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ODL Development in Denmark

Country profile

Size and population

Denmark is a monarchy with 5.4 million inhabitants. More than a million of the population is under 17 years. Similarly, more than a million of the population is over 60. The size of the active population (those in work plus the unemployed) is thus about 3 million people. Most of them live in towns and urbanized districts. Copenhagen is the capital and the biggest city in Denmark. Other big cities are Århus, Odense and Aalborg.

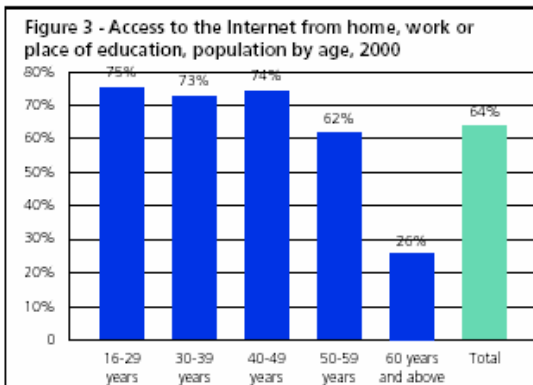
There are almost 2.9 million families, of which over 662.000 have children. Almost 1.6 million adults live on their own, about 127.000 of them have children. Over the period 1 January 2002 to 1 January 2003 the population increased by about 15,000 people. Immigration (net) to Denmark accounted for 9.000 of this increase. Immigrants and their descendants accounted for 8.0 per cent of the total population.

The country has no mountains and a well-developed infrastructure. No one has more than 30-40 km. to the nearest town in which a further adult educational centre is placed. Due to these geographical conditions Denmark does not have – in contrary to the other Nordic countries - a long tradition for distance education.

IT infrastructure of Denmark

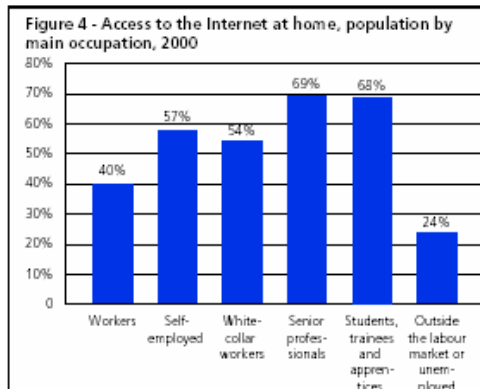
A survey carried out by Statistics Denmark shows that two out of three families today have a PC at home. Altogether 17 percent of the Danish families have gained access to a PC for the first time in the period from 1997 to 2000. Thus the total is now above 1.4 million families with access to at least one PC out of slightly over 2.2 million families in Denmark.

Half of the Danish population aged between 16 and 74 are connected to the Internet at home. Danish people also have access to PCs and the Internet outside their homes – for example at work, at school or where they are studying. Figure 3 shows, that 64 percent of the population has access to the Internet either at home, from work or from their place of education.



Source: "Informationssamfundet Danmark - en statistisk mosaik", Statistics Denmark, February 2001.

Students and senior professionals are the groups among whom Internet access from home is most widespread. Almost 70 percent of these groups have access to the Internet, see figure 4. Among those who are self-employed, 57 percent have Internet access from home. Internet access is least frequent among those outside the labour market and the unemployed.



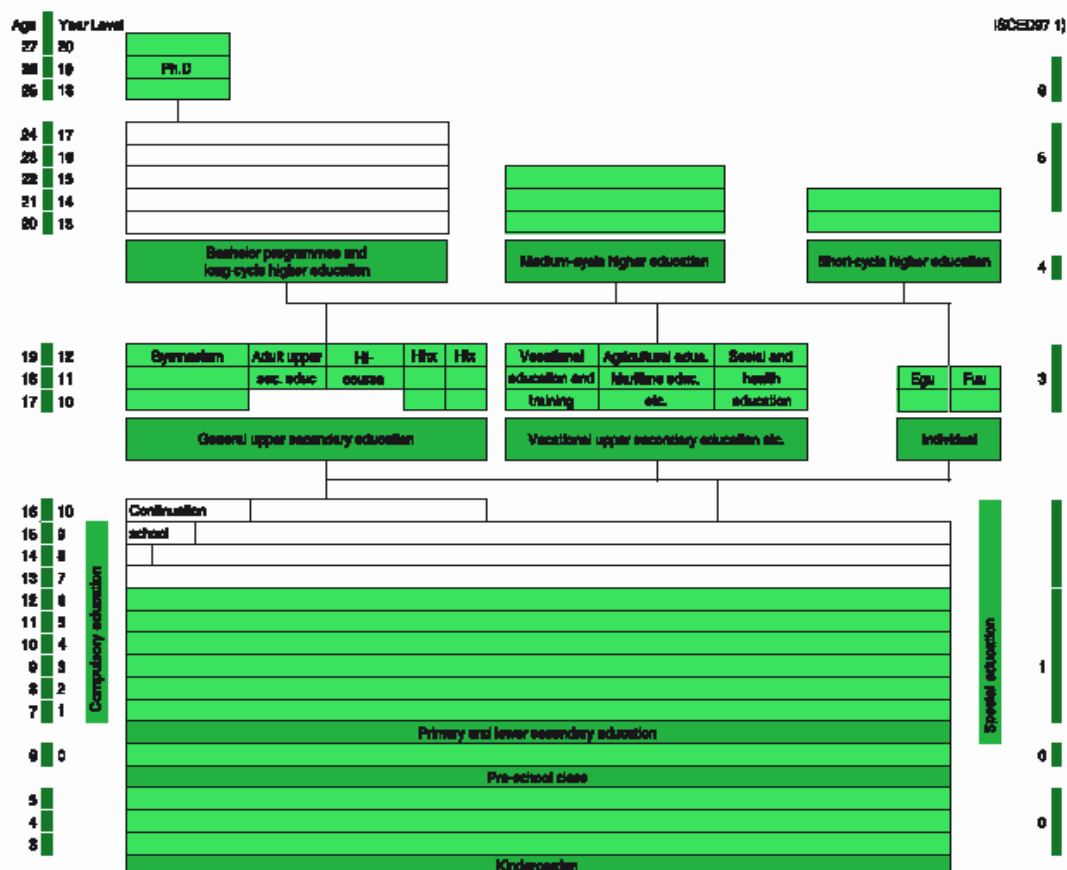
Source: "Informationssamfundet Danmark - en statistisk mosaik", Statistics Denmark, February 2001.

