

# Learning, technology and history

by

ARNE SOLLI AND FRODE ULVUND\*

## Introduction

Since the late 1980's the number of students both in Norwegian universities in general as well as at our History Department at the University of Bergen increased substantially. This influx was due to both larger birth cohorts and the government's use of the educational system to camouflage youth unemployment. The trend coincided with an incipient change in pedagogical methods, or at least an understanding of the necessity to change. At many university faculties there was a deep concern that Norwegian undergraduates wrote too few papers. Among history students the main activity was the passive reception of facts and opinions expressed by lectures. There was also

- 
- \* Frode Ulvund, b. 1969, graduated at the University of Bergen in 1994 and has been employed by the same institution since. He was at first primarily engaged in developing computer assisted teaching tools on cd-rom and web. More recently he was appointed as Associated Professor in historical informatics. Currently he is working on a prosopographic study on criminals in 19th Century Bergen, deploying computer methods in nominal record linkage. Recent publications are: "Online Teaching Applications - Norwegian Examples" in *The Journal of the Association for History and Computing*, 1(1), June 1998; "Hyperlectures - teaching on demand" in: *The ulTiBASE Journal*, September 1998; and "Internet and Teaching - a Hyper-lecture" in *The ulTiBASE Journal*, September 1998. Arne Solli, b. 1962, graduated from the University of Bergen in 1987 (BA in Computer Science) and after working as a system analyst/programmer till 1993 graduated in 1995 (History). He is currently an Associated Professor in historical informatics. His main field of teaching is early modern and 19th century history and teaching historical informatics. He has also been involved in developing the Digital Archive and learning tools on the WWW. His main field of research is a study of household formation using material from 19th century Western Norway. His most recent publication is "Hypertext 'papers' on the Web: Students confront the linear tradition?" in *The Journal of the Association for History and Computing*, 1(2), November 1998.

*Historia* 44(2), November 1999, pp. 257-75.

the practise of the mere reading of textbooks. The students' ability to express historical understanding in their own words, both orally and in written text, was limited. This caused many to fail their written exams. The History Department at Bergen University wanted to change the students' focus from passive learning methods, where the students consume information from lectures and textbooks - the learning by hearing-principle - to active learning where the students had to produce and question prevailing knowledge by writing papers - the learning by doing-principle. Traditionally this approach was part and parcel of the essay seminars supervised by a teacher. The implication was that the lecturer had to spend more hours of work on the individual student.

However, while the number of students was increasing, the government did not want to employ more teachers or make other additional resources available. The teachers were already overworked and found that time to do research became increasingly limited. In a way the History Department was in a Malthusian trap.

There were more challenges to come. The new Labour government (1990-1997) wanted to reform the educational system at all levels, and an important change concerned the use of information and communication technology (ICT) in teaching. ICT had to be integrated literally at all levels of education and in all subjects.<sup>1</sup> Computers were no longer the tools of mathematicians - they had to become useful tools in all subjects which included the liberal arts.<sup>2</sup>

The History Department had to find a solution to the problem of providing increasing numbers of students (about 300) with effective tuition. The challenge was to devise teaching methods that involved more discussions and writing, while the teacher/student ratio had to drop. To us, this adjustment meant increased emphasis on ICT. It was not just because cuts in funding made it necessary to reform. Neither was it just as a result of the prevailing attitude towards implementing ICT in teaching. We believed that Computer Assisted Learning could improve teaching, basically by increasing the writing activity.

In this article we will discuss the use of ICT in teaching history in general and at undergraduate level in Norway. We will present our methodological and technological solution for practical implementation of ICT and finally our experiences so far.

---

Ministry of Education, Research and Church Affairs, IT in Norwegian Education: A Plan for 1996-1999. <http://odin.dep.no/kuf/publ/it-plan/eng/index.html>

2. OLE BRISEID, "Comprehensive Reform in Upper Secondary Education in Norway: a retrospective view European" in *Journal of Education*, 30(3), 1995. Ministry of Education, Research and Church Affairs (KUF), This is reform 97 - the Compulsory School Reform, <http://odin.dep.no/kuf/publ/gr97/96nr04e.html>

## Background: Current Educational Trends

### Hardware and Connectivity

In the past 40 years the mainstream educational trends in Norway seem to have changed every decade. Computer technologies changed even more dramatically. Both educational trends and technology shape the way we do day-by-day teaching. Before the reader can comprehend how we have chosen to find solutions to our problems, it is necessary to examine the core of current educational trends.

For many Western governments education and technology have high priority. There seem also to be a strong focus on hardware and especially connectivity, on installing computers connected to the internet in every classroom. In May 1997 President Bill Clinton said:

Our Technology Literacy Initiative ... will help us finish the job of wiring every classroom and school library to the Internet by the year 2000, so that children in the poorest inner-city school districts and in the most remote rural schools have access to the same vast store of knowledge.<sup>3</sup>

In another radio address earlier that year he also stressed:

(I)t's not enough to connect every school; we must connect every classroom and every library as well.<sup>4</sup>

In October 1997 also the British Prime Minister, Tony Blair, held a speech at the Labour Party's conference in Brighton. In his speech he pledged that by year 2002:

every one of Britain's 32 000 schools will have modern computers, the educational programmes to go on them, the teachers skilled to use them, the pupils skilled to use them connected to the information super highway for free and with phone bills slashed to as low as £1 per pupil per year.<sup>5</sup>

To conclude: There are a strong convictions that the use of computer and internet can raise the quality of teaching. Pauline McCormack argues that the foundations for this axiom is hardly discussed by scholars.<sup>6</sup> We may justifiably ask whether infrastructure alone is sufficient.

