- Question of the day
- In-class activities
- Required reading (if any)
- Suggested reading (if any)
- Assignments

The "Topic of the day" was always discussed in the classroom or in the PC Lab, and usually it was at the beginning of the day (see box below for examples).

Examples for "Topic of the day":

- Introduction to the course and to the proposed methodology
- Traditional learning environment, distance learning, blended learning, e-learning, online learning. Characterization of the different teaching and learning environments: examples, advantages and disadvantages, common issues, etc.
- Introduction to Online Tools - Chat, Discussion Forum, Audio & Video, Wiki, Blog, (Movie, Audio, Text, Animation, Flash, etc.)
- Technology - Different LMS – Communication versus content platforms
- Web content usability - When, how and where?
- The role of the online moderator
- Synchronous versus Asynchronous learning
- Plus and minus on different learning teaching tools

The "Questions of the day" were posted on the LMS, as an online forum and they were "daily assignments". Every student had to start at least one discussion and to get engaged at least five times (overall) in the colleagues' discussions.

Example for "Question of the day":

- How many use Messenger, Skype, email, other?
- What are the reasons for online or distance courses enrolment?
- High versus Poor quality web content: How to distinguish?
- Is Online Learning for Everybody?
- What transfers to the Web?
- What to do / not do on a videoconference?
- Technology versus Pedagogy. Is there a balance?
- What about assessment criteria?
- Detailed analysis and critical thinking on tools and methodology

The "Topic of the day" and the Question of the day" were both partially supported by the resources provided online (LMS) and available for download [12, 15 - 26].

There were also course assignments namely:

Course Project 1 – Individual "Creating Personal Blog", and;

Course Project 2 – Group Work "Design your own online course".

The online learning environment is illustrated in Fig. 1 and some examples on the "Question of the day" taken from the LMS are transcribed bellow for different questions. Goes without saying that just a few examples are provided from the whole set of answers and threaded discussions that went on both online and in class.

Question: What are the reasons for online or distance courses enrolment?

"My personal opinion is that people choose the on-line learning to use maximally the possibilities given by the modern technologies and to use its advantages in order to self-develop their skills so needed to face the challenges of the modern high intensive society….".

"…Online courses can be considered as a part of the modern classroom approach, which is a popular method of learning world-wide…."

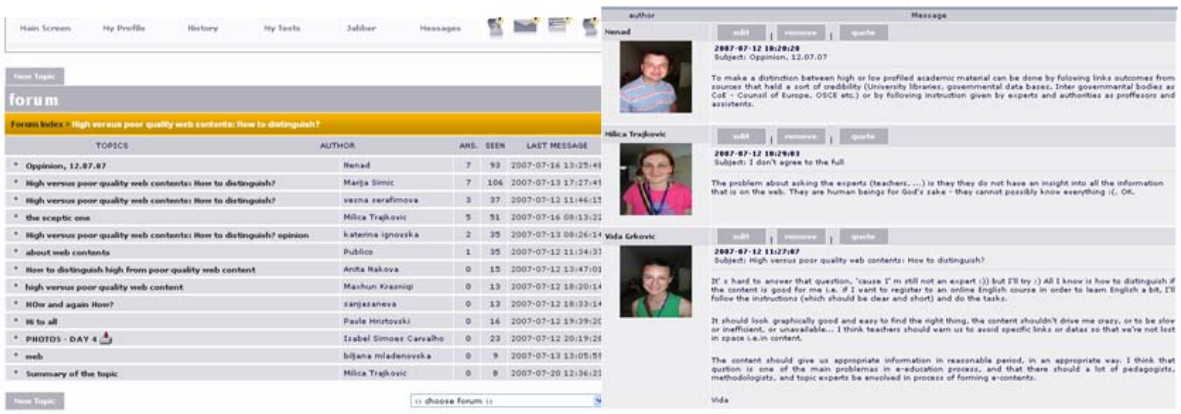

Fig. 1. Online Learning Environment

"… that learning online has many advantages and disadvantages. On the one hand people are registering for on line courses for this several things. Namely advantages are that: people might live far from course providers like colleges; they might have very little time to attend in the hours that they offer the courses; it's easy for them to sit in from of the computer and possibly attend small bite size lessons, especially for people with very little capacity for long concentration; listening to the course face to face means involving in different activities in which ones people can't participate because of the work, their children...; it may be easier to sit in front of the computer and perhaps stopping the lesson when they have had enough and returning to it several times until they are sure that they have covered the material. I would also like to mention the disabled people who don't have the opportunity to participate in the activities, etc.…"

Question: High Versus poor quality web content: How to distinguish?