A survey made of PLS RAMBØLL in 2000 shows that the number of people who use the Internet for e-commerce has increased by 63 percent. Other areas where there has been rapid growth are visits to the homepages of banks and public institutions. The most common use of the Internet among Danish people is to send e-mails.

Overview of the national educational and training structure

The Danish education system is normally divided into a number of main areas according to level and branch of education. The main areas of the education system are presented below and in Figure 1.

Figure 1. The Danish Mainstream Education System



The youth education programmes are primarily academically (i.e. they prepare for further studies) or vocationally oriented (i.e. they prepare for the labour market). As an additional offer for young people, there are the individually organised programmes: the vocational basic training programme (*egu*) and until 2002 the open youth education programme (*fuu*).

The higher education programmes provide occupational competencies. Generally, the higher education programmes are divided into levels according to their duration, namely short-cycle, medium-cycle, including the bachelor programme, and the long-cycle higher education programmes. The higher education programmes build on to a youth education programme. The programmes are of varying duration, and some are theoretical where others have practical training included in the course.

In Denmark, there is a long and strong tradition of liberal adult education, "*folkeoplysning*", and adult education. The adult education can be publicly financed and regulated by law, but there is a wide range of private offers. Adult education can be divided into three categories: courses that are leading to formal qualifications, courses that are not leading and private courses.

National policies on ODL

In the 20th century, only the Home Guard's educational programme, the civilian education within the armed forces and a few private organisations offered traditional correspondence education.

In the same period and even earlier, there has been a Danish tradition for offering open educational programmes besides of the formal educational system. In the last half of the 19th century the Danish Folk High Schools were created by inspiration from Grundtvig (a Danish writer and philosopher). They offered courses for farmers and farm workers (men and women) during the winter season. The courses initiated a great impact on the development of Danish parliamentary system at that time due to the generally growing consciousness in the population. Later in the century and up through the 20th century the tradition was adapted to urban life and courses were offered for working class people as evening classes organised by trade unions and NGO's. Furthermore, after the Second World War a Danish Folk University (University Extension) was set up to offer series of lectures by university professors to the general public for a small fee. All of these initiatives are still in operation.

Parallel to development of the non-formal educational system in the pre-war period the formal educational system began to offer regulated exams based courses as evening classes. The most successful initiative was a diploma in business and management administration offered by the Danish Business Universities.

In 1981 formal open and distance education was started by dispensation from the Ministry of Education with a pilot course at Aarhus University in comparative literature. The following year Jutland Open University was established as collaboration between the faculties of humanities at Aalborg University (AaU), Aarhus University (AU) and South Jutland University Centre (SUC) (the first two years of educational programmes especially within the field of humanities) organised as distance education with week-end-seminars and study support via mail and telephone. Between 1987 and 1992 the first R&D project on the use of

computer conferencing in distance education was conducted in collaboration with IBM Denmark.

The Danish Law of Open Education

In 1989 the Danish Parliament passed the first Danish law on open education. This law was not a law on open and distance learning, but a law on part-time studies at institutions belonging to the Ministry of Education. The law covers both long, middle and short further education - universities and other higher educational institutions, non-university mid-cycle education (e.g. social workers, teachers in primary schools) and technical schools and colleges. The law didn't view ODL any differently from e.g. evening classes and other types of part-time education.

Furthermore, the law introduced tuition fees for part-time students. The fee is decided by the institution offering the course or programme and automatically supplemented by a grant per student from the Ministry of Education paid directly to the institution according to a yearly-adjusted key. Grants are higher for courses within Science and IT than within Humanities and Social Sciences. The grant is transferred to the institution when the student has paid his/her fee.