---

3. Radio address by the US president on 17 May 1997:  
<http://www.pub.whitehouse.gov/urires/I2R?urn:pdi://oma.eop.gov.us/1997/5/17/1.text.1>

4. <http://www.pub.whitehouse.gov/uri-res/I2R?urn:pdi://oma.eop.gov.us/1997/2/8/1.text.1>

5. Quoted from ITN: "Blair's Gates-way to the superhighway"  
<http://www.itn.co.uk/Britain/brit1007/100703.htm> [Accessed 25 October 1999].

6. Pauline McCormack: "Virtually History: The Use of On-line Communications in Higher Education" in *The Journal of the Association for History and Computing*, 2(1) April 1999.  
Url: <http://www.mcel.pacificu.edu/JAHC/JAHCIII/ARTICLESIII/McCormack/mccormac.htm>

## **Pupils as scientists**

In Scandinavia - where central government planning has a long tradition - similar ideas to those of Bill Clinton and Bill Gates have been put forward in government planning for IT and Education. Examples are Denmark's *Action for Change - the IT Policy Plan 97/98*,<sup>7</sup> and Norway's *IT in Norwegian Education: A Plan for 1996-1999*.<sup>8</sup>

In Norway the IT plan has been developed parallel with new revised educational guidelines.<sup>9</sup> This includes *Reform 94* for upper secondary schools (16-18 years old) and *Læreplan 97* for the primary schools (6-15 years old). Though these plans are made for primary education and not for higher education, it has an impact on higher education in two ways. Firstly, the pupils becoming students have a 'new' background. Secondly, some of our students will soon be teaching at primary education institutions in terms of the new policies and guidelines.

These new educational reforms have two important aspects. There is an emphasis on the so-called "Theme-based learning and project work". *Inter alia* it allows the teacher to combine different subjects or fields like maths, English and history into a larger teaching-project in order to see the different subjects in relation to each other, to show the cross-connections.<sup>10</sup> The objective is to change the teacher's role from an 'oracle' that tells the facts, to the role of an advisor, which directs or guides the pupil towards gaining knowledge and understanding.

One goal is to achieve more critical thinking, and teach the pupils how knowledge is created instead of just learning facts. Pupils, even at lower levels, should be 'small' scientists and researchers. Consequently they should not be satisfied with learning facts, but find, create and examine the sources of knowledge. Pupils and students must also be able to critically examine the interpretations of professional historians.

For the discipline of history this means that the pupils and students should not only learn 'historical facts', but also use historical sources, historical methods and produce historical knowledge themselves. One may justifiably ask whether it is too ambitious for 12-18 years to become 'real historians'. How can you make 12-18 year old pupils understand how historical knowledge is

---

7. Forskningsministeriet, Action for Change-IT Policy Plan 97/98, <http://www.fsk.dk/fsk/publ/1997/action97/>

8. The Ministry of Education, Research and Church Affairs, IT in Norwegian Education A Plan for 1996-1999, <http://odin.dep.no/kuf/publ/it-plan/eng/>

9. OLE BRISEID, Comprehensive Reform in Upper Secondary Education in Norway: a retrospective view European, *Journal of Education*, 30(3) 1995. Ministry of Education, Research and Church Affairs (KUF), This is reform 97 - the Compulsory School Reform, <http://odin.dep.no/kuf/publ/gr97/96nr04e.html>

10. Ministry of Education, Research and Church Affairs (KUF), This is reform 97 - the Compulsory School Reform, <http://odin.dep.no/kuf/publ/gr97/96nr04e.html>

produced, when even undergraduates in History at the university have problems with doing exactly that?

There are even more ambitious goals. According to the IT plans, the new focus on teaching must be combined with the use of computers as an integrated tool. This is a general goal. It should be implemented at all levels of education. The plans however say nothing about connectivity. Nor do they guide teachers in how to utilise ICT in a fruitful way in the process of teaching. The main criticism of the educational reforms is that they are too ambitious. They are indeed when it comes to the history part, and they are even more so when it comes to implementing ICT in teaching.

The United States is well advanced when it comes to ICT technology. There are however certain backlogs when it comes to the actual implementation of ICT. Some schools and universities are well off. It is however mainly the private institutions. The government or state funded institutions often lack both (modern) computers and networks. Large-scale development is not being done by institutions, but instead by commercial companies. Examples are *Lotus* and *RealEducation*. Both have an integrated on-line communications application. These companies do not only cater for schools and universities. Instead they focus in on a wide audience of customers. A major customer has been a grouping concentrating on the certification of golf equipment salespeople!

