The Transition from Distance to Online Education: Perspectives from the Educational Management Horizon

Tor Söderström [tor.soderstrom@pedag.umu.se],
Jörgen From [jorgen.from@pedag.umu.se],
Jeanette Lövqvist [jeanette.lovqvist@pedag.umu.se],
Anette Törnquist [anette.tornquist@pedag.umu.se],
Department of Education, Umeå University, Sweden

Abstract

In Sweden, higher education has moved away from distance education, including physical meetings, to online education with no physical meetings at all. This article focuses on the shift from distance to online education using an educational management perspective that is based on economic, staff, and student data collected between 1994 and 2010 (Department of Education, Umeå University). The results showed that in 2005, the number of distance education students increased significantly. In 2007, when all distance courses shifted to online courses, the number of students increased even further. The online courses attract many more students compared to traditional campus courses. Overall, the transition from distance to online courses has contributed to more students, an economy of scale that makes it possible to increase pedagogic development work. The online courses have also contributed to better working conditions for teachers. Without a deliberate educational management strategy, general educational courses might have been discontinued, a choice that would threaten the study of education as an academic discipline per se. As a result of these conditions, we believe ICT pedagogical development needs technical and pedagogical support as well as strategic leadership.

Keywords: Distance and Online Education, Educational management, Educational leadership, Higher Education

Topics

Introduction

In Sweden, distance education gathered momentum after 1898, when Hermods correspondence courses were established. Seventy years later, as in many other countries (Tait, 2008), public investment in distance education was directed towards higher education in general (Willén, 1981). Since the 1960s, the impetus for developing distance education has been the desire to provide education for all, to enrich people's lives, to drive economic growth in terms of economy of scale, and to spread higher education to all classes (Powell & Keen, 2006). Historically, Sweden has focused on distance education as a strategy to ensure an educated population. This interest has been manifested in different organizations charged with making education more accessible and stimulating the development of flexible distance education that addresses student needs. Today, higher education in Sweden and other countries must compete for students if it is to survive. Universities have been forced to redefine their activities and innovate to attract students (e.g., Miller & King, 2003 see also Ball, 1997). In Sweden, the educational funding system for higher studies is based on how much work students have completed (i.e., output based). In the competition for students, universities have turned to distance education using information and communication technologies (ICT) or totally online education to attract students who have not previously attended campus courses or for other reasons chose distance education alternatives. Research has also

shown that online courses attract non-traditional students such as older students or students with needs not addressed by traditional university campuses that only offer on-campus courses (Lundberg, 2005; Mårald & Westerberg, 2005). In this paper, distance education refers to education where teachers and students are separated in time and place most of the time. This definition is also used in Swedish higher education. Online education refers to learning where learners can communicate with their instructors and their peers and access learning materials over the Internet (Oakley in Curran, 2008), with no physical meetings at all.

Between the 1970s and 2000s, educational conditions have dramatically changed, especially for universities in smaller cities in Sweden. Distance education or online education is becoming more and more popular. A recent report from the Swedish National Agency for Higher Education (2010) shows that during the 2000s distance education has increased its proportion of the total education volume. Moreover, the report affirms that the student participation in online courses for full-time studies over a year have increased by 45 % over the last five years at Swedish universities. This expansion of distance and online education is not exclusive to Sweden; it is a worldwide phenomenon. For example, Curran (2008) refers to studies showing that there are more than three million online education students in America and that the online education in Europe in general is growing. The growth of online education is also predicted to continue.

There is much evidence to support the emerging consensus that online education will continue to be one of the fastest growing markets in American higher education for the foreseeable future; student demand for online courses and programs continues to exceed the supply. While a number of obstacles to scaling online programs remain at many traditional brick-and-mortar institutions, institutions across the country are overcoming these obstacles by creating new organizational structures to facilitate the growth of online education (Moloney & Oakley, 2010, p. 68).