This financial model for open education activities is very different from the model in use for full-time educational activities.

Let's use the university sector to illustrate this: For full-time students the university receives a sum per student that progresses one year by passing his/her exams. The sum differs from subject to subject regulated on a yearly-basis by the Ministry of Education (since 2001 the Ministry of Research). Students pay no tuition fees and are accepted to university through the system of highest average credit points. Research activities at the university are financed separately. Fortunately enough open education activities are not financed similarly - according to passed exams. Many part-time students in open education programmes/courses do not take to their final exams, because they are interested only in the content, not in the certificate. To view this as dropout would be wrong: the student got what they came for.

Finally, the law stated that the entrance qualifications for students to enter part-time programmes should be similar to the ones required for full-time students, but without the highest average credit point system in function.

In Denmark ODL is regulated by law and rules imposed by the Ministry of Education (since 2001 in collaboration with the Ministry of Research to which the university sector was transferred) to the extent that only offering of courses within formal study programmes are entitled to grants. Beyond the formal educational system the educational market in Denmark is open both for private organisations, enterprises, and public institutions that want to provide courses. If universities or other public funded institutions offer special designed further education courses to private companies or other public institutions, all expenses have to be covered by the purchaser.

The way the law was constructed there has been no encouragement to develop open and distance learning or to implement ICT in the courses. Institutions offering their courses as evening classes are able to earn as much as institutions

using ODL techniques - and for a lower investment in both course production and course delivery.

During the 1990s the law on open learning has been revised several times and the grant structure has been moderated slightly. More influential changes were made in laws and rules regulating

- access to open educational programmes for unemployed, and
- a possibility to obtain paid leave from work for education.

Unfortunately change in this context mostly was equivalent to tightening access!

In 2000 the Danish Parliament passed a series of laws focusing on job-related basic and further adult education. An alternative degree structure aimed at employed people with 3 years of practice was introduced. The laws are an extension of the law on open education from 1989, but offer new possibilities for institutions to create series of new further educational courses, diploma and master degree programmes targeted at adults in a life long learning perspective.

ODL in the Danish non-university sector

The use of distance education in the formal educational system was more or less non-existent until a few years ago. In the beginning of the nineties people began to focus on the potentials of distance education. First, it was seen as education that could combat geographical problems, but secondly the focus was also upon the flexibility of distance education.

Distance education in general upper secondary education hardly exists, since the schools in Denmark are not allowed to let their students work in a flexible, non-scheduled way. However, high schools around the country do include the technology of the technology-supported learning and several consortiums are cooperating in order to establish a common learning platform, which can assist the ordinary class education.

Also the VUC; the adult education centres in the counties, work with flexible learning methods in which distance education and ordinary class learning are combined. The open workshops, where the students come and work with distance education materials are very popular. To these workshops an advisory officer is often connected, helping out with questions etc.

The situation is however slightly different within the field of further adult education. Different pilot projects have been started with the support of the Ministry of Education and Denmark's national information centre for technology supported learning (CTU). The great boom, though, was created on the basis of a very favourable subsidy system, determined by the Ministry of Education, to distance education within the IT-field. The subsidies were so attractive that all vocational schools wanted distance education irrespective of their need for it, experience within the field and no matter if the learning concept fitted their target group. During a period of two years an enormous amount of distance courses were carried out within the ECDL – the European Computer Driving Licence.

Despite the fact the special subsidies have been reduced significantly, the boom resulted in several consortiums, like for instance *Danmarks Netskole*, driven by

Vitus Bering – Center for videregående Uddannelse, Fredericia-Middelfart Tekniske Skole and Lollands Tekniske Skole, who are still working together offering distance education to the whole of the country. The consortiums that exist today face very hard competition in the market. And the courses they run are still primarily within the IT-field. However, new courses/subjects have begun to grow.

The target groups of the distance education courses presented by the vocational schools vary from the lowest professional levels to the highest. The teaching methods are mainly based on distance learning without any kind of class seminars.

In the Danish "*Folkeskole*" (1st- 9th grade), where the target group is children and young people, distance education hardly exists.

In the area of liberal education¹ the situation looks as follows: Despite the fact that the idea of liberal adult education was founded by Grundtvig and that his ideals were to provide education for all social groups, it is not permitted to carry out distance education under the existing laws in Denmark. The target groups of the liberal education programme are those who cannot find any offers in other (established) educational institutions. People, who have finished their upper secondary education and do not want to continue in vocational training or in university, can use the offers from the liberal adult education providers. However, distance education within this system is not entitled to subsidies. This means that the incentive to developing distance education has been very small and therefore only a small amount of offers for distance education exist within the liberal education system.

Private training organisations

Over the last 10 years, several private training organisations have fought an unequal struggle against the subsidised distance education. The private organisations has benefited positively by a tax law allowing a tax reduction for employees getting an employer paid PC, if they enrolled in an IT course simultaneously. The private organisations have been able to make training offers targeting this special group, whereas the public organisations have been more limited due to the restrictions imposed by the limitations of the subsidy system. This is however a market with heavy competition which makes it difficult for the private companies to offer anything else but CBT based learning.

