

Information Society Studies in Practice – a Networked Learning Case Study: student needs and feedback in the NETIS project

Chris Sadler

School of Computing Science, Middlesex University, c.sadler@mdx.ac.uk

Tarmo Kalvet

Praxis Center for Policy Studies, tarmo@praxis.ee

Abstract

The Network for Teaching Information Society (NETIS) consortium has designed an Information Society studies curriculum aimed at university undergraduates. Courses can be delivered in various pedagogic formats including (appropriately) networked learning. NETIS has consulted students prior to developing this curriculum and trialled the learning materials in different contexts. The results of the consultation survey and the design of the monitoring instruments are discussed in this paper and some preliminary results from the trials are reported.

Keywords

Network for Teaching Information Society (NETIS), information society studies, networked learning, students, case study

Introduction to NETIS

The *raison d'être* of the NETIS (Network for Teaching Information Society) consortium is based on the following precepts:

- Citizens will need empowerment in information technology in order to live full civil lives in the European Union of the future.
- The best way to initiate this empowerment will be to introduce Information Society studies to future graduates across a wide range of disciplines.
- To make it possible for this to be widespread, online teaching methods will be needed.

To achieve its aims the NETIS consortium has devised a curriculum which allows university undergraduates to explore the information society from various viewpoints including the political; societal and cultural; commercial; technical and educational. A textbook has been prepared covering all these topics and each of the chapters has been incorporated into learning materials on a *Moodle* website. These are supplemented, for comparison purposes, by state-of-the-art reports drawn from the various European countries engaged in the partnership.

The consortium is trialling its curriculum in some of the partner countries (England, Greece, Hungary and Slovakia) with students studying different disciplines, at different educational levels and using a range of pedagogical approaches. Some groups will experience a fairly conventional journey through the curriculum, with traditional lectures supplemented by the online learning materials. This mode has been characterised as *e-learning 1.0* (Downes, 2006) and it can be regarded as an efficient method of transmitting knowledge. However, as has been noted (Bessenyei, 2007), the NETIS consortium believes that the 'knowledge workers' of the future need to learn not only how to receive (and use) *existing* knowledge, but also how to create *new* knowledge. To secure this, NETIS believes that a new pedagogy is needed.

e-Learning 2.0

For most of history, most scholars have regarded the world as an objective reality, and knowledge about various aspects of the world to be external and, in some sense, absolute. The business of learning can then be regarded as a process of internalising knowledge – making personal some part of ‘the body of knowledge’. Research, in the sense of doing original work can be termed ‘expanding the frontiers of knowledge’. Around the middle of the twentieth century the post-modernists came to regard reality as something internal to each being, in which case learning becomes the process of constructing that reality, and knowledge becomes something relative. In either case, wherever reality might lie, the learning was always internal – something happening in a person’s head.

In a world where information was limited and sources of information scarce, external knowledge was a hard-won commodity no matter what philosophical stance one took. The ICT revolution, which has involved the digitisation of nearly everything and the internetworking of nearly everybody, means that information is no longer difficult, expensive or time-consuming to come by. As a result we have the phenomenon of the ‘knowledge worker’ who provides value by ‘creating new knowledge’. Of course there have always been people who created intellectual property, and we call them artists, scientists, inventors, geniuses. We still need them and they will always require their genius to function. Probably you cannot learn to be a genius. Knowledge workers, by contrast, create new knowledge by combining existing knowledge from diverse sources and solve problems not from first principles but by association with solutions to similar or analogous problems. Although it is seldom genius, it is still creative and possibly you can learn to be a knowledge worker. This is the thesis of a new learning theory known as *connectivism* (Siemens, 2005). In a sense when somebody learns they are ‘creating new knowledge’ internally. However, connectivism holds that knowledge workers’ knowledge (called *actionable knowledge*) is an external rather than internal process. Because a lot of modern information is rather ephemeral, educational institutions should develop skills in finding sources of information and making connections – “the connection that enable us to learn more are more important than our current state of knowing” (Siemens, 2005).