Similarly, Rovai and Downey (2010) note that the predicted growth of distance/online education is resulting in universities transforming themselves to both on-campus and distance education centres. Today, the pressure on Umeå University to compete for students forces more and more departments at the university to turn to distance and online education. For a long time, Umeå University has offered distance courses and programs. This interest in distance education at Umeå University is related to two factors (e.g., Morey, 2004). For instance, the rural location of the university (northern Sweden) means the university is responsible for offering higher educational opportunities to students who have limited possibilities for attending on-campus courses. Information technologies for communication have historically been seen as useful tools for distance education (Bramble & Panda, 2008). At Umeå University, information and communication technology started to be used in distance education in the late 1980s. Between 1987 and 1993, one such project used new information and communication technology to establish communication between students and instructors and among students (Hedestig, 1993). At the beginning of the 1990s, videoconference equipment for use with distance learning was installed throughout northern Sweden. However, it was not until the early 2000s the technology become widely used. Today, 63 % of all new students at Umeå University are distance or online students. In addition, it is evident that more courses will be conducted in online environments without physical meetings (online education). This trend means that teaching in higher education is in the midst of a transformation process, where online education is becoming important for most academic disciplines at the university. In Umeå University, the demand for distance education (few physical meetings) has decreased while the demand for online courses (no physical meetings) has increased (a similar situation is found in Portugal; cf. Hasan & Laaser, 2010). Typically, distance or online courses use an extended study pace (50 % study pace) to help working students, but there are also online courses that attract students that are conducted at a similar pace (100 % study pace) as traditional courses. Generally, the different modes of distance education at Umeå University are carried out with varied online activities, from merely distributing information to courses with significant participative communication. Using an educational management perspective, this article will focus on the shift from distance to online education by investigating courses taught through the Department of Education. This paper describes and analyses the shift in terms of driving forces behind this development and its consequences.

Method

In this article, we draw on our experiences developing distance courses during the 1990s and online courses during 2000s. We focus on general education courses. The description and analysis is based on economic, staff, and student data collected between 1994 and 2010. Policy and strategy documents regarding ICT and learning were also collected and analysed. Data from campus courses were used as a point of reference. The data was categorised according to number of courses, total yearly income of distance and campus courses, registered students in campus courses, and registered students in distance courses, and output of students registered in on-campus courses and distance courses.

Distance, online education, and management of higher education – an overview

Technological development has created new possibilities for distance education. Information and communication technology (ICT) can make it possible to connect people to each other and create interplay between people regardless of time, place, regions, and countries (e.g., Guri-Rosenblit, 2009; Miller & King, 2003). For example, Garrison (2009) notes that the development of technology changed how teaching was 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) for a description of how radio during the first world war impacted the delivery systems in education). Although distance education and open universities influence higher education, Curran (2008, p. 27) claims that the prevailing pedagogy of traditional teaching has remained largely unchanged although this has started to change. This change in educational conditions, given the technological advancements, has become a significant phenomenon facing the way universities deliver content (i.e., teach) and the way students receive content (i.e., learn). (Hillman & Corkery, 2010). The technology redefines what a teacher does, leading to new pedagogical rationales that change the teacher's role (cf. Castell, 1998 view of how technology has influenced work processes). There are multiple motives for universities to engage in e-Learning. MacKeogh and Seamus (2009) suggest that engaging in e-Learning may be, in part, due to a desire to seem up-to-date (i.e., reputation), to develop Information skills/literacies, to widen access, to support disabled student, to improve quality of teaching and learning, to increase flexibility, and to improve cost-effectiveness. Nevertheless, the cost aspect, or return of investment (ROI), has above all been a major force underlying the decision to develop online education. Rennie, Jóhannesdóttir, and Kristinsdottir (2011) conclude that increasing the number of students involved in distance education and extending the range of courses is economically prudent. The ROI argument rests on a belief, on the part of senior managers, that online education offers a way of reducing cost, but as Inglis (2008) argues, this relationship between cost and quality is complex, so more needs to be understood about the efficacy of online education before its true economic benefits can be determined.

Roberts (2008) notes that adopting educational technology involves more than merely installing a product. Previous research describing experiences of implementing online education for a university or an institution showed that the process is filled with complexities and there are multiple factors involved when establishing successful online education. Drawing on experiences from the transition from distance to totally online education, Hillman and Corkery (2010) highlight that full-scale solutions encompassing whole educational programs involve more than teaching and learning issues.