History departments do not play an active part in the development of tools, and teachers are to a large extent left to their own devices. Typical for implementation of ICT in teaching is a teacher who "has seen the light" and wishes to utilise the infrastructure available. A course is set up as internet-based, i.e. syllabus and other information is put on the web and the teacher-student communication is extended to e-mail.

There are differences in approach between Europe (EU) and the United States of America (USA). In Europe there is a somewhat greater focus on the content-side. Educational institutions have played an active role in shaping the content of the technology. An early and pioneering example is the HiDES-project (*Historical Document Expert System*) at the University of Southampton, DISH (*Design & Implementation of Software for Historians*) and TLTP *History Courseware Consortium at the University of Glasgow*,<sup>11</sup> and the *Kark* project at the University of Bergen, Norway. Typical of the British initiatives has been an off-line approach, offering teaching applications on diskettes and soon CD-ROMs for very concrete historical topics.

---

11. HiDES Courseware is still used at the University of Southampton, but further developments seems to have stopped. A NISS (*National Information Services and Systems*) evaluation of the project from 1993 can be found at <http://www.niss.ac.uk/education/hefce/qar/q34-94.html>. Access DISH at <http://www2.arts.gla.ac.uk/History/dish.html> and TLTP History Courseware at <http://www.gla.ac.uk/~histltp/>

Examples of topics from the HiDES are: “Martin Luther and the German Reformation: Which road to salvation?”, “July 1914 - The road to War?” and “The influence of the British position on the decision-making of the continental powers”. Examples from the TLTP Courseware is “Mass politics and the revolutions of 1848” and “Migration and the early modern town”. The applications contain maps, graphs and sources. It also embraces the learning-by-doing principle.

By institutionalising the projects and the goals, the projects are less dependent on single persons. It also increases the possibility to get government funding. In this way non-commercial systems and systems built with a stronger bias on teaching demands have been developed.

During the 1990’s there has been a marked shift in focus and interest amongst computer literate historians. At international conferences of the Association for History and Computing, there has been a trend away from discussing computers in historical research. Instead they are discussing computers in teaching and the dissemination of information. The American Association for History and Computing was established in 1997. From the outset the main focus was on teaching - a theme which was given substantial prominence. It was much the same at the 1999 conference in Philadelphia. The preliminary program suggests that education will still maintain pride of place at next year’s conference in Waco, Texas.<sup>12</sup>

We may thus conclude by accepting that during the 1990’s there has been a change in teaching methods in history. There has been a greater accent on exploring the new technology as teaching tools. In Norway (and Denmark) this has resulted in IT plans which focus on integrating computers as tools in all subjects and all levels of education. A computer is not only a tool for mathematicians. The role of the teacher must change especially in the primary educational levels - the teacher is not an oracle but an advisor. The role of the pupil changes - the pupil/student is not a consumer of historical (and other) facts but a producer of facts and interpretations. The consequence is a stronger focus on sources of knowledge (historical sources) and how interpretations or knowledge are made (methods). The goal is to get students that are “critical” and “analytical” with a stronger “holistic” perspective in order to “meet the challenges of the future”.<sup>13</sup>

In our opinion, the most fruitful implementation of ICT in teaching history should have three modules: resources (inter alia sources, literature, maps and figures); teaching applications (pushing and pulling knowledge, preferably utilising the resources); and tools for communication, for discussions and

---

12. Url to the international AHC: <http://odur.let.rug.nl/ahc/>, The American AHC: <http://www.theaahc.org/>. Url to the Journal of the Association for History and Computing: <http://mcel.pacificu.edu/JAHC/jahcindex.htm>. The topics for next year’s AAHC conference: [http://www.cets.sfasu.edu/AAHC/Spring\\_2000/AAHC\\_themes.htm](http://www.cets.sfasu.edu/AAHC/Spring_2000/AAHC_themes.htm)

13. <http://odin.dep.no/kuf/publ/gr97/96nr04e.html>

dissemination to facilitate co-operation and comparison. Developing such tools is rather resource-draining and must be the responsibility of institutions, not something we can expect individual teachers to employ on their own. The Department of History at the University of Bergen has been working on integrating ICT in teaching since 1992. What follows represents our experience in the field.

### **Studying history in Norway**

At Norwegian universities history is usually studied a full-time. Students, as a rule do not, register for any other simultaneously. One semester gives 10 credit points, and a basic level of history consists of a 10 credit points course in Norwegian history and a 10 credit points world history course. In the spring term the History Department offers lectures in world history and then in the autumn term follows Norwegian history. In order to proceed to the intermediary level in history, students need both these courses (20 points). To take an exam the students need to do a compulsory essay, approved (but unmarked) for each course. The final assessment is based on an eight hour written exam where the students have to write one out of two given essays, normally with attached primary source material. There are no oral exams or portfolio assessments.

In the past, the students could follow an essay seminar. The students, about 20 in each seminar, met under the supervision of a teacher to discuss essays written by fellow-students in the group. The frequency of these meetings only allowed a student to have one essay discussed throughout the semester. This meant that a student could take an exam and only write one essay during the semester, or two, if he or she also participated in a seminar. With all the assessments based on the one essay they produced on the day of the exam, it is obvious that there was a striking discrepancy between our traditional teaching methods and assessments. The students could well have been loaded with historical information when they were examined, but as a rule they had little experience in the genre of academic writing. In other words, in the exam we were asking for skills we had not really taught them.