Although connectivism is not without its critics (Verhagen, 2006; Siemens, 2006) the NETIS consortium decided to try to use the networking tools available in *Moodle* (Moodle site) to promote a ‘university of convergence’ (Hall, 1995 as cited in Nyiri, 1997) using some connectivist features like the development of shared resources using a course dictionary, frequent recourse to topic-based discussion forums and an attempt to foster activities that would forge the weak ties (Jones et al., 2006) that only individual students can make with one another.

Student needs and expectations

Between January and March 2007 an online questionnaire (NETIS Student Survey Report, 2007) was administered to students at a number of NETIS partner institutions. The aim of the survey was to attempt to establish student attitudes towards an Information Society course and their requirements in respect of learning support materials. The sample of 492 was drawn from institutions in the five participating nations, namely Estonia, Greece, Hungary, Slovakia and the United Kingdom, and the participants were studying on courses ranging from information technology and computer science to public administration, social sciences and humanities, together with some business studies, economics and marketing students. Apart from this spread, no attempt was made to make the sample representative.

The sexes were roughly speaking equally represented and the mean age was 26.5 years. This figure was somewhat higher than expected although the distribution is far from normal (see Figure 1). Further analysis revealed that the long ‘tail’ of more mature students was drawn mostly from a few courses (public administration in Estonia, librarian studies in Hungary and a taught IT masters in England) demonstrating the growth of ‘life-long’ higher education learning as opposed to the conventional ‘one-shot’ dose at the end of adolescence. Only a quarter of the students were first-year students and as a whole the sample were experienced computer users (average 8 years) and Internet users (average 6 years). Most Internet usage was associated with social contact and entertainment (85% of respondents were frequent users), with learning and ‘satisfying curiosity’ cited as frequent activities by 75%. Since students

are not normally high-spending consumers, commercial transactions were unsurprisingly low on the list of uses. More surprisingly however, around 60% reported that they seldom enter chatrooms.

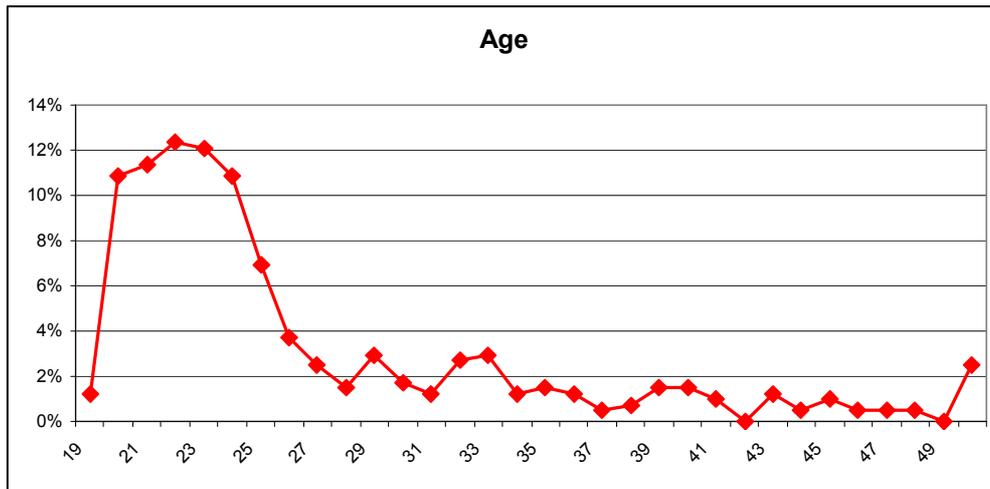


Figure 1. Average age of NETIS Survey participants: 26.5

The rest of the questionnaire was devoted to questions grouped as follows:

- those seeking information about respondents’ learning and study preferences;
- those seeking information about respondents’ attitudes towards Information Society studies in general and specifically their reactions to an Information Society textbook.

Study Preferences

Students were first asked to identify their most useful sources of information. Most popular were the Internet (53% of students listed it as their first or second choice) followed closely by the recommended course textbooks (52%). Surprisingly, only 32% listed their teachers as first or second choice and (more surprisingly) 21% listed teachers as the least favourite! In spite of this, 75% reported that they attend all or most of their lectures and seminars and the same proportion stated that they would like to have online contact (beyond the mere exchange of email) with their teachers. 62% would like such contact with their classmates.