¹ 'Folkeoplysning' (liberal adult education) is a concept encompassing teaching and educational methods, which do not form part of the formal public education system. 'Folkeoplysning' as a concept originates in the religious and social movements of the 19th century. One of the main proponents of these movements was the Danish philosopher, poet, educationalist and clergyman, N.F.S. Grundtvig (from the website of the Danish Ministry of Education – www.uvm.dk).

ODL in the Danish university sector

Since 1990 the Danish university model has been a clear dual mode model in which each institution has the opportunity to offer part-time study programmes within the same areas as they are offering programmes for full-time students.

Besides offering dedicated open education courses and programmes the law also opens the opportunity for institutions to offer available seats in ordinary classes (lectures and workshops) to part-time students on open learning conditions (fee and grant).

The amount of open learning students varies greatly from institution to institution and from faculty to faculty. Some faculties have more open learning students assigned to full-time courses according to the empty seat regulation than to dedicated part-time programmes. At other faculties the situation is quite the opposite.

As the law is constructed the university sector has problems adapting to the market needs. A full-time university teacher has approximately 40% of his working time allocated to research, but the grant received by the government only covers part of the teaching expenses, not the research costs. This limits the possibilities for hiring new full-time staff as the interest within a certain area expands - unless the student fee becomes very high. Furthermore the interest in certain areas - e.g. IT-related topics - seems to rise among full-time students and part-time students at the same time.

The year 2000 law on adult further education has especially interest to the university sector since the master degree programmes (mentioned above) have to be research based and universities or university-like institutions are the only ones to offer research-based education. In some cases diploma degree universities will also offer programmes, but basically diploma degrees are offered by Centres of Further Education based on collaboration between institutions offering middle long further educational programmes for full-time students.

Over the last couple of years the Danish universities have developed a whole series of master degree programmes and more are in preparation. The programmes are offered according to the law of open education.

The profiles of the master degree programmes are clearly different from the courses and programmes offered as part-time editions of programmes for full-time students. The courses are all on a post Bachelor level, but especially designed for students working full-time making use flexible net-based learning environments and focusing on competence development based on working experiences. The fee - but not the grant - varies from programme to programme, but is considerably higher than in traditional open learning. In most cases the employer pays the fee on behalf of the student - even though the student is admitted on an individual basis.

In the spring of 2003 the Danish Parliament passed a new university law in which universities are obliged to offer education for:

- bachelor degrees for full-time students;
- master degrees for full-time students;
- Ph.D. degrees;

- part-time educational programmes for adults at work.

For the first time the obligation of the universities to play a significant role in life-long learning is stated by law!

E-Learning in Denmark

In Denmark two initiatives have been taken to encourage the use of ICT in education in general, and in open education in particular:

- the Danish Electronic Research Library
- the Danish Virtual University.

The Danish Electronic Research Library

Since 1997 the Ministries of IT and Research, of Education, and of Culture have joined forces in establishing the *Danish Electronic Research Library* as a network between existing research libraries, university libraries and information centres. They have joined forces to become one big, united information system by applying the same standards for communication, searching, registration, documentation and representation.

The users are able:

- to make fast and co-ordinated search in all the information databases independently of their physical placement both within the country and internationally,
- to use a similar, user-friendly search system with the same user-interface in all databases,
- to receive an automatically up-dated list of information (literature, articles, periodicals, etc.) chosen according to individual search criteria.

The Danish Virtual University

Establishing a *Danish Virtual University* was an initiative taken the Ministries of IT and Research, and of Education in the spring of 2000. Approximately € 5.5 mill was allocated to start an initiative with two components:

- building of a portal for flexible net-based distance education courses on a higher and further educational level with access to the Danish Electronic Library, to student administrative systems and to relevant databases,
- support for course development of flexible net-based courses to be offered through the portal called the Danish Virtual University (to get support courses should be produced jointly by institutions and at least 50% of the development costs should be covered by the institutions).

The aim was that the Danish Virtual University should reach several user groups:

- full-time students that want to take part of their education or their full education as net-based flexible learning,
- employed people that require further education at a high level offered at time and place that fit their active life,
- public and private enterprises for whom competence development is an important factor of competition and an integrated part for their personnel development scheme,
- higher and further education institutions that want to offer net-based courses and to take advantages of the educational platform and the incorporated tools in their course development.

When a new government took office in November 2001 the initiative was stopped from one day to the next with no further explanation.

Most experts were of the opinion that the project was extremely under-financed; they all supported the basic rationale behind the project. They also supported the need for a government-supported initiative to support e-learning in Denmark, it seemed that the key question was how to do that.

Currently, the Council of University Rectors in Denmark is in charge of a small project supported by the Ministry of Research to establish a portal for flexible learning at university level. According to the plan the portal should be in operation by September 2003.

← **Formateret:** Punktopstilling

Synthesis of interviews with experts

In this report the interviews with Danish experts will be analysed and synthesised.

