Driving online education: The Swedish Net University – a case study in purpose and pedagogy

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This paper maps the development of the Swedish Net University and raises theoretical and practical questions about its purpose and its effect on pedagogically sound e-learning. The paper analyses what happens when e-learning is driven from the top and universities are rewarded with money for putting their courses online. It also studies the effects of online availability of university courses for marginalised groups in society. It is clear from research undertaken for this paper that mature age, remote area, immigrant and female students have more opportunity to study because of the establishment of the Net University in Sweden. The extent to which social engineering was a factor in the government's decision to create the Net University is discussed in relation to this broadening of recruitment. The fact that the Net University is a virtual organisation which acts as a broker for courses is also studied. Some courses are specially designed to be offered online while others are traditional courses that are simply downloaded to the net. Contrasting the two enables the author to argue for a pedagogy of e-learning.

Keywords: educational paradigms, computer mediated communication, ICT policies and strategies

Background

The Swedish Net University was created in March 2002 in order to encourage Swedish universities to put their courses online. The Swedish government has invested heavily in Information Communication Technology (hereafter ICT) and according to Economist Intelligence Unit is one of the world's leading countries in terms of e-learning readiness. Despite this Swedish universities have been slow to go online. The government provided SEK 600 million (about AUS $100 million) in an effort to change this. Some of the money was spent in setting up the agency itself but SEK 500 million was given directly to the universities who agreed to put their courses online. In Sweden the government reimburses universities retrospectively for every successful graduate from the previous years. The exact amount differs depending on the subject. An a successful pass in arts might attract SEK 30, 000 while a similar pass in say the first year of a physics degree could attract up to SEK 80, 000. The government, irrespective of the subject gave universities SEK 90, 000 for each successful pass in a course that had been put online. This naturally encouraged universities to put many humanities courses online while a university such as Chalmers, which already received a high reimbursement was less interested.

Since 2002 over 35 universities and university colleges in Sweden have offered their courses online. The largest number of distance courses last year were offered by Mid Sweden University, (276), University of Gävle (191), Uppsala University (168), Lund University (140), Gotland University (139), and Umeå University (133). The range and number of courses offered by these and other universities is, however expanding rapidly. It is important to note that the Net University is really a broker of online courses rather than a university in its own right. It has created a database of the courses that can be accessed via its website and it helps students, via easy links, to enrol online in the course of their choice. The Net University's primary aim is to enable a greater number and wider range of students to obtain a university degree, using distance education. Information technology (IT) makes it easier for people from remote areas to study from home via the Internet as well as giving those who must work part or full time an opportunity to study in a more flexible manner than via on campus, nine to five lectures and tutorial. A course offered via the Swedish Net University is equivalent to the corresponding campus course. The institution offering the course is responsible for the quality of the course, with additional quality assessment provided by The Swedish National Agency for Higher Education. (The source for the above information comes from the Net University's homepage: http://www.netuniversity.se/)

The study

There are currently about 2, 700 courses offered via the Net University. In this study the author carried out a content analysis of a random sample of online courses offered via the Net University. This study was designed as a pilot for a larger project that aims to determine the pedagogical quality of courses offered online via the Net University. Twenty courses were analysed, half from the humanities and half from the sciences. Two criteria were used in the analysis. The first was the extent to which the course descriptions indicated awareness of pedagogical thinking in terms of an alignment between well written learning outcomes and assessment. The second was the extent to which to which the potential of ICT was used. In other words if the course was simply an uploaded version of a largely text based course it did not meet the second criteria. In addition to this content analysis the author asked twenty teachers from his own university about their views of putting their own courses online. The reason for this survey was that Chalmers has, as yet, not offered any of its courses to the Net University. It was suggested above that economics might be a large factor in this. Are there other factors? Is this an institutional decision? Would individual teachers be interested to make their courses available online given the right conditions?