The next questions sought to determine students’ preferred learning styles. Although the majority (60%) chose a course of conventional lectures supported by online materials (blended learning), fully a quarter of the students opted solely for the conventional lecture course. Only 4% would prefer an online-only course. When asked about preferred *offline* resources, students opted overwhelmingly (80%) for lecture notes or a dedicated textbook as opposed to more general library or other resources. Preferred *online* resources (see Figure 2) were revision notes or exam. hints (85%) followed by course information like pre-requisites and syllabuses. The least favoured online resource was chatroom facilities.

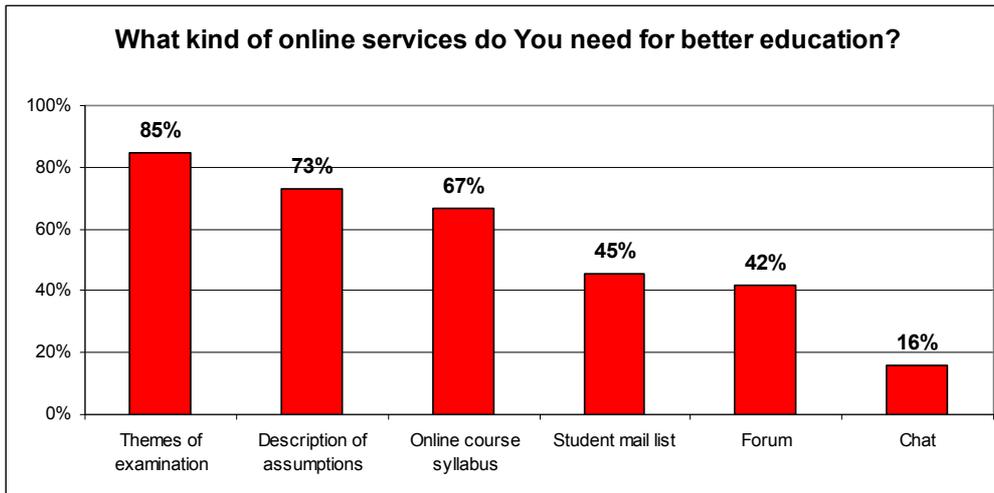


Figure 2. Online services for a better education

Information Society Study Attitudes

About half of the student sample reported that they had already taken an Information Society course although there was the widest national variation here with 82% of Hungarian students having taken such a course, but only 11% of the United Kingdom students. However, 56% of all students claimed to have an interest in the topic and 80% thought that a textbook on the topic would be desirable. 60% of the students wanted a printed copy of the material in addition to access to an online format (20% were only interested in a printed version). However, only 50% pronounced themselves willing to pay for such a book (see Figure 3). 90% would use an online version if it were available, but only 16% would pay for it.