At the start of the 1990's, before the implementation of ICT, approximately 30-35% of the students starting the history courses did not pass their examination, either because they did not attend the exam or merely because they failed outright. This state of affairs was not acceptable and we knew it was to a large extent the result of the students' lack of suitable skills to articulate their knowledge. We had to change the students' priorities from the passive reading of textbooks to the active production of knowledge through writing and discussions. But how could we do this when the influx of students actually meant lesser teaching resources per student?

We identified the solution to our problem as the need to facilitate active student participation by implementing ICT. As it happened, this was politically correct and made available sufficient financial resources from the government.

#### **The first step into ICT - the *Absalon*-project<sup>14</sup>**

Our department started the *Absalon*-project in 1992. The project was named after a famous Norwegian scholar of the sixteenth century, called Absalon Pederson Beyer. The leading force behind this project and the use of ICT to the present day has been Associate Professor Jan Oldervoll. Some of the essay seminars were called Computer Assisted Learning Seminars (CAL-seminars) and were offered a special text editor (*Absalon*) programmed by Oldervoll. The *Absalon* software was a tool for both outlining and editing. The students were forced to structure their text in detail before adding the body text. The program was installed on a local network, and was also used to distribute essays between students. The students in CAL-seminars produced other written material such as lecture notes and discussions of textbooks. All in all they wrote more than what students outside the CAL-seminar did.

In 1995 we also included the internet and world wide web in this activity. We still used the *Absalon* writing tool, but moved the distribution of essays to the internet as well as establishing online electronic seminars, accessible not only for the CAL-students, but for anyone interested. The electronic seminar remained mainly a forum for the CAL-students, but at least some of the faculty as well as some students outside the university participated. The student essays could also be commented on internet, but this function was not much used as the students still met in seminars discussing the papers supervised by a teacher. In the beginning we only offered CAL-seminars to a limited number of students, because there were only a few computers and limited space available. This improved and soon all students who wanted to participate could do so.

We found a significant difference between the CAL-students and the other students from the outset.<sup>15</sup> For several semesters, hardly any of the CAL-students failed the exam, and they had better grades too. The difference was quite remarkable.

Several factors help to explain this state of affairs. The students participating felt privileged. They had better access to computers, software and eventually also the internet than most other students at the university. The CAL-students

---

14. A. Andresen, J. Oldervoll & P.B. Ravnå: *Absalon - an experiment in incorporating electronic tools in the teaching of history*, Paper given to the CHC-95 - Luxembourg 20-22 April 1995. URL: <http://www.hist.uib.no/papers/ian/luxembou.htm>.

*Ibid.*



also had their own localities where they met to work and discuss, partly isolated from the rest of the students. This intimate working environment facilitated the formation of social networks as well as academic co-operation. The new technology also had the benefit of novelty. Students were fascinated and interested. The CAL-programme increased the students' motivation and they, without doubt, worked harder than students outside the project. It was also a matter of the hen and the egg situation. Did the students do well because they participated, or did they participate because they were more motivated in the first place? We don't know, but there is little doubt that the implementation of ICT alone was responsible for the difference.

As the CAL-seminars were offered to all students and the technology had lost its interest as a novelty, we found the differences to even out. We had problems with students who were not very motivated to study in the first place, and their prime motivation for participating in a CAL-seminar was as a result of easier access to internet than writing essays. We were in a situation where we had to revise the way the CAL-seminars were organised. They once again had to be turned into a forum for writing and discussing more than a mere opportunity to surf the internet. We were using financial and human resources on students who had little interest or motivation in utilising these resources for learning. We had to find a way to reorganise the seminars in order to channel our resources to the motivated students.

By 1998, the department could no longer financially afford to offer essay seminars. This included CAL-seminars and regular seminars. We were still convinced that exercises in writing were essential for doing well to the exams, but we simply had to cut down on the teaching resources. The result was *Kark*.

### **The second step into ICT - *Kark***

It was clear to us that we had to offer some kind of seminar orientated activity to the students. One condition was however that it had to be without a financial investment in supervising teachers. We organised the students into workgroups of about ten. Each group organised its own activities. They distributed tasks, such as essay writing and commenting among themselves. Each student had to write three essays excluding the compulsory essay that was still required to pass before taking the exam. In addition two fellow students had to comment on every essay. This implied that each student would ultimately have to comment on six essays.

The activity of the workgroups was partly conducted on the internet. They published their essays and also commented on each other's work on the net. The workgroups also met once a week to discuss the essays face to face. Feedback from lecturers came as comments on their essays on the internet. This however only occurred after two students had commented on the study.

Thus, the workgroups were organised by the students themselves, and they had to take responsibility for their own learning. Teacher involvement was thus only activated once there was evidence of student activities.