In many ways, one might think the transition would be easy since we were not novices to the distance education field. However, the infrastructure requirements to move in this direction webbed out to encompass the entire university to an extent not anticipated (Hillman and Corkery, 2010, p. 468).

Similarly, Rovai and Downey (2010) note that the development of distance and online education is a long process with many barriers to overcome to attract and retain students. One major factor identified in research as necessary for developing stable and sustainable online education is related to management. Hillman and Corkery (2010) suggest that educational management plays an important role for the development from distance to totally online programs and online education cannot be viewed as a simple adjustment or a 'tag on'. That is, online programs require a solid institutional infrastructure to support the programs along with a willingness to collaborate and communicate among departments on campus. By necessity, an openness to question the 'status quo' is essential (Hillman and Corkery, 2010, p. 473).

Previous research has shown that drivers for the development of distance education many times are a consequence of a grass roots movement occurring at the department level (Hillman & Corkery, 2010). Other research also acknowledges the view that successful implementation of e-Learning requires an enthusiastic grass roots movement driven by innovators. To establish long-term stability, however, requires academic staff acceptance and engagement in combination with institutional structures in place to support the sustainability and mainstreaming of e-Learning initiatives (MacKeog & Seamus, 2009; Roberts, 2008). Clearly, there are real obstacles encountered when implementing change such as distance learning when funding is tight and competing priorities are present.

It also has to be acknowledged that while the support of senior management for change is essential, purely top down implementation strategies will not work in the traditional academic environment. The concerns and needs of academics and other stakeholders must also be addressed (MacKeog & Seamus, 2009, p. 152).

In addition, leadership is strongly associated with success; Löfström and Nevgi (2007), in their study of Helsinki University, conclude that commitment from department heads is a critical factor in the development of web-based teaching, especially for maintaining high levels of pedagogical and technical support. This support level is needed to increase the number of teachers in web-based teaching. Similarly, Garrisson and Kanuka (2008) note that in order to enable development, the senior leadership has to be strong and support ideas and projects: "There must be a strategic selection of projects with accompanying resources, support and recognition" (p. 21). However, other researchers confirm that implementation of technology in education is a question of educational management as well as management's relation to "internal factors such as resources, organizational culture, faculty readiness, anticipated degree of resistance, and the degree of variance from the status quo" (Roberts, 2008, Rovai & Downey, 2010). Similarly, Stoik (2001), on basis of her study of integrating technology in education at a university, notes that strategic leadership and institutions have to be flexible and with the capacity to self-organize, adapt,

and sustain itself in an ever-changing environment.

Distance, online, and campus course 1994 to 2010 – a department perspective

The Department of Education's experience with distance education and curiosity for technology contributed to the use of video conferencing in the early 1990s (Dahlgren & Karp, 1998). In the middle of the 1990s, ICT, email, and World Wide Web started to replace the delivery of the course material (Söderström, 1997, 1998). The emergence of this technology also influenced how teaching was designed and carried out. From the beginning of 1995 to 1998, teaching on the web changed character from delivery of information to more interaction between teachers and peer students (Söderström, 1998). In the 1990s, it were the teachers who expressed 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 2001, an ICT educationist was hired; this was followed in late 2002 by another hire. Today there are three ICT educationists employed at the department. In the late 1990s, the department decided to own and control the technology to be able to adjust ICT solutions in relation to pedagogical needs. In addition, the university did not have an online education environment that met the requirements of the department.

However, despite this stronger emphasis on ICT as a tool for teaching, it took many years before everyone at the department used ICT in their teaching. In 2002, the ICT policy called for teaching to be integrated with ICT and initiated ICT-pedagogic development. Other areas in the policy covered information strategies, the ICT competence among the staff, and defined the responsibilities of the ICT-educationists. In the document information and communication strategy from 2008, the role of ICT in teaching and online education was much more explicitly expressed. The strategy was 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 pointed out that knowledge from different ICT initiatives should be followed up to enable long-term knowledge production and to demonstrate how knowledge and experiences should be spread within the department. During 2010, it was decided to not have any particular ICT policy, since ICT was fully integrated and seen as a natural part of the of the department's operations.