Before providing the results of the study it is important to flesh out a little the notion of alignment between learning outcomes and assessment (Biggs, 1999). Since it was hard to determine alignment between outcomes and assessment in many of the descriptions that were analysed more attention was paid to the way in which learning objectives and outcomes were couched. While it is acceptable to generalise somewhat in writing one's objective it is very important in writing learning outcomes to let the students know exactly what they must do in order to demonstrate the knowledge and skill that warrants a pass in the particular subject. This seems simple common sense but it is only in the last couple of decades that university teachers have begun to focus on what the student does rather than on what the lecturer does (Mortimer, 1999; Cranton, 1992). As this study indicates there are still obvious shortcomings in this regard. In the descriptions analysed for this paper we defined 'well written learning outcomes' as those that revealed an understanding of Bloom's or Bigg's taxonomies, where verbs indicate the type as well as quality of learning that is expected.

Results of the study

Of the 20 courses that were sampled 80% of the course descriptions revealed a teacher centred approach. In most cases the descriptions spoke about how students would be helped to understand aspects of a subject. Even in some subjects that included elements of pedagogy the outcomes were expressed in terms of 'developing the student's understanding'. There was no attempt to define what was meant by understanding. And certainly there were very few examples of what students had to do to prove that they had understood something.

Although it is more difficult to argue alignment or lack of alignment from short course descriptions there were almost no examples of a clear alignment. One might have expected some cases in which the learning outcomes were mirrored in the assessment descriptions. This was not the case. General categories of assessment were given rather than indications of how, for example, the ability to demonstrate, explain, define, analyse, calculate or report on aspects of a subject would be tested.

In terms of the second criteria over three quarters of the study materials looked at were heavily text based. This was particularly so of some of the larger, more prestigious universities that offered their courses online. Some university courses (one for example in the area of management) made use of ICT to enable more pedagogical material. In other words by the use of links and some multimedia effects the subject matter was made more interesting and accessible. This is a value judgement on the author's part and would need to be tested in a more thorough investigation where students themselves were interviewed and their results analysed.

From the survey of Chalmers teachers it was clear that most of them did not see any advantage in putting their own courses online. These teachers had undertaken a course in pedagogy using a learning management system (a Norwegian product called Fronter) and although they appreciated the chance to submit assignments online and the opportunity to chat, join a discussion group or work on projects where they shared documents, very few of them made real use of these tools. Only when they were given a

specific task did they make use of the ICT potential of the learning platform. In their response to the survey they indicated that the reason they made so little use of Fronter during their course is the same reason that they would not put their own courses online. They simply do not have the time and what time they do have they prioritise for activities that are rewarded by their institutions and by Chalmers itself, namely, research.

Chalmers is a university that sees itself as a Scandinavian MIT. Just as the Massachusetts Institute of Technology values its on-campus activities, especially its research activities, above any online presence so Chalmers works hard to provide on campus accommodation for its students and build a strong cooperative research ethos within its institutions. The fact that it has not participated at all in the Net University's initiative is a confirmation of this. Although Chalmers has paid lip service to the concept of the 'Learning University' (Bowden and Marton, 1999) it is not at this stage ready to embrace new technology and new paradigms of teaching and learning. There are some teachers who indicated that they already provide online access to their courses by downloading material and maintaining homepages with extra links and information. There were two teachers who had gone even further and created some online exercises that used virtual equipment where students could test their knowledge and understanding (in this case of electromagnetic fields). They were the exception to the rule.

Discussion

The Net University has achieved its principal aim which is to make university education more accessible to a more diverse group of students. Mature age, remote area, immigrant and female students have been over represented among the users of the Net University's services. In setting up the Net University the social democratic government indicated that this was one of the purposes of establishing such an agency. The importance of increasing inclusivity has been noted earlier by Christie (1998); Göransson (1995) and Young (1998). After four years of operation the Net University is now part of a larger government agency called the Agency for Networking and Cooperation in Higher Education (the Swedish abbreviation is NSHU). After the initial monetary incentives are phased out it is expected that universities will continue to put courses online in order to win students in an increasingly competitive climate. As Sweden's economy continues to grow more and more school leavers are choosing to take on jobs rather than study there is a discernible decrease in the numbers applying for university places. This is the case today where there has been a drop of between 10% and 18% in enrolments to universities at the start of the 2006 academic year.