While Absalon was a 16<sup>th</sup> century scholar, Kark was equally famous. He was a slave in the Norse sagas dating back to the end of the 10<sup>th</sup> century. *Kark* was the name of the software that handled the student essays on internet and the discussion seminars. It was basically the 'slave' that did all the work. When we developed a new integrated system for writing, commenting and discussions it made sense to name it *Kark*. After all, it was doing all the work. In the old system, all the activity on internet was open. In *Kark*, it was necessary to log on to the system, though it could be accessed by guests.<sup>16</sup> Once the students were logged on they were presented with their own homepages. This homepage had three components which comprised: Texts (*Kark Essay*); Discussions (*Kark Debate*); and an organiser with messages and a calendar.

As default, the student was presented with messages, both personal as well as messages for the workgroup and general messages relative to the whole course. Each student could send personal messages to other students in the workgroup, or messages to the whole workgroup. The teacher could send messages to individual students, workgroups or the whole course. At the beginning of the course, the students within a workgroup divided the tasks among themselves and entered the essential information on their joint calendar. Any member of the group could update the activity in the calendar at any time.

### *Kark Essay*

The most important activity was the writing and discussions of essays. All the workgroups were given a number of essays with sources and material on the internet. The students wrote their essays in any word processor and saved the documents in the html-format. When the time came to publish the essay for the other students, it was done by means of a few easy mouse-clicks. The html-file was sent to a web-server and made available to the rest of the workgroup from the homepage.

Each paragraph in the essays ended with a pencil icon. If a fellow student, or a teacher, wanted to comment on the contents of a paragraph, all that was needed to be done, was to click on the pencil and then write a comment. This arrangement provided the commentator with a text-field where he or she could comment extensively. When the text was submitted, the comment would appear after the paragraph in italic with the name of the person who commented.

---

16. For more information about *Kark*, please confer to the website at the University of Bergen: <http://kark.uib.no/engelsk/>. This site also offers demos of the system.

The process, both for publishing and commenting, was simple and could be done with standard software. It was only required of the end user (the student) to have a web-browser such as Netscape Navigator or Microsoft Explorer and preferably a word-processor with the ability to save in the html-format. The simple software requirements were essential. It meant that the students could access the *Kark* system and do their work from any computer with internet facilities.

It was also clear to us that more and more students nowadays not only have a personal computer at home, but also access to the internet. Thus, the system does not rely on providing the student with special courseware or having them physically present at certain computer facilities with the necessary equipment.

The activity of the workgroups and of each student is monitored by the system. If students fail to follow up on their duties (writing four essays and commenting on six), we have methods of sanction. We cannot deny them the right to present themselves to an exam, but we can deny them access to the system and computer facilities.

### ***Kark Debate***

The increased emphasis on writing essays was one strategy in the process of shifting priorities which entailed getting the students away from the passive reception of facts through reading. A secondary strategy to a more active production of knowledge was discussing historical topics and problems in general. For these purposes the electronic seminar (called *Kark Debate*) was introduced. Each workgroup – apart from having its own internal electronic seminar, could also participate in the seminar for the duration of the course. In the general seminar the staff of the History Department, as well as the general web surfing public with an interest in history, could participate. Each student was given the opportunity to start a new discussion topic or contribute to an existing discussion.

The value of the electronic seminar soon became evident. It was good for the students to communicate with each other. The teachers normally ignored questions which had simple answers which could in any case be found in the textbooks. They also avoided giving answers that could be interpreted as ‘the correct answer’. Instead, teachers participated by posting questions or elaborating on problems which the students had to solve. By so doing they encouraged the students to discuss the issues among themselves. They soon realised that the teachers were not the oracle at Delphi.

Under operational conditions it became clear that an electronic seminar has several advantages: First the seminar is asynchronous. It is an advantage as it can be accessed and used when it suits both students and teachers (The same is naturally the case for *Kark Essay*). It is also a benefit to the lesser-experienced discussants. A face to face discussion benefits the experienced

student who has had training in tossing facts and opinions around quickly. Students, who are normally young people, or at least unfamiliar with this academic *genre*, generally lack these skills. The asynchronous discussions allow them to contemplate and spend time preparing their reply, consulting textbooks, sources or even discuss with friends. It is a smoother transition to the academic genre. It also gives the shy students better opportunities to participate. Asking a question in a lecture hall with maybe 200 students or even participating in a discussion within the smaller environment of a seminar, can be a barrier to many young people. Also, an electronic seminar is a transcript of a discussion, which can be useful not only to the active participating student, but also to others who may not have had the opportunity of participating when the activity in the discussion was at its peak. It is also possible to revitalise a discussion as the last discussion with activity appears on top of the screen. Thus, discussions among students from a previous semester can be the starting point of the following semester's discussion.

The electronic discussions proved to be most fruitful when the lecturers succeeded in integrating the lectures with activity on internet. The lecturer might present some provoking thoughts at the end of a lecture that he or she expected could possibly generate discussions on the internet after the lecture. The lecturer followed this up partly as a participant in the discussion on internet, but also at the start of the next day's lecture.

### **The experience with *Kark***

We have only used *Kark* in its present version one semester (Spring 1999), and the system has been under construction and revision until the start of this semester (Autumn 1999). Consequently, it is too early for any final evaluation of the system. However, some tentative deductions can be made.