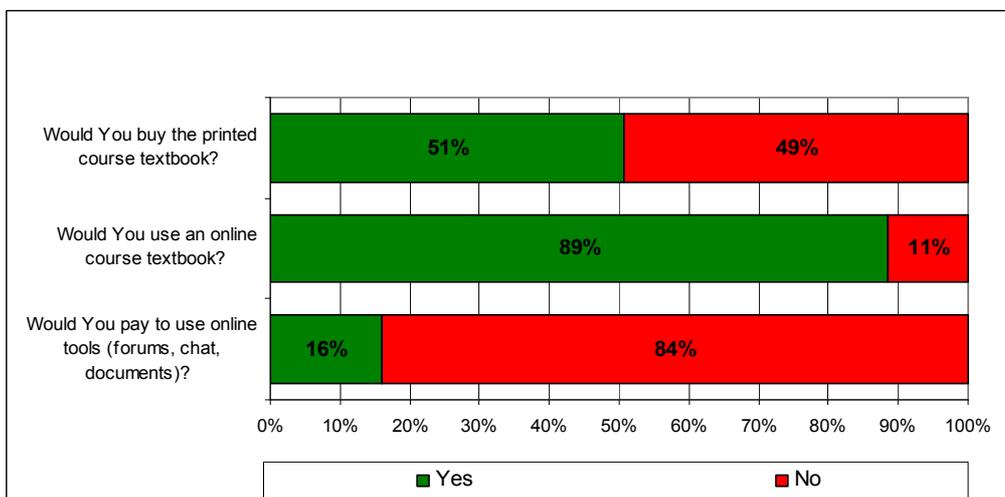


Figure 3. Potential purchasing preferences

It seems that e-learning 1.0 fits with the declared study preferences of the majority of our student sample, who are happy to use online resources to supplement the physical learning environment comprising face-to-face contact with lecturers and printed materials. Online materials were seen to be valuable in respect of convenience and currency but there could be difficulties with access (“*You can’t read it in the bus*”) and with the authority of Internet sources (“*I don’t think it is reliable*”). Little enthusiasm was shown for the characteristic features of e-learning 2.0, namely the discussion forums and chatrooms that serve to promote those weak ties so this is the challenge for the teaching trials.

Student feedback

In order to monitor the curriculum trials, a number of different instruments were developed. Since the precise format of delivery was not prescribed, from one trial to another, it was necessary to cater for classes undergoing a traditional course or an online *Moodle* course or various degrees of blending in between these extremes.

The initial online survey chosen was the Attitude Towards Thinking and Learning Survey (ATTLS) (Galotti et al. (1999), Attitudes). This seeks to discover students' attitudes towards and discrimination between connected knowledge (the kind of knowledge most likely to be gained through networked learning) and 'separate' knowledge. It consists of some twenty questions grouped into contrasting clusters along the lines of

'It is important for me to remain as objective as possible.'

and

'I try to think with people instead of against them.'

Respondents answer using a five-point Likert scale and those who score highly at the connected knowledge end of the spectrum would be expected to respond well to any e-learning 2.0 elements of their course.

It is intended to administer the second survey, dubbed the *Reactions* survey (Reactions), at the completion of each topic of the course (or chapter of the textbook). It asks students to reflect on their immediate learning experiences both in personal terms and group terms (via any discussion forum interactions). Students who answer these surveys conscientiously should give the project team valuable insights into the manner in which each topic has been presented, and should also show (through their interactions with fellow students) their development as improving e-learning 2.0 learners.

Finally there is the *Relevance* survey (Relevance), to be administered to those students who have completed the online version of the course. This questionnaire features 24 questions answered with a five-point Likert scale. The questions are grouped under six headings as follows:

- Relevance – of the course material (hence the survey title).
- Reflective Thinking – about various aspects of the student's experience.
- Interactivity – two-way interactions with classmates.
- Tutor support – in terms of encouragement and stimulation.
- Peer support – in terms of encouragement and stimulation.
- Interpretation – questions about the clarity of written communications.

Broadly positive responses to these questions will serve as an endorsement of all aspects of the trials, both the content and the conduct.

Initial teaching at some centres started in September 2007 and finished too close to the publication deadline to permit detailed analysis of the survey questionnaires. However, tutors have given interim anecdotal reports below.

Eotvos Lorand University of Sciences, Faculty of Social Sciences (Budapest, Hungary)

Administrative information

Semester has started at September 2007, and will end in January 2008 (with the exam period). Participants were students in sociology (mainly in 3-5th years). 32 students started the course. Two of them left the group in the first weeks. Classes were held by Robert Pinter, except the class on technology (held by the author of the chapter, Attila Kincsei), and culture (held by Bence Kollanyi, a PhD student). The entire semester was focused on the NETIS curriculum, with 13 classes. The first class was an

introduction to the NETIS project and explained the basic conditions of the course, structure of class, exam etc.

The entire course textbook was taught except the last chapter.¹ Students could have a free copy of the printed book in Hungarian, or could use the NETIS Moodle. Approximately half of the students asked for the printed version. Faculty library also received several volumes of the book.

Registration in Moodle was obligatory, but using Moodle was elective. With these conditions, only one student made comments in the system, students mainly did not use Moodle, or used it only as the source of texts (passive usage).

Students can have a grade based on their class work and presentation. Students without the presentation need to prepare 3 short essays (no longer than one page each), based on elective questions found on the NETIS Moodle.

Structure of classes

The course was a “classical”, normal semester with student presentations (two presentations for each topic, one introduction and one critique of the given chapter). Student presentations were mainly recorded in mp3 format (only in cases when students permitted the recording).

First two classes were taught by the teacher as an introduction to the course (chapters of Karvalics and Pinter). After the presentations of students there were short teacher comments.