The interviews were made mostly on the phone, some few have answered the questions in written form, and a single person has written and afterwards been interviewed face-to-face. The interviews were carried out between 3 March and 19 March by Magda Nielsen. The list of interviewed persons can be seen in Appendix A.

The persons interviewed are involved in ODL in different ways, from designing, delivering or administrating courses to the drawing up of guidelines and policies. Most of the people were from in-service training, higher and continuing education. The fields have overlapping activities and several persons are involved in different ODL initiatives across the institutions. None of the persons were from primary/secondary schools.

In section 3.1 there is a short introduction to all the interviewed institutions and in the following section, features that have been seen to be central to the Danish approach will be discussed in the section.

These features are:

- Blended learning
- Action learning – problem oriented
- Group/ team work
- The tutor /Teacher in ODL
- The Learner
- Drop out rates
- Lack of support from the management
- The Teaching material

List of interviewed institutions/organisations

The Ministry of Science, Technology and Innovation

The Ministry of Science, Technology and Innovation was created in November 2001 after a change of government and one of it's responsibilities is to support the research and education in universities, industrial research and Denmark's policy on technology and innovation.

The object of the Ministry is to promote the interaction of trade and industry, centres of research and education and to strengthen coordination in pursuance of industry and research policy.

A number of institutions and commissions are associated with the Ministry of Science, Technology and Innovation, including the universities, Danish Research Agency, Risø National Laboratory, the National Telecom Agency, the Danish State Information Service, the Secretariat of the Danish Rectors' Conference, the

authorised technological service institutes (GTS institutes), Sensor Technology Centre A/S, Centre for Applied Computer Science, Advanced Technology Group (the Industry Association for the GTS institutes) and the Innovation Group

In addition the Ministry provides the secretariat supporting the Danish Council for Research Policy, the Telecommunications Consumer Board and the Telecommunications Complaint Board.

The Ministry of Education

The Ministry of Education is one of the large ministries in Denmark. The responsibilities of the Ministry are: to ensure the Minister of Education a solid information basis as a starting point for the political activity, to develop and formulate education policies and attend to an overall management and supervision of the education and institutions at the field of the ministry. A part of the field includes the use of IT in training and education.

The ministry has an IT strategy that serves as a guideline for all initiatives in this field. The IT strategy is based on the fact that the keywords in the educational system of the future are: production of knowledge, geographical and temporal independence, pedagogic and structural innovation. The IT strategy deals with: up-to-date qualifications in the information society, the integration of new pedagogic opportunities, equal and flexible access to education, effective and flexible structure and organisation. The strategic objectives are expressed in terms of five areas of actions: basic skills, responsibilities of leadership, teaching and learning, the electronic infrastructure and teaching materials.

Uni-C

Uni-C, Denmark's IT-centre for education and research is an IT company under Ministry of Education. Their area of work and their guidelines are given by the Ministry's political objectives on the subject of IT. Over the last 4-5 year Uni-C has worked to get all Danish schools on the Internet and to further the use of schools for pedagogical and administrative tasks. To that use they have developed the Pedagogical IT licence – a course for teachers - in different versions. The versions have a lot in common, but divide by being tailored to the needs of the different types of schools. Common for the Pedagogical IT licence is that it is flexible, but has fixed components like e-learning, special designed modules with focus on integration of IT, teamwork and instructors.

IT-vest

IT-vest is an education and research cooperation between Aarhus Business School, Southern Danish University, Aarhus University and Aalborg University. The cooperation was established in 1999 with the purpose to strengthen the offer of IT educations in Western Denmark. IT-vest offers education within these IT related areas: from analysis, design and construction of IT systems to IT integrating areas as organisation, economy, teaching and management. IT-vest offers candidate, masters and diploma degrees. It-vest can be considered as a virtual university, which links and coordinates IT educations at the four institutions

IMV, Department of Information and Media Study, University of Aarhus

IMV is a research and education institution. The research and teaching falls broadly within the scope of information and media study. The research in information studies includes historical, sociological, communicative and design-oriented approaches to the study. The research in media studies includes projects concerning production aesthetics, textual analysis and reception within the print media, radio, TV, film and the Internet. IMV offers bachelor degrees, masters degrees and supplementary education in information and media study and also in multimedia. The education for multimedia, IT and organisations and ICT and learning is conducted by IT Vest.

The Danish Pedagogical University, DPU

The university was established 1 July 2000 and is a merger of three departments all involved in teacher training and research in education. The purpose of DPU is to make research and offer further and higher education in the pedagogical area. The master degree is completed parallel with paid employment. The aim is to offer theoretical education as well as relevant work experience, building on the competences developed by the student before entering the programme. The master programme covers adult education, pedagogical IT, health pedagogy, development of profession, citizenship, special pedagogy. One of these Masters Programmes is offered as ODL.

DPU is also involved in an inter-institutional Masters Programme. This is called Master in ICT and learning, and it is a relatively new programme that DPU offers together with Aalborg University, Aarhus University, Roskilde University Centre and Copenhagen Business School. The Programme is delivered by IT Vest.

IT University of Copenhagen (ITU)

ITU is a teaching and research-based university concerned with information technology (IT) and the opportunities it offers.

