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## **From Distance to Online Education: Educational Management in the 21st Century**

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#### **Introduction**

Distance education gathered speed in Sweden after 1898 when Hermods correspondence courses were established. 70 years later, like in many other countries (Tait, 2008), public investment in distance education was directed towards higher education in general (Willén, 1981). The impetus for the development of distance education since the 1960s was educational concerning education for all, and enriching people's lives, economic in terms of economy of scale and political concerning spreading higher education to all classes (Powell & Keen, 2006). The state in Sweden has historically had an interest in distance education to ensure education to citizens. This interest has been manifested in different organizations with commission to stimulate the development of flexible distance education and to make education more accessible and adjusted to the student's situation. The increasing interest in distance education for Umea University is related to a couple of factors in society (e.g. Morey, 2004). For instance, the location of Umea University in the northern part of Sweden contributes to a responsibility to develop the sparsely populated region and to educate people with limited possibilities to read campus courses. Higher education in Sweden is also increasingly dependent on the market of students whereas competition for students has become a core activity in Swedish higher education. Universities have been forced to redefine their activities and innovate to attract students (e.g. Miller & King, 2003; see also Ball, 1997). The Swedish educational system for higher studies is partly dependent on number of students to succeed, since the economic support to the University is based on how much the students have completed i.e. output based. Among their innovations in the competition for students, universities have turned to distance education using information and communication technologies to attract students who not have the possibility to attend campus courses or for other reasons choose distance education alternatives.

During the period between 1970's and 2000's educational conditions has changed in dramatic ways, especially for universities in smaller cities in Sweden. A recent report from Swedish national agency for higher education (2010) show that during 2000s have distance education constantly increased and that distance education increased its proportion of the total education volume. The technological development has developed distance education and created new possibilities. Information and communication technology (ICT) makes it possible to connect humans to each other and create interplay between humans regardless of time located at different places, regions and countries (e.g., Guri-Rosenblit, 2009; Miller & King, 2003). In year 2010 there are approximately 18000 full year students at Umea University whereas 4,900 of them are distance students. Distance courses, is both courses with physical meetings once or twice during a course mixed with online activities or courses that are carried out totally online. The different modes of distance education at Umea University are carried out with different extent of online activities from distribution of information to courses with high extent participative communication. Garrison (2009) show that the development of technology change how teaching can be designed and carried out from the independence in the early self-instructional correspondence packages to two-way communication (e.g., the emergence of audio conferencing in late 1970s; see also Stock McIsaac Nirmalami Gunawardena, 1996 description of how radio during first world war impacted on the delivery systems in education). The change in educational conditions has redefined what a teacher is and the act of teaching (cf. Castells, 1998 view of how technology have impacted on work processes). From a teaching and learning perspective the totally online participation and teaching lead to new pedagogical rationales which change the teacher role. The online courses also attracts other students, which often are older and other life situation, which impact on the design of the education (Lundberg, 2005; Mårald & Westerberg, 2005).

Today 70 % of the new students at Umea University are distance or online students. The trend is that more and more courses are carried out in online environments without physical meetings (online education). Distance or online courses are foremost carried out with delayed study pace (50 % study pace) to enable people working to read courses but there are also courses totally online with 100 % study pace that attract students. The report from National agency for higher education 2010 in Higher education in Sweden show that the proportions of students have strongly increased during recent years and that the student participation in online courses on full time studies over a year had increased with 45 % the last five years at Swedish universities (Högskoleverket, 2010). This means that, teaching in higher education is in the middle

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of a transformation process where online education is becoming important for most of all academic disciplines. One late example of this in Umea, is that the medical education at Umea university also can be followed at distance from 2011.

There has been a change from distance education with few physical meetings to online education without no physical meetings at all (cf. Hasan & Laaser, 2010, description of the situation in Portugal). In this paper we will focus on this shift from distance to online by investigating the courses at department of education from an educational management perspective. This paper describes and analyses the development of distance education in terms of driving forces behind the development and the consequences of it. It uses department of education at Umea University as a case in point.

## **Method**

Our description and analysis in this paper derives from economical, staff and student data between 1994-2010, Policy and strategy documents regarding ICT and learning were also collected. The data has been categorised according to number of courses, total yearly income of distance and campus courses, registered students at distance courses, output of students.

Distance education in this paper refer to education where teachers and students are separated in time and place which is the definition of the reporting in the study document system used in Swedish higher education<sup>1</sup>.