Student development at campus and distance courses

The results from our investigation of economic, staff, and student data show that both the number of distance courses and the number of students increased between 1994 and 2010. When it comes to courses 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 five weeks (7.5 ECTs) (Table 1).

Table 1: Number of courses between 1994 and 2010

Year	No. Courses Campus	No. Courses Distance
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 shows that the number of courses increased significantly from 2002 (campus) to 2003 (distance). Since the shorter courses were introduced, the number of students reading the courses has also increased (Figure 1).

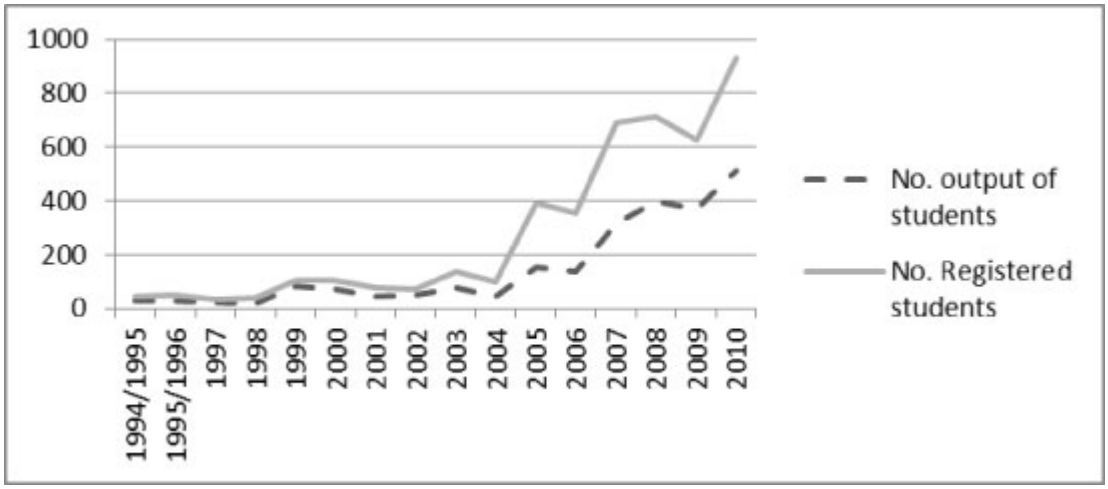

Figure 1. Number of registered students and output of students between 1994-2010 in distance courses.

Figure 1 illustrates that the number of registered distance students significantly increased, especially since 2005. The output of distance students was approximately 60 % (1994/1995) and it has been around 55 % the latest three years. However, the figure also illustrates that there was a minor decline in the output of students between 2005 and 2007. The number of students increased dramatically in 2007, which also was the first time when all distance courses shifted to totally online courses with 50 % study pace. From 2005, all of the distance courses in general education used the learning management system Moodle. Before that, other systems such as First Class or web pages in combination with synchronous software (audio and video) were used. The campus courses in general education have decreased during the same period (Figure 2).

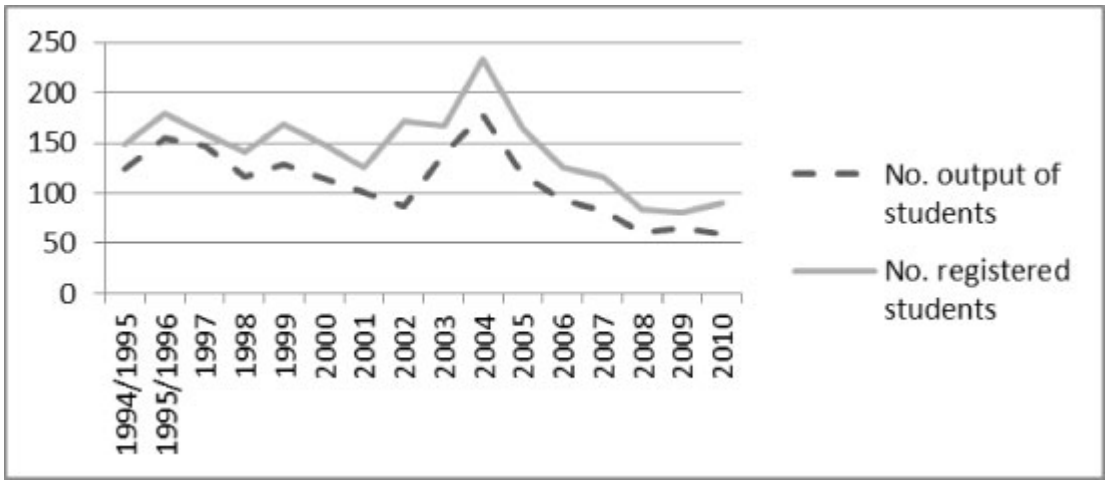

Figure 2. Number of registered students and output of students between 1994 and 2010 in campus education.