"On the internet we can find a lot of different things that can help us to organize the learning. The thing is how to distinguish the good and the bad sources.

First of all it depend on the subject that we are interested in and it all depend on what you are looking for and what is the source of the write out on the page. Then it depend are the information current or are from several years ago. Also if you are looking at an article in the medical field that was not updated since 1995 you for sure will not look at it for more than two seconds and move on to something more relevant. As we all know the development in medicine, technology and other industries of such kind move fast, one day something is new one and the other day is already past. But on the other hand if you are looking into philosophy or history the older the facts perhaps closer to the time of happening.

Also it depend on the person who is looking, how is he aware of the things he is looking for it. I personally think that it is very difficult to distinguish the pages and the information that you get are they relevant or not, but we should be more persistent to search the good thing and separate from the rubbish. Please write me what do you think on this topic."

"I agree with whatever M. said: the two things about when searching in your field of science and when searching about things that are not to do with your field of science, so I have no better opinion about this but I have a lot of concern about this cause the only thing I have ever been told or advised about this- is to check or do some further research about the author of the publication, but what when there no author or other links for further info. I would like to know more about this."

"You have all came up with very good arguments on "High Versus poor quality web content: How to distinguish? I would like someone to volunteer to summarize (make a list) this relevant issue! It can be performed by two or three volunteers..."

"- The starting point for choosing reliable internet resources is to check the extension (.gov, .edu, .org …). In Macedonia "Marnet" are in charge for the .gov .edu and .org domains. It is an institution under the administration of the Macedonian Academy of Science (MANU). But be careful, approach this with utter attention, they are not always the guarantee for quality.

- We should have some pre-knowledge about the topic that we are going to research. This is easily done when exploring something in one's field of study where one is, more or less acquainted with the

'reliable' sources. But when exploring something new one should pay attention to some kind of sign or logo.

- Check the same topic from different sources to be sure for their reliability.

- You can also check the information with people on some discussion groups dealing with the related topic.

- Often use textbooks and hardcopies to check the information.

- Official web pages are pretty reliable.

- You can always ask advice from your tutors.

M & N"

4 LEARNING OUTCOMES & ASSESSMENT

While preparing the course the learning outcomes had to be established. By the end of this module students should be able to:

- Start using active learning (on- and off-line)
- Create and moderate a discussion forum
- Create a Blog
- Use synchronous and asynchronous communication when suitable
- Start the layout of an online or blended learning course

Evaluation was mainly based on in-class and online participation and interaction levels and on the delivery of two course assignments (individual and group work) as shown in Table 1.

Table 1. Course assignments and assessment

Individual Course Project	**30%**	**Course Project 1** – Set-up and develop your Blog (design, structure, contents, etc).
Group work (4) + final in class oral presentation and discussion	**30%**	**Course Project 2** – Design your online learning environment
Individual assignments	**40%**	**Online assignments** (daily) – online contributions on proposed topics; discussion and interactions (collaborative work)

For each learning activity the evaluation criteria was based on purpose built rubrics:

i) The Discussion Forum grading rubric

ii) The Blogs grading rubric

iii) The Online Learning design grading rubric

The whole course was very well accepted by the students and they were quite active during the lectures and online activities. Table 2 shows the final course grades for the 25 students attending this ISUM 07 summer course while Fig. 2 intends to illustrate the relaxing and friendly learning environment that was achieved for this hard working "Online Teaching" course.

Finally, the overall Student Evaluation Report 2007 [27] based on the feedback of 428 students is available online for those who might be interested.