## **Distance education at Umea University**

Umea University has a long history of distance education. In the 1970s and the 1980s it was foremost the teacher or the students three-four times each semester who travelled to the place where the teaching should take place. The emerging information and communication technology started to be used in distance education for communication in the late 1980s. Umea University initiated a distance project between 1987 and 1993 where this new information and communication technology were used in education for among other things message exchange (Hedestig, 1993). The connection speed was at that time 9.2 or 14.4 Kbit/second. In the beginning of 1990s video conference equipment were installed in different places in the northern area of

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<sup>1</sup> This does not mean that synchronous software is not used.

Sweden and used for distance educational purposes. Even though information and communication technology were used in their immature phase it is not until the middle of 2000 distance or online education started to be used by others than the real enthusiasts at Umea University.

### ***Distance education at the department of education***

The department of education has had a long interest in distance courses. A strong interest of using technology in education contributed to that video conferences were used in the early 1990s in distance education (Dahlgren & Karp, 1998). In the middle of 1990s ICT, email and world wide web, started to replace the delivery of the course material (Söderström, 1997, 1998). The emergence of this technology had consequences on how teaching was designed and carried out. For instance from the beginning of 1995 to 1998 the teaching on the web changed character from delivery of information to possibilities to interact with teachers and peer students (Söderström, 1998). In the 1990s it was teachers with an interest for learning and ICT that worked with the development of learning management systems and implementations of ICT tools in education. In the late 1990s the system administrator at the department started to support the technological part of the distance education. In year 2001 an ICT educationist was employed which was followed late 2002 with a new employment of one more ICT educationist. Today there are three ICT educationists employed at the department.

However, despite this stronger emphasis on ICT as a tool for teaching it took many years before everyone at the department had to work with ICT in their teaching. In the ICT policy from 2002 the ambition was that ICT should be used and integrated in teaching but also to initiate ICT-pedagogic development. Other areas in the policy covered information strategies, the ICT competence among the staff and what responsibilities the ICT- group had. In the document information and communication strategy from 2008 the role of ICT in teaching and online education is much more explicit expressed. The strategy is more detailed about how ICT should be used to support the teacher and the students to enable for distance and flexible studies. The document also point out that knowledge from different ICT initiatives shall be followed up to enable long term knowledge making, but also about how knowledge and experiences shall be spread within the department. In year 2010 the decision was made to not have any particular ICT Policy since it is fully integrated in the daily activities.

### ***Distance, online and campus course development 1994 to 2010***

The results from our investigation of economical, staff and student data between year 1994 and 2010 shows that both the number of courses and the number of students increased for distance education. When it comes to the course offered by the department there has been a development from a few longer courses with defined course modules (30 ects) to shorter courses lasting over 5 weeks 7.5 ects (Table 1).

Table 1: Number of courses between year 1994-2010

<b>Year</b>	<b>No. Courses Campus</b>	<b>No. Courses Distance</b>
1994/1995	2	1
1995/1996	2	1
1997	2	2
1998	2	1
1999	2	3
2000	2	2
2001	2	2
2002	10	2
2003	18	14
2004	17	11
2005	18	13
2006	18	14
2007	15	17
2008	10	10
2009	9	11
2010	10	8

Table 1 show that the number of courses increased a lot from 2002 at campus and 2003 for the distance courses. First it was tried out as campus courses and the year after they were run in the distance mode. The number of students reading the courses has also varied over the years, which is illustrated in Figure 1 below.

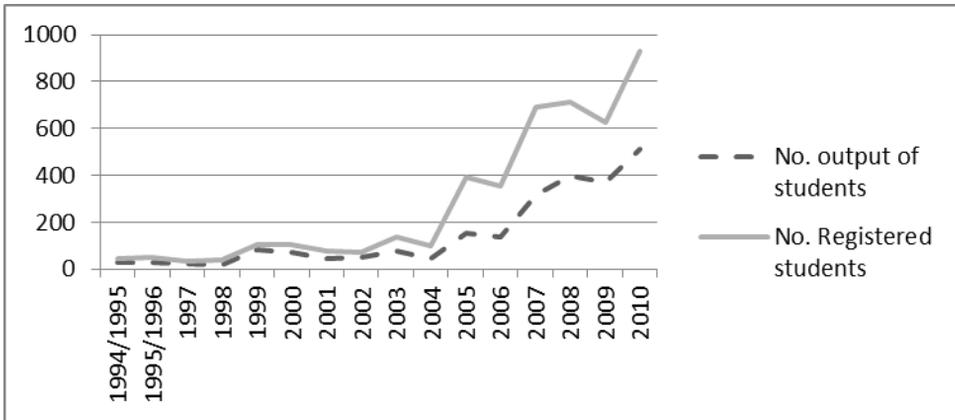


Figure 1. Number of registered students and output of students 1994-2010 in distance courses

Figure one illustrates that the number of registered distance students increased in high extent and especially from year 2005 and forward. The output of students was around 60 % 1994/1995 and it has been around 55 % the latest three years. However, the figure also illustrates that there was a decline in the output of students between 2005-2007. The number of students increased dramatically 2007 which also was the first time when all distance courses shifted to totally online courses. All of the distance courses in general education used the learning management system Moodle from 2005. Before that other systems as first class or web pages in combination with synchronous software (audio and video) was used. The campus courses have had a reversed development compared to online education. This is illustrated in figure two but also that 100 % study pace online that started up 2008 attracts much more students than the campus alternative.