Figure 2 illustrates that the number of registered students has gradually declined since 1994. However, the output was around 85 % in the 1990s but declined in the middle of 2000 to be around 72 % with the lowest value (66 %) evident in 2010. In 2008, 100 % study pace courses online were started (Figure 3). The online alternative (100 % study pace), which started in 2008, attracted more students than the campus option.

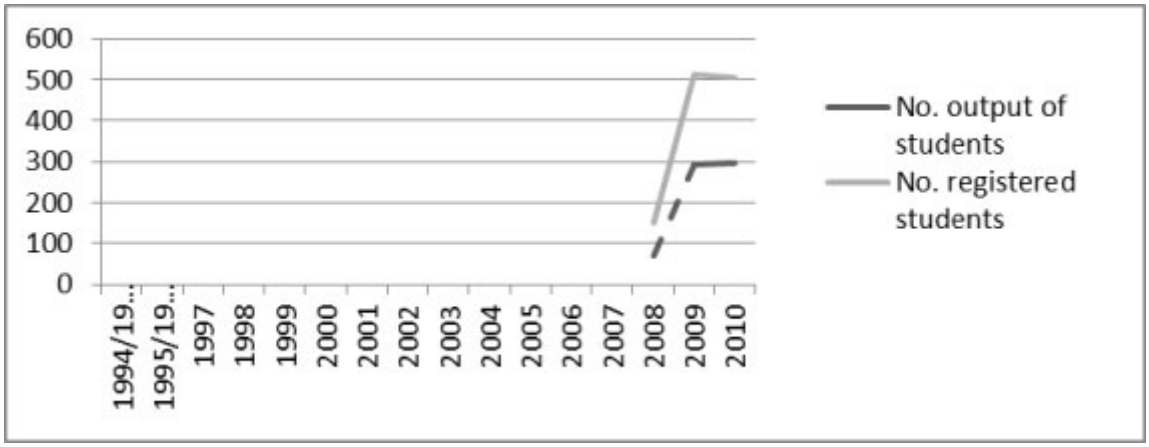

Figure 3. Number of registered students and output of students between 1994-2010 in totally online education (100 % study pace).

Figure 3 shows that the online alternative (100% study pace) attracted four times as many students as the campus option (Figure 2).

Economic development at campus and distance courses

It is the output of students that determines level of state funding and Figure 4 clearly shows how the change in student numbers impacted the economics of the department.