### **Participation**

When the students registered on the new system, it was stressed that they had to conform to all the requirements. They also had to accept the measures of sanction. By doing this, we wanted to 'scare off' the students who were not motivated or simply were unable to put in the amount of work we required of them. This worked in the sense that a large number of the students refrained from registering for the course on the electronic system. In a group of more than 200 registered students, 132 signed up for the seminar at the end of January 1999. They had to research and write one essay already during the first week. This was partly to filter out students who were not really motivated. It was also because we found it useful as springboard to generate activity in the workgroups. In total 120 students complied. We also checked how many of the participants continued to write the second essay. As shown in table 1 a total of 14 per cent of the students who had written the first essay, failed to write the second. They then inevitably dropped out of the seminar. This was not more than we expected.

**Table 1. Participation**

	Students who wrote the first essay	Students who wrote the second essay	Quitters after first essay (%)	Students who wrote essays after Easter	Quitters after Easter (%)
Students	120	103	14 %	31	74 %

Then came a dramatic development at the end of the semester. The compulsory essay had to be written over a period of 10 days at the end of March. This was immediately followed by the Easter holiday. It meant that the normal activity in the workgroups stopped for about three weeks. A large number of workgroups experienced difficulties in revitalising their rate of activity when they returned. Also, with the exam about a month away by then, many students ‘panicked’ over the curriculum they had not yet completed.

Thus, we were unable to convince many of the students that they should rather prioritise writing and discussing ahead of reading. Only 31 students wrote an essay in the last month before the exam. It implied that 74 percent of the students had stopped writing essays. Naturally, this was a disappointment to us. With student run workgroups and no other methods of sanction than terminating system- and computer-privileges, there was little we could do. This semester we do not have the ‘Easter problem’ and hope to be able to keep up the activity to the end.

The activity in the electronic seminar - *Kark Debate* - was good throughout the semester. It was however most intense at the beginning. This was due to the topic (ancient world history from an anthropological perspective). The lecturers were also actively engaged in the process of integrating the electronic seminar in their teaching. The online discussions were in many ways an extension of the lectures. Participation was really independent of the seminar-system, as anyone could access and discuss, and though the students failed to produce essays, they still seemed to find it useful to discuss matters online. By mid-June, after the exams, 1 012 postings had been made to *Kark Debate*, or an average of 8 postings each day. It included Sundays and public holidays. We have no precise statistics on the use of *Kark Debate* because postings could be done anonymously. But we managed to identify most of the users, and out of the 120 students registered in the seminar-system, 47 (39 per cent) participated in one or more postings. These students wrote 437 postings, or an average of 9 per active student. A total of 18 of the staff participated writing as many as 462 postings - an average of 25. A total of 113 postings were done by unidentified people, either anonymous students or ‘outsiders’.

We found the activity very satisfying, both among staff and among students. Involving staff in ICT can often be problematic, partly because they are

somewhat sceptical of anything new and partly because a large proportion of staff might not have the computer-skills and infrastructure needed to participate. We found this to be the case in our department. At the same time it should however be pointed out there was not so much resistance to new teaching methods. What was a notable issue was the fact that so many of the staff still used their computers as advanced typewriters and little else. Of late this has changed, and though not all the members of staff participate, a large number of them seem to follow the student discussions with interest.

We are also satisfied with the activity among the students, despite a majority of them never having made any postings to *Kark Debate*. We are satisfied because we would never experience that 39 percent of the students would participate with questions or comments in a regular lecture. We can never activate all students in discussions, but by providing them with a potential channel, we are able to increase the proportion of active students. Furthermore, the fact that the majority of the students were not active with postings does not mean they did not learn from it. The passive students were indeed following the discussions and hopefully learned something from that. The users retrieved the discussions more than 23 000 times during the semester, i.e. the discussions were read 200 times a day - including holidays. The fact that the students demonstrated such interest in the discussions probably encourages us to believe there is a definite potential to widen the base of participation. Many students seem to be sitting on the fence, maybe wanting to, but not quite daring to participate.

### Exams

After the exam at the end of May we made a survey to check how the student participating in the *Kark* system compared with those who did not.

**Table 2. Failures at the exam**

	Attending the exam	Failures	Failures in %
Kark-Students	104	10	9,6
Other students	127	26	20,5
Total	231	36	15,6

Again, we found the same difference as when we first started with CAL-seminars; students participating in the *Kark* system had only half as many failures. While 20 per cent of the students outside the system failed the exam, only 10 percent of the *Kark*-students did (table 2). Among the students who

continued with the course after the Easter vacation and who continued to write essays, only one out of 31 failed (a mere 3 percent).

We were satisfied with the results when it came to failures. When it came to grades, the difference was less obvious. In the Norwegian university system, the grading scale is from 1 (best) to 4 (the lowest pass), with one decimal. In reality, the best grade used is around 2.0 and the worst still to pass is 3.5 (which means no one is given the grades between 3.6 and 4.0). The average grade for both *Kark* students and the others were 2.7. In other words there was no real difference. However, the arithmetic mean is not a very good measurement as there was a difference in failures. Participation in the *Kark* system seems to have prevented students from failing. It also produced a number of *Kark* students with poorer grades. The median is a better mean and here the *Kark* students remained on an average 2.7 while the other students had 2.8.