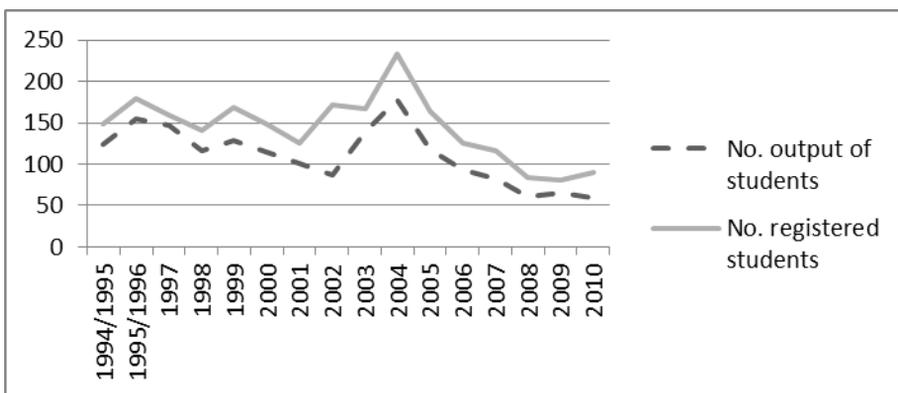


Figure 2. Number of registered students and output of students 1994-2010 in campus education

Figure two illustrates that the number of registered students has gradually declined since 1994. However, the throughput was around 85 % in average on the 1990s but declined in the middle of 2000 to be around 72 % with the lowest value 66 % year 2010. Figure 3 show that the online alternative (100 % study pace) that started up 2008 attracts four times more students than the campus option.

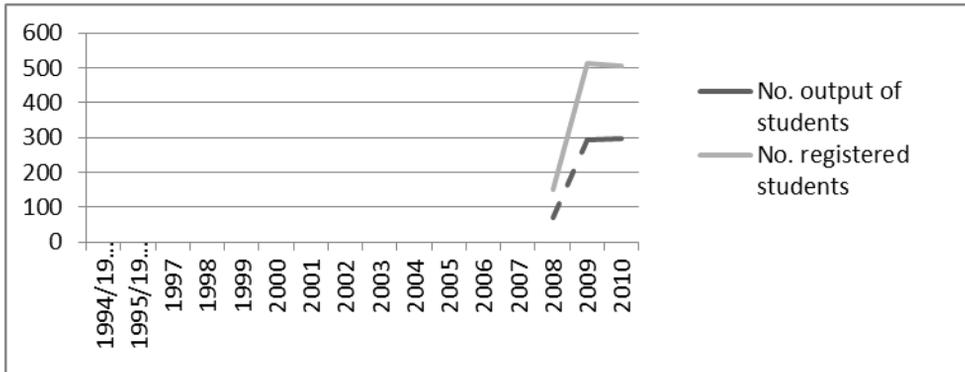


Figure 3. Number of registered students and output of students 1994-2010 in totally online education (100 % study pace)

However, it is the output of students that results in the state funding and Figure 4 clearly shows how the change in student numbers impacted on the economy at the department.

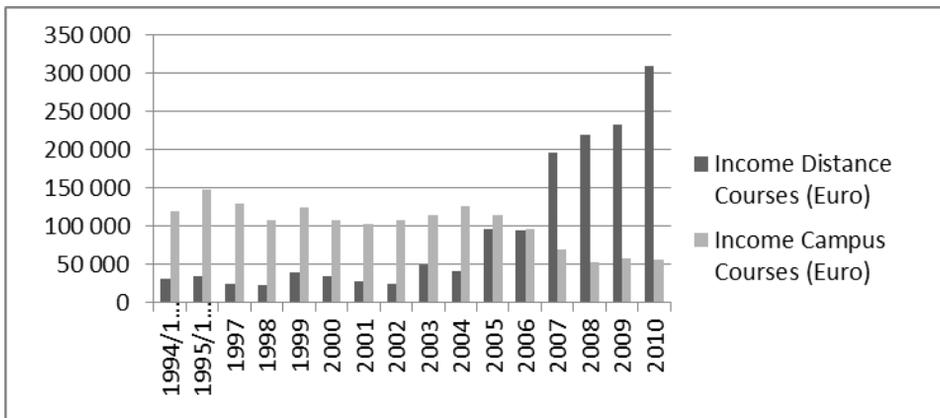


Figure 4. Income from distance and campus education 1994-2010

Figure 4 illustrates that the income from the distance courses and the online courses has gradually increased and in specific the latest years. If we also consider the 100 % study pace online the economical income from those courses have grown from 123,600

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Euro 2008 to 468,900 Euro 2010. This means that the income from online courses totally 2010 was 778,700 Euro and 55,800 Euro from campus courses.