Table 2. Discussion Forum grading rubric

Grade MK	Grade EU	Description	Students	%
10	A - Excellent	Outstanding performance with only minor errors	3	12%
9	B - Very Good	Above the average standard but with some errors	1	4%
8	C - Good	Generally sound work with a number of notable errors	9	36%
7	D - Satisfactory	Fair but with significant shortcomings	4	16%
6	E - Sufficient	Performance meets the minimum criteria	6	24%
5	Fx - Fail	Some more work required	2	8%
5	F - Fail	Considerable further work is required	0	0%
			25	**100%**

a) **b)**

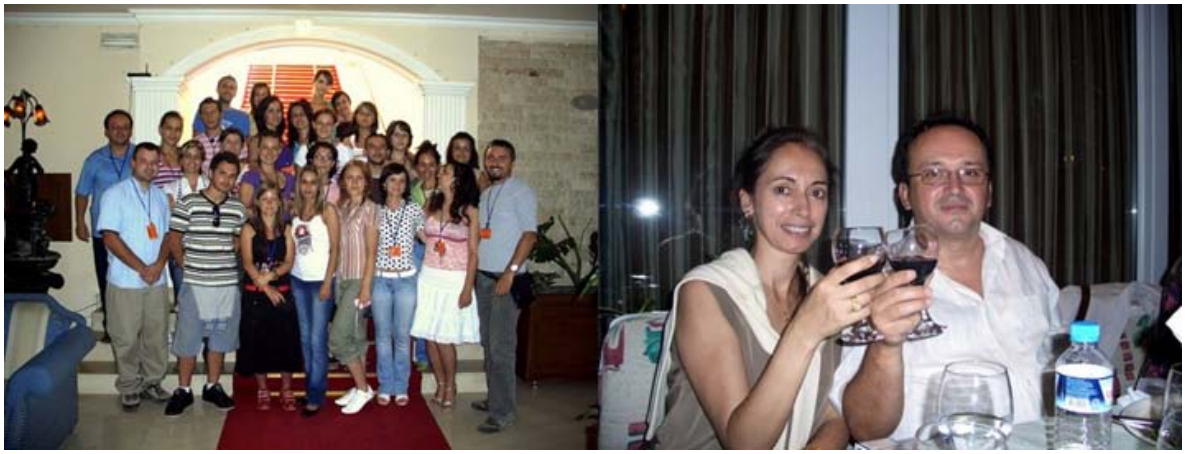

Fig. 2. The "Online Teaching" group: a) The whole class at the Hotel for the Synchronous vs Asynchronous session; b) The teachers at a dinner party for the whole ISUM07 participants (teachers, staff and students)

5 CONCLUSIONS

Overall the students were motivated and engaged in the course activities. It is important to acknowledge that the students' immediate feedback, both in class and online, in addressing the relevant issues related to the "Online Teaching" course also helped in setting a quite demanding pace for this Summer Course.

From the teachers' side these two weeks were both a challenge and a very rewarding experience. Certainly an experience we recommend others to undertake!

From the participants´ side a few transcriptions from the LMS will provide more relevant conclusions than any others that we could write.

"First, I would like to say that today's class was very interesting, and we had fun."

"All course was interesting and good and hope that in the future we will have something like this."

"It is important to me about class today that all what we learn is interesting and useful in future."

"…think that the topic was good, useful and it wasn't boring at all. With one word: excellent!"

"I have to admit, yesterdays class was a great experience for me, I wish I could have that kind of classes on my faculty, but anyways, I have learned a lot more than I expected. The structure of the class was well organized, …."

"I have to say that I felt very comfortable during the yesterday's class. We were working in a relaxed atmosphere and it was great…. and I learn it in a very interesting way".

"After this course, which gave me a better insight to what online learning suppose to look like, I think that there are not a lot of teachers who are ready to dedicate so much time on preparing and creating something like this."

Acknowledgements

The authors would like to acknowledge the assistance of Moonlight for providing the up-front and back-office support for the entire course as well as trouble shooting.

Acknowledgements are also due to Bill Williams for accepting the challenge of preparing a lecture for a web conference integrated with in-class activities.

References

[1] Information & Instructions for Visiting Professors. International Summer University Macedonia (ISUM) 2007, Academic Training Association.

[2] International Summer University Macedonia, http://www.spark-online.org/content/view/31/47/ (retrieved 18 March 2009).