As with failures, the students who managed to keep up their activity after the Easter vacation got better grades. They students had an average of 2.6. We found the same picture when we controlled grades to number of essays that had been written. Students who only wrote one essay had an average of 2.8. Students who wrote three or more essays had an average of 2.6.

The picture is quite clear: Active students do better than other students. Naturally, we have the same problem of the egg and the hen all over again. Are the students active because they are more interested and motivated in the first place (and would have done well in any case), or did they do well because they were active in the system to the end? This we will never know, but we are convinced that students who managed to put priorities to the active production of knowledge through writing (and discussions) throughout the semester were much better prepared for the type of assessment found in a written exam.

We had the same problem evaluating the old seminar system with a teacher present. Students participating in those seminars had better grades than those who did not. The important issue in any case is to have an offer for the active students. We could not have continued with the resource-demanding old system in any case. Without the implementation of ICT, the active students would be left largely to their own devices. With the on-line seminar system we have a channel where we can connect the motivated students and provide the facilities for them to improve. We let them write essays, comment on each other's work and receive individual feedback from staff. We also let them discuss historical problems among themselves and participate in these debates as teachers.

Maybe the active students would have done well in any case, but we have no doubt that this dynamic junction not only makes historical studies more interesting for these students, but also employs more of their potential in critical thinking and expressing historical understanding and thus elevates

their performance at exams. We also have no doubt that the same dynamic junction is of importance for the improvement of the motivated, but not so strong, students. Strong students pull weaker students to a higher level. The seminar system is of little and perhaps even no use to students who are unmotivated and/or not willing to invest some time and effort. And here we have to sadly admit we have failed. We do not feel that we have any obligations to provide limited resources to students who attend the university for the wrong reasons, who are not willing to invest the efforts. But among the group of non- or less active students, there are a substantial number of dedicated and hard working students.

Our main pedagogical challenge is to convey the importance of putting priorities to active learning instead of passive reception to the motivated but hesitating students.

Implementation of ICT in teaching doesn't automatically bring good results. The tools have to be filled with content, and the students (and probably teachers as well) need to be motivated to utilise the tools in a fruitful way. Tools have never been anything else than tools. Only hard work produces results. But the tools can facilitate and organise this work in an efficient and useful way. The activity in the seminar system would otherwise not have happened at our department. The financial strain on the department could not have allowed organising activity in any other way, and certainly not any other form of 'authoritative' feedback from teachers on their work. The teachers had to be distanced from the students, and ICT-tools were the only mechanism to bring them into contact with the students. Likewise it brought the motivated students in contact with each other.

Face to face communication is always the best, but this cannot always be arranged, either due to costs or the fact that teachers and/or students are dispersed over a vast geographical area. The way we use the *Kark* system is not intended to be over a long distance. Most of the activity is within the environs of the campus. Both student and teachers are here, and the students meet in their workgroups once a week. But the activity need not be campus based.

We have one workgroup of students this semester who study from a considerable distance away from Bergen. All their activities are conducted online. The students with internet connections at home can do their part of writing or commenting as also the teachers can. The teachers are not required to be at campus. Of course, all activity can be organised as distance teaching totally independent of a campus.

Next year, our university is planning to offer a course in Norwegian history for English speaking students. In this course, the students may be located in any part of the world, and the teachers as well or at least in any part of Norway. Other teaching institutions and departments in Norway have started



using *Kark*, both as a campus integrated and campus independent tool, it seems to be equally suitable for both purposes.

### **Where next?**

Earlier in this article we outlined three requirements for fruitful implementation of ICT in history - online resources, online teaching applications and thirdly the need for communications tools. With *Kark*, we feel we have developed a tool that satisfies our needs in the latter area. Our efforts in future will be focused on the first two components, and especially applications. With the Digital Archive, a co-operation project between the Norwegian State Archives and our department, we have started making historical sources available both to our own students as well as the public at large who may be interested in history.<sup>17</sup> The sources are mainly of a highly structured format, such as census-material and church records, which easily can be converted into searchable databases. But the Digital Archive also contains more qualitative sources and such sources are also available from other sites.<sup>18</sup> The local State Archive is also in the process of publishing all its source materials with some user frequency on the internet as images. Naturally, similar projects for making source material available on-line can be found outside Norway. The United States Historical Census Data Browser contains numerical information on county level for American censuses between 1790 and 1970.<sup>19</sup> The most extensive (and still growing) collection of qualitative historical sources on a wide range of topics and areas is the Internet History Sourcebook Project managed by Paul Halsall at Fordham University in New York.<sup>20</sup> With online sources already a rolling snowball, we will put our future priorities in the second module: online teaching applications.