## Discussion

The results from this study show that during the last 20 years there has been a development that can be characterized from a early enthusiast projects to an educational management strategy, where ICT is a natural part of the everyday life of the department. The strategic documents have supported different actions concerning, for instance, whether or not to develop or discontinue courses, or to employ people with specific knowledge. It is clear that the rapid technological development have had a major impact on the growth of distance and online education at our department (cf. Stock McIsaac Nirmalani Gunawardena, 1996). It forced the department at different time to make decisions on strategic issues<sup>2</sup>. In 1996 the students attending a course did not have internet at home and they were not using internet or the web (Söderström, 1997). Today the situation is totally different. Nearly all students have their own computers and access to internet at home and they demand the departments to use ICT to facilitate for their studies.

The results from the data presented here have a relation to strategic decisions made at the department. One important decision was when we decided to employ people with specific ICT educationist competence 2001. It has enabled for decision later on since these are backed up by an internal competence, which had enabled for high level of flexibility. The data show that between 2002 and 2003 the number of courses increased which raised the number of students and the total income<sup>3</sup>. Another decision was the shift from distance with online activities to totally online courses in year 2007. It doubled the number of students and doubled the income from the courses. One major reason for this shift to totally online mode was that the output of students was low and students did not attend the physical course meetings. The shift to online increased the output of students a bit but was still low the first year which created a demanding working situation for the teachers. To overcome the situation with low throughput and demanding working conditions for the teachers' different projects aiming at increasing the online educational quality were initiated. For instance, projects were established in

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<sup>2</sup> Of course have the deployed market oriented framework in Sweden been one important factor in the strategic decision making.

<sup>3</sup> We split large courses to smaller courses Four courses each semester means 8 courses each year.

order to let the students to feel “belonging” and a community with other students in the course but also activities directed to the teachers to be more comfortable to work in online settings. The results also show that the output of students increased from year 2008 which, in combination with much more registered students, dramatically increased the economical output from online courses. In year 2008 we also decided to try to promote our courses in 100 % study pace totally online. The results show that these courses attract much more students compared to the traditional campus courses which over the years attracted less and less students. Today then, income from the campus courses enable work for one teacher whereas the online courses in total enable work for approximately 15 teachers. The extreme increase of number of students might not only be dependent on the online mode. At the moment there are a lot of possible students in Sweden due to large birth-rate in the late 1980s and early 1990s which also is combined with a low conjuncture in society.

The consequences of the used educational management strategy are that we have been able to develop education as a subject at the university. In the beginning of 2000s the economical outputs from courses in general courses like “teaching” or “education” etc. were low. Teachers had few hours for teaching a course since there were few students attending and carried out the courses (the income from the course regulates how many teaching hours each course have). The changeover from distance to online courses had contributed to more students (economy of scale) which have made it possible to deposit resources for pedagogic development work. The online courses have also contributed to better working conditions for the teachers. They do not have to teach many different contents to fill their appointments. Without the conscious educational management strategy the alternative might have been to discontinue general educational courses, which had been a serious threat for the subject education. However, the influences of the market can, as Guzman & Trivelato (2010) point out, contribute to mechanistic standardized courses. We chose at the 1990s to control technology and manage the systems by ourselves, which has been necessary to be able to adjust our courses to different learning conditions. One other reflection we want to stress is that from the beginning with primitive webpages at one or two courses all courses at the department today, both campus, distance and online, are supported by ICT. An ICT pedagogical development needs both technical and pedagogical support in combination with support from a strategic leadership. Finally, the tricky thing is that the development does not have any fixed end. The rapid technological development will challenge all the time operating according to the strings of modernity. Bauman claim:

*Modernity is what it is – an obsessive march forward – not because it always want more but because it never gets enough; not because it grows more ambitious and adventurous, but because its adventures are bitter and its ambition frustrated. The march must go on because any place of arrival is but a temporary station. No place is privileged, no place better than another, as from no place the horizon is nearer than from any other. (Bauman, 1991, pp. 10-11)*

Technology not only is a technology it also creates habits and lifestyle patterns. The next phase will be mobile learning with a lot of educational “apps”.

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