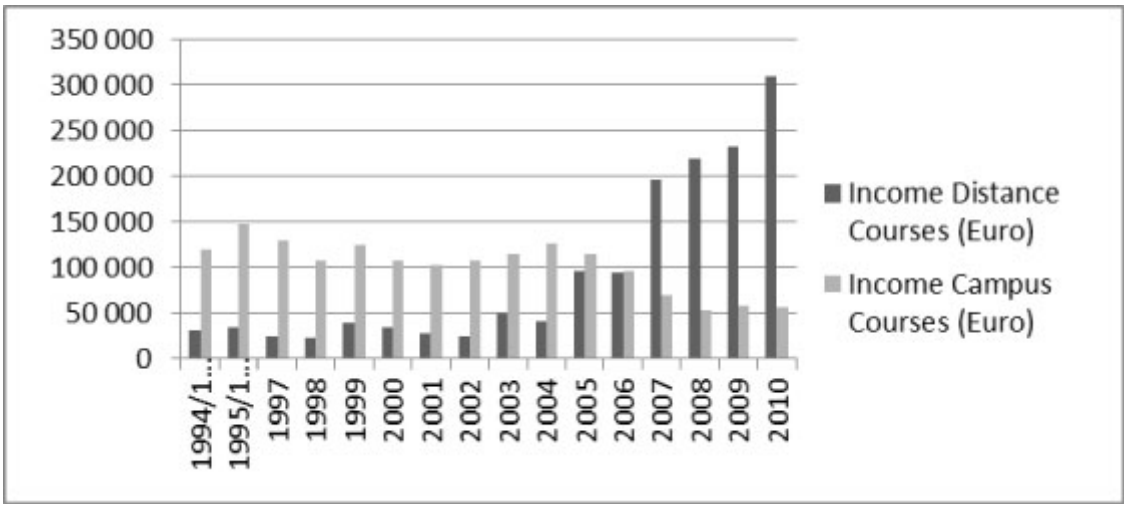

Figure 4. Income from distance and campus education from 1994 to 2010.

Figure 4 illustrates that the income from the distance courses and the online courses has gradually increased, especially since the shift to totally online courses, which started in 2007. If we consider the 100 % study pace online courses, the economic income from those courses has grown from 123,600 Euro in 2008 to 468,900 Euro in 2010. Therefore, if both the 50 % and 100 % study pace courses are considered from 2010, the income from online courses was 778,700 Euro and the income from campus courses was 55,800 Euro. If the costs between the campus and distance education are taken into account, the above mentioned ROI (return of investment) argument, the impact of distance education is even more considerable. The difference between the different forms of education is that costs are practically the same but allocated to different cost centres for campus compared to the distance education. The costs for campus courses are mainly costs for teachers and lecture rooms, while costs for distance courses can be attributed to teachers and ICT-support provided by an ICT educationist. The infrastructure in the form of servers etc. also supports campus courses, which includes web-based elements and there is, in that respect, no special infrastructure for distance education. In other words, the costs differ not in any major way between the campus courses and distance courses.

Summary of distance education development

Figure 5 below summarizes the development from distance to online education at the department.

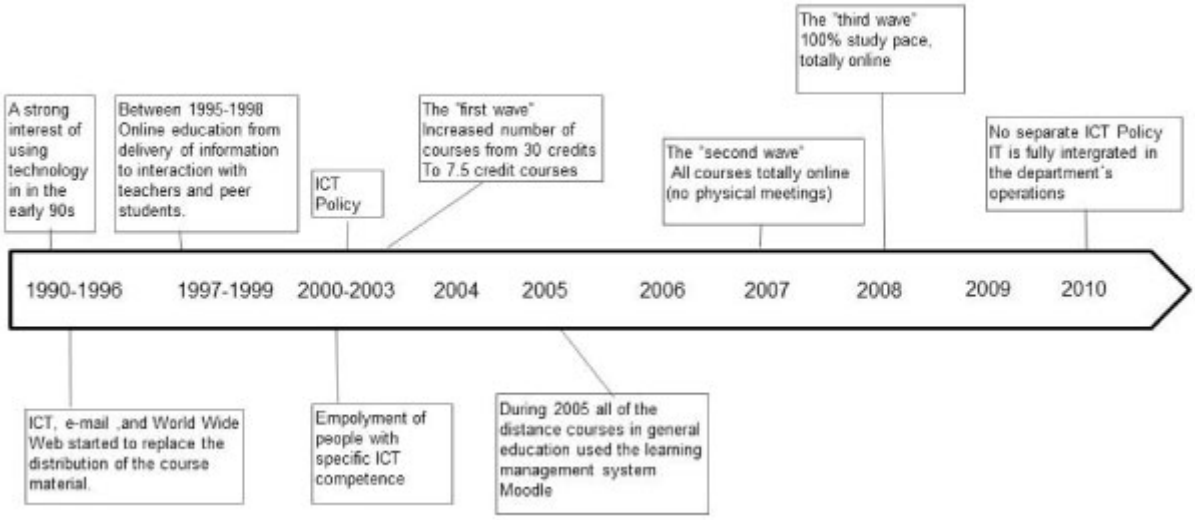

Figure 5. Summary of the shift from distance to online education at the Department of Education (1994-2010).

