The influences of eLearning in the university community of Lappeenranta University of Technology

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Abstract

eLearning and ICT have become almost a compulsory part in university education. Technology is making it possible to realize eLearning and ICT on a wider scale than ever before. Thanks to an increased utilization of eLearning an obvious change in the way of thinking of and talking about eLearning can be perceived. The Ministry of Education, too, has pushed universities to develop eLearning. At the same time normal university teaching remains the same. The same teachers are developing eLearning and taking care of traditional university teaching. It is obvious that teachers' workload will increase when there are not enough resources to employ more personnel. New support services are needed. eLearning and ICT seem to affect learning, teaching and, consequently, the whole university society.

1. Introduction

The influences of eLearning and ICT on teaching and learning have been studied at Lappeenranta University of Technology (LUT) over a period of four years. In this paper, the influences of eLearning or ICT in teaching and learning are estimated (ICT, Information and Communication Technology). Here, eLearning is used as a common term for all education utilizing ICT to some extent. Three viewpoints are included for consideration: learning, teaching and the university community of LUT.

This study is based on several internal studies carried out at LUT during the last two years. The Learning Centre of LUT has carried out an inquiry on eLearning in 2004 [1]. The general results are similar to the results obtained from the inquiry made in 2003 for the course Basic Electronics [2]. This course has been taught by using an internet based virtual course. The Learning Centre of LUT made also an inquiry considering teachers using ICT [3] and a feedback inquiry on ICT training for teachers [4]. These two inquiries give some estimation about the ICT skills and needs of training to use ICT in teaching and also some goals of eLearning set by teachers. The influences of the increased utilization of ICT are included in two studies and in the assessment presentation [5]. The first study [6] concerns the costs of eLearning and the second study [7] deals with the way people are talking about eLearning and ICT at LUT.

Over the years eLearning has been used, learning and teaching have become more versatile and a pedagogical development of the whole university education at Lappeenranta University of Technology can already be observed.

2. Learning

From the learning point of view, eLearning is a new method for learning in parallel with traditional university learning.

Every year new students become more and more familiar with ICT. About 90% of the students [1] are of the opinion that they have quite good skills in information technology, independent study and network based communications. 37% of all students prefer to receive more teaching in ICT learning skills and 24% of the students wish to receive more support to use eLearning environments. It seems to be so, that students are quite ready to use ICT as a learning aid.

Students are expecting that high-end teaching technology is used especially at technical universities. 76% of all students [1] believe that teachers at LUT have quite good or better skills in information technology and 50% of the students feel that teachers have quite good network based teaching skills.

Learning by means of full-virtual courses seems to be not that successful among full-time students. Only 30% of the students [1] prefer to have more full-virtual courses. 49% of the students of the basic electronics course 2003 [2] feel that independent studying could be promoted with the help of full-virtual courses. Full-virtual courses are more attractive for further training after graduation. Full-virtual courses are offered in the master's program of Digital Knowledge Management. The students attending the program have already obtained some degree and their average age is close to 30 years. Their motivation and learning skills seem to be mature enough and, therefore, these students are able to really take benefit from the full-virtual courses.

Students frequently utilize all kinds of learning materials available in the net. 77% of all students [1] wish that more learning materials were available in the internet. At the same time, it seems to be so, that, nowadays, students are not so keen any more to use traditional library services as five years ago. LUT's students in technology, for instance, buy surprisingly few books during their studies.

Multiform education supported by eLearning seems to be the most activating way of learning. 42% of the students [1] are of the opinion that the level of eLearning is high enough and 46% of the students prefer to have more eLearning possibilities. Most of the students of the basic electronics course 2003 [2] feel that normal teaching is well supported by the multimedia material used for the virtual course.

50% of all students [1] feel that eLearning is offering them more learning possibilities. 12% of the students state that eLearning has made studying clearly versatile. On the other hand, 53% of the students [1] feel that network based teaching has had no impact on the amount of guidance given by teachers. This is maybe the main point in unsuccessful learning by using ICT. Compare to the traditional learning methods, eLearning better assists the student in learning, if there is enough support and guidance available.

3. Teaching

From the year 2001, there has been running a national, specially funded virtual university development project at LUT. These funds came from the Ministry of Education. This development project has given resources to the teachers to develop their own eLearning and thus speed up greatly the overall use of ICT in teaching at LUT.

At the beginning of the project, the focus has been on new eLearning platforms. At LUT, WebCT was chosen in 2001 as a university-wide platform. The first eLearning projects were more or less concentrating on the teaching of teachers how to use WebCT. After that, teachers themselves gradually found more different variations in the employment of ICT in general [3].

67% of the WebCT courses have been used as material banks [4] playing more or less the same role as normal www-pages do. 53% of the WebCT courses have been used in addition to traditional teaching thus forming together multiform teaching. In this teaching method, the WebCT course has been part of the planned teaching. 16% of the WebCT courses have been full-virtual courses without contact teaching at all.

Teachers have set goals for the eLearning they are concerned with. The most important goals are listed in table 1.

Table 1. Goals of the eLearning [3] at LUT.

Goal	% of teachers
To create better facilities for distant learning	67
To produce a high quality learning material	59
To create better facilities for high-quality learning	59
To promote independent learning	56
To diversify teaching	48
To make it possible for the student to choose when to learn	48
To make teaching more interesting	37
To reduce the routines of teaching work	22

64% of the teachers [3] believe that most of the goals they set for their eLearning methods were reached and 63% of the teachers believe that students have a quite positive attitude towards eLearning.

Certain drawbacks related to the increased use of eLearning have been reported [4]. Most important is the extra work needed especially when a new eLearning project is started. The teachers involved with eLearning have also to take care of their other normal tasks and to do the traditional teaching. If there is extra labor needed then also extra money will be needed.