[3] Project Summary ISUM 2005 – 2007), http://www.spark-online.org/content/view/50/1/ (retrieved 18 March 2009).

[4] Ohrid Framework Agreement, www.coe.int/t/e/legal_affairs/legal_co-operation/police_and_internal_security/OHRID%20Agreement%2013august2001.asp

[5] LMS by Moonlight, www.formoprojectos.pt

[6] Felder, R.M. (1997). Beating the Numbers Game: Effective Teaching in Large Classes. ASEE Annual Conference, Milwaukee, WI, June 1997.

[7] Felder, R.M. and Brent, R. (1999). FAQs. II. (a) Active Learning vs. Covering the Syllabus; (b) Dealing with Large Classes. *Chem. Engr. Education, 33*(4), 276–277.

[8] Felder, R.M. and Brent, R. Active Learning (Last retrieved 15th January 2009 at www.uwf.edu/cutla/workshops/Active%20Handout.pdf).

[9] Felder, R.M. and Brent, R. (2003). Learning by Doing. Chemical Engineering Education, 37 (4), 282-283.

[10] Paulson, D.R. and Faust, J.L. Active Learning for the College Classroom. (Last retrieved, 15th January. 2009 at http://www.calstatela.edu/dept/chem/chem2/Active/#share).

[11] Prince, M. (2004). Does Active Learning Work? A Review of the Research. J. Engng. Education, 93(3), 223-231.

[12] Carvalho, I.S. (2006). Promoting Active Learning in Mechanical Engineering. ASME International Mechanical Engineering Congress and Exposition, November 5-10, 2006, Chicago, Illinois, USA, IMECE2006-15664.

[13] Carvalho, I.S. (2007). Using a Home Energy Audit to Promote Active and Cooperative Learning. 4th WSEAS / IASME International Conference on ENGINEERING EDUCATION (EE'07), 24 - 26 July, Agios Nikolaos, Crete, Greece.

[14] Carvalho, I.S. (2009). Active Learning: Why, When and How? Accepted for publication in ID EST, Academic and Scientific Journal of Linguistics, Literature, Education and Culture.

[15] Betts, J.D. and Glogoff, S.J. (2004). Instructional Models for Using Weblogs in eLearning: A Case Study from a Virtual and Hybrid Course, Syllabus.

[16] Braga, W. (2001). A General Methodology for Engineering Educations Using the Internet. 31st ASEE/IEEE Frontiers in Education Conference, 10-13 October, Reno, NV, USA.

[17] Braga, W. (2002). Evaluating Students on Internet Enhanced Engineering Courses. 32nd ASEE/IEEE Frontiers in Education Conference, 6-9 November, Boston, MA, USA.

[18] Cubric, M. (2007). Using Wikis for Summative and Formative Assessment. REAP International Online Conference, 29-31 May, 2007.

[19] Felder, R.M. and Brent, R. (1999). FAQs III. Groupwork in Distance Learning**.** *Chem. Engr. Education, 35*(2), 102-103 (2001).

[20] Jedeskog, G. and Nissen, J. (2004). ICT in the Classroom: Is Doing More Important than Knowing?, Education and Information Technologies, 9:1, 37–45.

[21] Kearsley, G., Is Online Learning for Everybody?, http://home.sprynet.com/~gkearsley/everybody.htm

[22] McMahon, Joan D. What Transfers to the Web?, Sloan-C Foundation.

[23] Pincas, A. "Borderless Education", Adapted from a Chapter by Anita Pincas in Thomas, E. (Ed.) (2002) *Teacher Education - Dilemmas and Prospects*, Kogan Page Ltd, UK.

[24] Pita, D. (2003). Back-To-School for Educators: Personal Experiences in Learning How to Teach Online. Institute of Education, University of London.

[25] Quinn, C.N. (2006). Making It Matter to the Learner: e-Motional e-Learning. The eLearning Guild's, Practical Applications of Technology for Learning, 3 April.

[26] Winograd, D. "Guidelines for Moderating Online Educational Computer Conferences", http://www.emoderators.com/moderators/winograd.html

[27] ISUM Student Evaluation Report 2007, **http://www.spark-online.org/images/stories/codes_of_conduct/isum_student_evaluation_2007.pdf** (retrieved 20 March 2009).