The university was established in 1999. It's objective is to undertake both theoretical research and applied research into the interaction and growing importance of information technology to society.

Denmark's largest Open Source initiative, LinuxLab.dk is situated at the IT University of Copenhagen. LinuxLab is the Linux laboratory at the IT University of Copenhagen. LinuxLab offers a central Open Source environment in the Oresund region, to the benefit of students, researchers and the general public.

The ITU offers a range of courses in IT including:

Six two-year Master of Science courses. These courses are offered on a full-time basis and include a research component.

Four Master programmes who can be followed on a part-time basis over three years.

One part-time graduate diploma course (something is missing in this sentence???). The ITU covers all aspects of information technology, including

natural sciences, humanities and social sciences, business impact and the commercialisation of IT.

The ITU cooperates with a number of institutions, for instance: the University of Copenhagen, the Copenhagen Business School, the Technical University of Denmark and the University of Roskilde.

The Educational Resource Centre in the County of Vejle

Spread all over the country, the Educational Resource Centres are all subject to the same law, have the same name, and provide the same basic services. In Denmark's 14 counties and two metropolitan boroughs the Educational Resource Centres function as resource and development centres for schools and educational institutions. The Educational Resource Centres are under legal obligation to offer information on and distribution of educational material to schools and educational institutions in the county. In continuation hereof, the advisers of the centre offer professional-pedagogical advice and arrange various courses for teachers in the primary schools and for the general upper-secondary and adult education. IT forms a naturally integral part of all processes at the technical-administrative as well as the educational level.

In addition, every single centre pays special attention to a number of key issues or main activities, which can be both of limited or long-term duration. In the Educational Resource Centre in the County of Vejle, this additional focus is on the International Dimension in Education

Since 1996, the Educational Resource Centre in the County of Vejle has made target efforts in establishing a co-ordinating network between sister institutions in different European Regions (West-Wales and Toscana).

The object of this network was / is to create a basis for the establishment of partnerships between schools from all three regions and furthermore to offer them an educational concept to co-operate on. The project is called "Roots and Wings" and has resulted in various co-operation projects between around 55 schools from each of the three regions.

As from the year 2000, this regional co-ordinating co-operation has been extended to include Malmö/Sweden, Steiermark/Austria, Olomouc/The Czech Republic and Dublin/Ireland - all in all seven regions in Europe.

Randers Business College

Randers Business College was established in 1877, and today it consists of four independent educational departments: Two of these departments represent the vocational upper secondary education: an adult educational department, and a department for short-cycle higher education courses. The vocational upper secondary education represents 58% of the turnover, the adult educational department 20%, and the short-cycle higher education courses 24% of the turnover.

Randers Business College is one of Denmark's largest with a turnover of approx. DKK 99 million, 1800 students studying full-time and approx. 190 full-time employees. Development, internationalisation, quality, and co-operation are

focus areas in Randers Business College's strategic. Their peak competencies are commerce, service, marketing, management, and competence development.

The EDB School

The EDB School is a part of Vejle Business College, situated in the middle of Jutland. Vejle Business College offers vocational upper secondary education, further education within the commercial area and courses for employees and other in-service training. The EDB School is the part of the school that offers IT and IT related courses. Most of the courses lead to a recognised examination. They have developed their own distance education concept called Fug@ which they have developed on a Blackboard 5.5. LMS solution.

EUC midt

EUC midt, is another type of public technical and vocational training institution. They offer a large number of different vocational training. The first part of a vocational training is called a basic course, and the pupils continue hereafter with their speciality, which is called main course. Vocational training is divided between training in school and in a company.

EUC midt has focus on e-learning. They have a partner agreement with Danish Probe, who is the producer of the Danish Learning Management System, ABC Academy. E-learning is used internal for the in-service training of the employees and external as standard courses, development of and implementation of special courses for companies.

Fredericia-Middelfart Technical School (FMTS)

FMTS was established in 1982 with localities on both side of Lillebælt between Jutland and Funen. The school offers vocational training within 6 areas, technical upper secondary education, further education, in-service training, special designed courses and consulting. Course activities are affiliated to the school, which has focus on in-service education of technicians and skilled workers, open education and distance education. FMTS offers distance education as a partner of Denmark's Net School, which is a joint project carried out by three technical schools, FMTS, Vitus Bering and EUC Lolland.

DEL - The Danish Institute for Educational Training of Vocational Teachers – Odense (DEL-syd)

The Danish Institute for Educational Training of Vocational Teachers is a national institution responsible for qualifying postgraduate teacher training for vocational teachers, professional pedagogic in-service and further training of teachers and leading staff at business colleges, technical colleges, labour market training centres etc., They do a lot of vocational pedagogic innovation and development work and act as consultants. They also take care of a number of documentation tasks, analysis and dissemination of knowledge. DEL has 3 regional departments: DEL-East (Copenhagen), DEL-South (Odense) and DEL-North (Aarhus). The interview has been with DEL-South

Rosborg Gymnasium

Rosborg Amtsgymnasium is a high school offering general upper secondary education. It is situated in Vejle, located in the middle of Jutland. Rosborg Gymnasium offers 2 different general courses, a 3-year course leading to Upper Secondary Leaving Examination ("*studentereksamen*"), or a 2-year course leading to Higher Preparatory Examination ("*HF*"). Both examinations provide students with entrance qualifications for university or other types of higher education. Furthermore, the school offers a 4-year education for especially talented athletes or music performers who need extra time for practising. Rosborg Amtsgymnasium & HF was founded in 1973. The school has about 750 students and a staff of 90 people, and this makes it one of the biggest schools of its kind in Denmark.