The figure shows that different strategic decisions and activities – such as enthusiastic teachers in the premature phase, policy implementation leading to strategic decision, in-house ICT staff, and supportive academic leadership – have been key factors for the development of online courses.

Discussion

As with Rovai and Downey's (2010) conclusion that the development of distance education is a long process, our results show that during the last 20 years the development of ICT has gone from 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 that determine whether or not to develop or discontinue courses or to employ people with specific knowledge. It is clear that rapid technological development has had a major impact on the growth of distance and online education at the department (cf. Stock McIsaac & Nirmalani Gunawardena, 1996). It forced the department at different times to make decisions on strategic issues. In 1996, the students attending courses did not have Internet at home and they were not using the Internet (Söderström, 1997). Today, the situation is totally different. Nearly all students have their own computers and access to the Internet at home and they demand the departments to use ICT to facilitate their studies. From a general point of view, the early enthusiasts at the department were the ones who developed a fundament for later institutional policies and strategies. This is also acknowledged by Garrison and Kanuka (2008); they suggest that it is necessary to have visionary team leaders who confront challenges caused by information and communication technologies. The recognition of the enthusiasts' work and the supportive leadership at the department has resulted in a bottom-up response (Garrison and Kanuka, 2008), which has resulted in a top-down and bottom-up action to technology use. In 2001, this uptake from the staff by the department head led to strategic decisions to employ people with specific ICT competence and to own and control the technology.

As the results reveal, the ambition in the first policy from 2001 and later in the strategic plan formulated in 2008 has worked as a framework for vision and goals supported by the leadership. It has enabled for decisions based on pedagogical and technological views related to the specifics of the department's activities and to satisfy the needs of teachers. The data show that between 2002 and 2003 the number of courses increased and this increase raised the number of students and the total income. Another important decision was the shift from distance, with physical meetings and online activities, to totally online courses in 2007. This shift doubled the number of students and doubled the income from the courses. One major reason for this shift to a 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 it was still low the first year. It resulted in a demanding working situation for the teachers, and projects aiming at increasing the online educational quality were initiated. For instance, projects were established to encourage a feeling of community among the students, and activities directed to the teachers were performed more easily in online settings. The results also show that the output of students increased from 2008, which, in combination with many more registered students, dramatically increased the economic output from online courses. In 2008, the department also decided to try to promote courses in 100% study pace totally online. The results show that these courses attracted many more students compared to the traditional campus courses, which over the years attracted fewer students. Today, the income from the campus courses pays for one teacher whereas the online courses pay for approximately 12 teachers.

As the result of the educational management strategy, the department has been able to develop education as an academic subject at the university. At the beginning of the 2000s, the income from courses in general courses such as "teaching" or "education" were low. Teachers had few hours for teaching a course since

there were few students attending and carrying out the courses (the income from the course regulates how many teaching hours each course has). The change from distance to online courses has contributed to more students (economy of scale), which has made it possible to secure resources for pedagogical development work. The online courses have also contributed to better working conditions for the teachers. The teachers 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 education as an academic subject. However, the influences of the market can, as Guzman and Trivelato (2010) point out, contribute to mechanistic standardized courses, but the decision to control the technology and manage the systems made it possible to adjust the online environment to the needs of the teachers. The decision to employ ICT educationists enabled for professional teacher support in relation to different learning conditions and to work individually with teachers' competence to increase the number of online teachers (c.f. Löfström and Nevgi, 2007)

One other reflection we want to stress is that what started with primitive web pages at one or two courses has turned into ubiquitous ICT support for all on-campus, distance, and online courses. Chaves (2009) claims that increasing student participation in online education is informed by strategic thinking; similarly, our study shows that the transition from distance to online education needs informed strategic thinking and planning supported by the academic leadership. Garrison and Kanuka (2008) questions whether senior academic leaders are prepared to re-examine and position their departments for new and emerging methodologies. We want to add to this caveat: successful distance learning integration requires managing changes in higher education overall. This study shows that it takes time from the first tentative experiments with a single course until the whole range of courses is intertwined with ICT. The conditions the department faced caused the department to re-examine which courses to offer, the courses' study pace, physical meetings, and ICT issues. These considerations were based on how best to meet the needs of the learners of the twenty-first century.

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