Conversation took part in the last 30-50 minutes of the classes, based on questions of presenters, teacher and students, ranked by group voting. Memos of classes contain the questions and the number of votes.

In some cases (e.g. in topics of e-government and e-learning) group work was organized. Students were divided into 4 sub-groups, and had joint work, then presentations and a debate.

Finally, students filled out the same questionnaire at the end of all classes: what was the most exciting/boring, helpful/obstructing, surprising in the class, and they evaluated the given class with a grade between 1-10 with an explanation.

Overall opinion on the course

Students mostly liked the course, and attended the classes regularly (more so than for other, typical courses). Most of the class disliked the students introductory presentations, as these presentations served only as summary introductions and did not have added value. But some students stated that they did not read the chapter in advance because these summaries were enough for them.

However students liked the critique presentations especially where their classmates had formed independent opinions. Some students stated that they would have preferred lectures from the teacher and would have eliminated all students' presentations. Conversation was an important part for everybody – they liked to participate in debates, hear new arguments and share personal experiences. Students most enjoyed the group work – however they remarked that the first assignment was more exciting than the second one, maybe because it has lost its novelty.

In the next semester we plan to have an entirely e-learning course with students in sociology and then to compare the differences between the two methods and groups.

¹ There was not enough time to finish the book, due the class was on Wednesdays and a national holiday is happened to be on also a Wednesday in this Autumn.

Alexander Technological Educational Institution of Thessaloniki, Department of Informatics (Thessaloniki, Greece)

The NETIS course was introduced in the 6th semester to around 100 students. Clear learning goals and expectations on learners were announced. Three alternative modes of learning were offered, namely

- *traditional teaching/learning* (1 hour theory presentation by educator per week with final exams at the end of the semester)
- *active learning* (working singly or in pairs, students produce in total seven papers (chosen from a list of 35 subjects grouped under seven headings) written according to conference requirements; they present the papers and take part in discussions).
- *Research-based* (working singly or in pairs, preparation of an Information Society subject to be included in the NETIS course materials).

During the first theory class the students were very reluctant to embrace the new way of teaching/learning. They felt enormously insecure about what was expected from them. However, after a few classes and repeated explanations of the new way of working the students made their choices.

Five groups chose to do the research-based version, found a subject, prepared the abstract in English with the help of the teacher and sent it to the reviewing committee. All abstracts were accepted and the students started work on their papers with frequent reviews by the teacher.

Ten groups preferred active learning and prepared papers (literature reviews) weekly. They seem very enthusiastic and take an active part in the presentations and communications. They all confirm that the course is very interesting and that they learn much more by searching for material, comparing sources and preparing the papers, not to mention the discussions. An interesting point is that the students who showed the highest level of resistance in the beginning became the most active ones. From the teacher's point of view the active learning is very challenging and requires a lot of work, to manage the whole communication process, to read all papers and to give constructive feed-back during the presentation/discussion sessions.

The rest of the students used the Moodle e-learning platform for reading the learning material including learning objectives, pre-tests, quizzes etc. Few students from this group come to the theory classes, only the active students seem to be very eager to learn.

University of West Hungary (Sopron, Hungary)

The students made extensive use of the interactive tools. They seemed to enjoy engaging in knowledge creation and enthusiastically monitored the growth of entries in the course dictionary. It was clear that they enjoyed sharing solutions with other students and groups and that they learned from this sharing. Finally they enjoyed creating ePortfolios of their own.

On the other hand, it was hard to organise effective knowledge sharing between the students as the knowledge exchange was often confined to technical issues such as how to organise the dictionary or the database. It was also difficult to involve tutors and student groups from other institutions in a common learning organisation.

To become familiar with the new technology and the new didactic paradigm requires a great deal of effort both from students and staff. To facilitate networked learning universities need to re-examine faculty workloads and traditional study. Likewise, where students from different institutions study together cooperatively, the respective accreditation regimes must be harmonised.

Conclusion

NETIS has designed an Information Society studies course which should be accessible to a wide range of university undergraduate students. NETIS hopes that some students may experience the course as networked learners. Although preliminary enquiries about students' preferred learning styles was not very

encouraging, it turns out that students can embrace this pedagogy with some enthusiasm, provided that the teachers are willing to put in the effort.

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