In addition to a number of core subjects, the students at both courses can choose among a large number of optional subjects and in this way combine subjects to specific needs and wishes. Professional, high-quality teaching is reached within the different subjects and by working interdisciplinary and with projects where teachers and students in cooperation work towards common goals. A lot of development work is taking place at Rosborg insofar as they employ innovative ways of working, implement IT in teaching the various subjects, and establish teacher teams around every class. All students have access to computers and the Internet.

Tønder Gymnasium

Tønder Gymnasium is situated in the Southern Denmark, near the German border. It is a high school offering general upper secondary education. The last years the school has focused on IT tool, development of evaluation tools, the pedagogical everyday life, development of teachers and school. In 2000 they established an intranet based on the Learning Management System, FirstClass, had a wireless Internet connection and had their first class using laptops. The intranet is connected with another high school, Langkær in Aarhus, and the purpose is to have both teachers and students cooperating by the means of IT.

Tønder Gymnasium has received additional funding for this initiative by the Ministry of Education.

@ventures

@ventures is a network for technology supported distance education and consists of Aalborg Business School, Lyngby Education Centre, Tietgen Skolen a technical College in Odense, Sønderborg Business School and Århus Business School. Since 1995 @ventures has offered IT courses as distance education at basic, advanced and further level. The courses can lead to the business school's approved examination.

The department for e-Learning at @ventures is responsible for pedagogical development, quality insurance and consult about e-learning for the @venture network. The department also offers pedagogical courses and consultancy to other education institutions, organisations and companies.

Århus Social and Health School (SOSU)

SOSU Århus is a vocational upper secondary educational institution which offers social and health education and also comprise the course leading to the qualification of educator assistant. The school has approx. 1200 students a year and 75 teachers. In addition SOSU Århus has a department for in-service training, which offers courses for retraining for home-helpers and nursing aide, courses for supervisor of teaching practice and adult education. The department for in-service training has focus on e-learning and how it can be used in short-cycle courses. In the autumn 2003 they expect to run pilot courses using e-learning. The course is extended from the traditional 1 or 2 weeks courses to a course lasting 2 month and the purpose is to create a room for learning, where practise is a part.

Copenhagen Course centre and Evening school (KKA)

In 1897, KKA was established and is today the biggest independent evening school with over 20.000 participants. KKA is a liberal adult education institution and has two departments, one concerning the evening school, which offers courses within 12 areas and one concerning the course centre that manage projects, courses for unemployed and in-service training. The in-service training is offered in cooperation with other educational institutions and can be based on distance and campus learning. Regular distance education is affiliated to the course centre and is offered to people as a part of their leisure time.

itai

itai was founded in 1989 as a self-governing institution in the south-western part of Jutland. The region is a remote area, and **itai** is a tool for the creation of equal admittance to education and counselling for companies and institutions in the region. The role of **itai** is to function as a regional R&D institution in the field of IT, and to serve as a link between the enterprises in the region and R&D institutions in the national resource centres. **itai** has expertise in the fields of human resource development, networking, flexible distance training and education, data-communication and operating systems, and via their electronic network they have connections to external expertise in other R&D institutions.

Discussion of the main features

As mentioned in the introduction this section will examine some main features of the Danish approach as it has been presented in the interviews.

Blended Learning

When asking Danish experts, the first common characteristics are the view on class and distance education. Independent of which educational level they represent most experts in this survey agree that the best results of ODL are achieved by combining classroom based teaching and distance education.

The representatives from the high school are the only ones not emphasising this method. They do however also make use of the method. Traditionally they use

classroom training and they are currently working to integrate IT in this, making it more flexible and open.

Generally, the tendency goes towards integrating e-learning methods in the ordinary class education. In a number of upper secondary schools with vocational orientation, the experience from different kinds of distance education is fully integrated. This has two major explanations. Firstly, an economical: integrating flexible elements have given the schools an economic benefit, and secondly, there has been a driving force from especially the young customers, who are used to applying the Internet as part of their learning process.

Three of the educational institutions participating in this survey pure distance learning courses: The IT academy in Vejle which forms part of Vejle Business College offers IT courses and the business college in Randers offers IT, language courses, Bachelor of commerce and EUD courses (a sort of certified vocational further adult education) in it and mathematics.

The IT – academy in Vejle has tried combining the distance learning with a class seminar, but very little people showed up. According to their experience it is difficult for them to have the students visit the school, since they are used to being alone with their course and need to feel a necessity for meeting.