We have four concrete projects in this area; one of them is already available. The Digital School is taking advantage of the source material already online and is made for history students at high school where the new teaching guidelines strongly emphasise both increased use of primary sources as well as the implementation of ICT in history.<sup>21</sup> A second project is in its final stages. It is an application for learning how to read historical manuscripts

---

17. The Digital Archive (Digitalarkivet) can be accessed freely at <http://www.hist.uib.no/arkivverket/index-en.htm>.

18. The most prominent of these is the Documentation Project located at the University of Oslo. An English website for this project is available at <http://www.dokpro.uio.no/engelsk/>

19. The United States Historical Census Data Browser can be accessed freely at <http://fisher.lib.Virginia.EDU/census/>

20. The Internet History Sourcebook can be accessed freely at <http://www.fordham.edu/halsall/>

21. The Digital School can be accessed freely at <http://www.hist.uib.no/digitalskolen>. This site is in Norwegian only.

written (or printed) in Gothic.<sup>22</sup> Our university does not offer any course in this field to history students. Few new students require these skills every semester. The result is that these students are left to their own devices or need to get individual instruction from their supervisors. The application provides the students with a number of different manuscripts. The students write their transcriptions of the manuscripts in the web-browser. At any time, the user can check the transcription and get feedback on wrong transcriptions. Two other projects are in their initial phase. We will by the end of this winter have produced a couple of hyper-lectures on Norwegian history in English to the course for English speaking students.

A hyper-lecture is an audio lecture transmitted over the internet with synchronised visual information on the screen.<sup>23</sup> Such a lecture will be available to users at any time and can be controlled by the users to a large extent. The user decides the progress of the lecture by using the pause, rewind and forward buttons, and can also decide on which topics they would like to find out more in an elaborated sub-lecture. These hyper-lectures will also integrate the two other modules as it will make source material and electronic discussions available from each lecture. Such hyper-lectures will also be important in our last current project.

For a few years we have taught the course History and Computing.<sup>24</sup> This is a course in using computers as tools in both historical research and dissemination, with focus on internet and databases. The students are assessed based on an hyper-text on a historical topic they publish on the internet and an oral exam where they are tested in both theory and practical use of computers. This course will no longer be taught on campus but on-line only. The students will write essays and discuss in *Kark* and have hyper-lectures on data-modelling, record linkage, etc., on-line with a large number of practical examples including assignments. These assignments will teach the students how to use different software step by step with help information and downloadable data sets available. The course will be available on-line by August next year.

### Concluding remarks

ICT in teaching is indeed fashionable and a politically correct way to address and promote the discipline of history. Unfortunately, this boils down to mere talk much too often, and most governments seem to be satisfied as long as the

---

Available at <http://www.hist.uib.no/zotisk>.

For an example of and introduction to hyper-lectures in general, please consult Frode Ulvund: *Internet and Teaching - a hyper-lecture* at <http://www.hist.uib.no/lydfrode>. This site require the Real Audio plug-in.

24. The home page of the course is <http://www.hist.uib.no/hit/>. The hyper-texts made by students are available at <http://www.hist.uib.no/dokkeveien/prosjekt.htm>, including a number of projects written in English. Most interesting projects were made in the *Bombs and Babies* project in 1997. These are hyper-texts on oral history with excerpts for interviews available as real audio files on the Internet. URL: <http://www.hist.uib.no/bomb/>

infrastructure is present and working. Hooking up each classroom and shoving the students on the internet seems to be the aim, and the belief that this is actual implementation of ICT in teaching is a widespread misconception.

Using the internet as the 'Great Library' only, using search engines to collect information, is extremely inefficient and too often a complete waste of time. Instead, dynamic junctions on the internet should be developed. The contents of these on-line meeting points will of course differ from both subject to subject and country to country. But it is our belief that resources, teaching applications and tools for communication are essential for making the implementation of ICT efficient and fruitful.

We end by emphasising that the internet is not a magic wand that automatically sprinkles dust of wisdom over the students. These teaching methods are as dependent on the students' zeal and work as any. One of the greatest strengths of ICT is the possibility to link these students to each other and to teachers, independent of space and time constraints.

### **Opsomming**

#### **Leer, tegnologie en geskiedenis**

As gevolg van 'n toename in geskiedenisstudente aan die Universiteit van Bergen in Noorweë teen die einde van die 1980's was die departement geskiedenis verplig om toenemend gevorderde rekenaartegnologie te gebruik om geldelike tekorte te oorbrug

Eerste is die *Absalon*-projek in 1992 aangepak. Dit is in 1999 met die *Kark*-projek opgevolg. Beide projekte het ten doel gehad om die geskiedenisdosent in die onderrigproses te help. Hierdie ontwikkeling was in pas met die nuwer tendense in rekenaartegnologie. Daar word weerder op die onderrig- as navorsingsmoontlikhede van die rekenaar gekonsentreer.

Na afloop van die eerste fase is die skrywers krities oor wat daar met die *Kark*-projek bereik is. Daar is, verklaar hulle, ruimte vir verbetering. Tog was daar was ook prestasies. In die onderrigproses is die bevordering van kritiese denke en skryfvaardighede beklemtoon. Studente is minder aan die passiewe resepsie van feite blootgestel. Hulle het baie baat gevind by aktiwiteite waar hulle vir hulself moes dink.