Not all of the older, more prestigious universities have placed their courses online with the Net University. Of those that have some appear to have simply uploaded courses rather than make an effort to truly adapt the material to an online format. The fact that neither Chalmers, nor its counterpart, the Royal Technical University (KTH) in Stockholm, have taken up the opportunity is significant. Both have little trouble filling their quota of students and although there has been no clear reasons given for the lack of interest their focus on research is a feasible one.

Table 1: Universities offering courses via the Net University

Online courses					
University	**Number in percent**	**Number of students**	**University**	**Number in percent**	**Number of students**
University in the West	18%	959	*Halmstad*	10%	597
Umeå	13%	2 476	*Borås*	9%	533
Skövde	11%	556	*Göteborg*	6%	1 683
Uppsala	11%	2 651	*Linköping*	5%	883
Lund	11%	3 206	*Stockholm*	3%	810
KTH	0%	0	*Chalmers*	0%	0

In the case of Chalmers undergraduate education, it could be argued that it has, until recently, put its faith in a pedagogical model that is characterised by activities such as lectures, tutorials and laboratory work. It is assumed that these activities will take place on campus. An important part of this pedagogy is to test and grade the quality of student learning by means of practical exercises and end-of-course, closed-book exams. The architecture of the university mirrors this not so 'hidden curriculum'. The medium of lecture

hall, tutorial room and laboratory is the message, and in two out of three of these locations, the lecturer and the tutor occupy centre stage and communication is usually one way (McLuhan, 2001). The quality of learning that occurs depends not only on the model described above but also on the quality of individual teachers and students. Lecturers, who encourage a surface approach to learning by setting poorly constructed exams, can breed 'imitation' scholars who neither love nor understand their subject (Sawyer, 1943). Until the second half of the twentieth century traditional university pedagogy worked quite well. The reason was that it served a small group of elite students. As wealthier societies needed and could afford a more skilled workforce the percentage of school leavers who went to university increased from one or two percent in the 1960s to more like twenty percent by the end of the century. Today countries like Sweden hope to send half of their student population to tertiary institutions.

Changes in university demography mean that more and more students need assistance if they are to pass the sort of exams that were set for earlier generations. Both on and off campus there are fewer wealthy dilettantes and far more vocationally oriented students. An on-campus pedagogy designed for an intelligent elite does not suit a mass influx of students, more and more of whom will study online. An important remedy is to start thinking in terms of the student rather than the teacher and to construct courses that are constructively aligned so that students can see clearly what they must do in order to acquire the knowledge and skills required to demonstrate mastery of a subject (Biggs, 1999; Ramsden, 1992). Online courses, offered via agencies such as the Net University, are part of a government strategy to broaden participation in tertiary education. If the quality of that education is to be maintained then it is essential that online courses are pedagogically sound and make full use of the educational potential of ICT (Christie and Ferdos, 2004; Koschmann, 1996; Laurillard, 1999). ICT offers enormous opportunity for presenting study material that is not only constructively aligned but also varied in its content and levels of difficulty so that it appeals to different learning styles and different intelligences. As in all organised educational enterprises the people concerned must work together, giving each other encouragement, support and feedback. Teachers bear the greatest responsibility here. It is their job to facilitate learning and they can do that best by ensuring their course material motivates students to learn and activates them during the learning process. Since the smooth use of ICT as an educational tool requires support from administrators, educational technologists and technicians good online teachers will also have to manage and cooperate with a new network of people. In an age where there will be more and more Net Universities (Kargidis et al., 2003) changing one's teaching and learning paradigm is both challenging and a rewarding.

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