About 50 eLearning projects have been financed through the virtual university development project of LUT during the years 2001-2004. The average extra financing has been about 6000-8000 € per eLearning project and the amount of teachers' work could be estimated to be about 10000 € in average. Furthermore, teachers have educated themselves to produce eLearning in addition to their task of realizing the eLearning projects. For these teachers, the process also takes time. These might be the reasons why teachers have not enough time to give the supplementary guidance required by the students in their eLearning courses.

Anyhow, teachers feel that increased work because of eLearning is worth it and they feel that using eLearning will make the a teacher's work easier in the future.

83% of the teachers [4] feel that their own work community has a quite positive attitude towards using ICT in teaching. Teachers have learned to make their eLearning courses in teams and new networks of eLearning developers have arisen in an informal way.

77% of the teachers [4] believe that the use of ICT has become as part of their normal teaching work. 91% of the teachers believe that the use of ICT in teaching still increases.

Furthermore, the increased use of ICT very positively affects the better understanding of copyrights. Now, as nearly all teaching material is published on www-sites teachers have to carefully take into consideration the question of copyright. At the same time, teachers are increasingly respecting ever their own work and materials they produce. Consequently, the quality of teaching materials has increased in a considerable way.

4. University community at LUT

4.1. Support services

From the start of the virtual university development project at LUT it has been quite clear that there is need of support services for teachers willing to utilize eLearning in their teaching. The Learning Centre of LUT was founded in 2001 to give ICT support services to both teachers and students. The support services include education on using ICT in teaching and learning, ICT technology services like video conferencing and administration of the WebCT platform, and co-ordination of the eLearning projects. These services are mostly needed by the teachers.

Also services for students have been developed during the years 2001-2004. Part of the ordinary computer classes is transformed to group of workstations. The workstation space is called Origo.

Origo is supplied with up-to-date equipment and software suitable for web-based learning and individual studying. In addition, retrieval and processing information as well as facilities to use electronic student services are available. Origo is staffed by at least one person on duty. The staff will do its best to render help on any problems and questions – e.g. information searching, how to use the available software etc. The services are provided by the Learning Centre, library, student services office, language centre, computing centre, career services, and international office. Origo is part of the Library of LUT. This is important since library services are getting more and more digital and good skills in information retrieval are needed.

The Learning Centre organizes education in adapting ICT to teaching. About 50 cources are offered per year and nearly 500 persons are participating in the courses [3]. 44% of the teachers [4] wish to receive more education in pedagogical planning of eLearning. This seems to be the trend of attitude, especially when teachers are gradually becoming theachers' workload will increaseacquainted with the technology used in ICT. 86% of the teachers using ICT as part of their teaching[5] are of the opinion that they are able to apply to their teaching work the ICT training they have received.

In 2003, 10 eLearning courses have been examined at LUT [6]. It took two months work in average to develop one course. The most laborious part in the process appeared to be the graphical design and interface design. Also the production of material turned out to be quite laborious. It is found that investing a considerable amount of resources for the purpose of desiging the outlook does not necessarily lead to good learning experience if there is not enough guidance available during the eLearning course in question.

4.2. Discourse analysis

It is also studied how people are talking about eLearning and ICT within the university community of LUT [7]. The discourse analysis has been used as a research method. The different attitudes that have gained a stabile and adopted position are defined. Three main discourses are included: the discourse of information society, the discourse of technology and the discourse of pedagogic.

The information society has been a kind of "mantra" that the government has repeated regularly in all strategic planning programs for education over the last five years. It has influenced the activities of LUT as well. The virtual university development project carried out at LUT has been a concrete action of the government. Moreover, during recent years information society as a concept has been a subject in all medias. It is no wonder that university people also talk a lot about the information society. Gradually, teachers are taking the information society into consideration when planning their teaching.

The discourse of technology is connected to the discourse of information society. We believe in technology, especially in ICT.

Nobody is asking if there are alternatives to ICT in education and in society. The risk exists that, in education, we are using eLearning just because of the technology eLearning is surrounded with and therefore neglecting to think how the ICT actually help student to learn.

After the first years of our information society being attractive, now ICT teachers are more and more thinking what to do with all the technology available. This has brought the discourse of pedagogic into discussion. According to the teachers' opinions, eLearning is justified from the basis of teaching and learning. Teachers really believe that by using ICT, teaching is more effective and students can be helped to learn, although this is not scientifically proved.

5. Conclusion

eLearning gives the teacher the opportunity to pedagogically regenerate his teaching. By using ICT, the teacher aims to increase the quality of his teaching, develop the content of his teaching and activate students to play a more active role in the process of learning and teaching.

Teaching methods are changing. ICT is going to be a compulsory part of university education. The willingness of the teachers to develop their eLearning and ICT skills is increasing. At the same time, the routines of university teaching have to be changed. Otherwise the teacher's workload is growing too big. Teachers feel already that eLearning significantly increases their workload.

If the amount of normal face-to-face teaching remains unchanged, this means that with a further increase of eLearning the amount of education provided at the university significantly increases. This will lead to an unsustainable situation because the number of teachers to do all the work as well as the sum appropriated for university education will remain the same.

Thanks to an increased utilization of eLearning an obvious change in the way of thinking of and talking about eLearning can be perceived. This progress is pedagogically justifying enough to further promote eLearning. eLearning is considered to be a valuable aid in teaching and learning although its advantages regarding learning outcomes and use of resources could not been shown indisputable.

Cost saving by introducing eLearning has not been possible yet. However, a possible reduction of teaching costs by using eLearning should not be the only motivation to further eLearning. The balance between learning and teaching quality has to be sought for, when eLearning is a significant part of university education.

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