The same experience can be found at the DEL, The Danish Institute for Educational Training of Vocational Teachers, which offered an education as adult teacher organised in a flexible, modularised way as blended learning. The students had benefit especially from the tutoring in the distance education, but only few participant show interests in the class seminars, which have been offered.

@ventures, which is described above, is a very good example of how the relationship between ordinary classes and distance learning can be arranged. They apply no strict regulations as to how the balance between the two educational methods should be. This is defined in the development process from course to course, when the targets and target group are defined.

One thing stands out of the interviews: the advantage of the blended learning/mixed mode is that it creates two different rooms or arenas for learning.

The classroom based learning is based on the dialogue, that decisions are taken here and now and that a forming and exchange of ideas take place. The gathering of students and teachers is therefore an important ingredient in the pedagogical concepts. UNI-C formulates this concept as: "the necessary closeness"

The face-to-face situation focuses on tutoring, discussions, technical and methodical presentations. Besides, emphasis can be put on group work where the participants decide what they want to work with and how.

On top of the scheduled seminars and classroom based training sessions, the participants sometimes have face-to-face group work. UNI-C has experienced that face-to-face meetings in the smallest units – the student groups or teams have been very valuable for the process.

The written form which on-line teaching represents is appropriate for reflection and thoughtfulness, since writing is also a reflection process. The Danish Pedagogical University (DPU) cooperates with five universities and offers a

Masters Degree as distance education. They think that the benefit of the written form in on-line education is that the tutor has to be more precise. The written media obligates the teacher as well as the student, since there is no time for small talk, as in the ordinary class education. In an LMS-system, the written communication will furthermore remain accessible.

As an explanation of, why, when speaking of ODL in Denmark "blended Learning or mixed mode" is central, the expert from the Danish Ministry of Education points to some of the core pedagogical competences and states that these are important to safeguard in the process of IT integration. He thinks that about 20% of all training/learning can only take place in a classroom – face-to-face. This is for instance the case with the subject: "negotiation" which is difficult to teach and learn through an LMS-system.

The ITU believes that the pedagogical concept, which is built on a collaborative "learning by doing" principle, supports a Danish pedagogy, in which the best from the traditional university teaching is combined with the possibilities of the internet. These possibilities can and must be further developed.

DEL-Syd estimates that the need for presence in connection with teaching is more a question of tradition than a pedagogical need. A combination of reflection together with practise or alternatively case studies, on-line tutoring and chat rooms often gives a more qualified learning process than the traditional forms of courses. This is especially the case when talking about development of vocational competences.

Action Learning

The second characteristic of Danish ODL is the subjects in ICT-based and ICT-supported education.

The interviewed experts all agree that ODL should be based on participant influence and participant control. This is expressed in various ways. With respect to the high schools, which represent an all-round education, Rosborg Gymnasium has run a course where the idea was to compare cultures: Students from Denmark and Portugal co-operated on a project about working conditions in the two countries by comparing working conditions at ECCO shoe factories in both countries. Another example was mentioned by Educational Resource Centre in the County of Vejle where the students have made their own study material on world history, where they defined what was important from each historical period followed by an exchange of information and viewpoints.

When talking about further education courses where the participants have certain experience, a main idea is that the teaching has to evolve around a problem, which is relevant to the learner, which has to be solved. The Business College in Randers and the IT academy in Vejle are the only educational institutions, which do not make use of this principle of learning.

An example of the problem oriented course is developed by itai: a course for engineers from different counties and employees at the Danish Ministry of Work involved in work place safety. These engineers worked and learned together transversely in order to solve concrete problems, suitable for both demands.

UNI-C who has developed the pedagogical IT drivers licence – a course where teachers will learn how to integrate IT in education – is of the opinion that in order to solve the problem by integrating IT they must put themselves in the students situation where experiencing, and learning through this, is more valuable than theoretical knowledge. When teaching the teachers, the principle of “practice what you preach” is applied in order to make the teaching come as close to the reality of the participants as possible. Working with interesting case description and not theories on IT integration does this. The education is based on what the participants want to learn which is also the basis of their evaluation. This is done by e.g. planning small bits of a distance education course on which they will be evaluated afterwards.

The company @ventures, who teaches e-learning, has the same attitude to the exemplary learning principle “what we say is what we do” and the common denominator of their three main courses is that they are based on problems and are organised in consideration of different learning methods.

Itai has their own explanation as to why the teaching should have its starting point in the concrete problems of the participants: The teaching need to be important to the employee in relation to his/her daily work and the management of the company also has to find it important by setting aside time, attention etc.

In DEL-Syd's e-learning, the practise is the starting point as far as possible – alternatively the participants work with relevant cases. Their portfolio and the written feedback in which the student is given point in proposition to the assignment, proves the learning to the participants

As the expert at Aalborg University points out, another advantage of this learning principle is that the lack of time often facing participants is met by using experience/problems from the practise of the education in order for the learning process to be used in the every day. The students obtain an analytic method to work with which is both flexible and structured.

Teaching and learning through project work based on concrete problems, also has a weakness; that after the learning process, the participants find it difficult to see what they have learned. EUC midt, which is a vocational training organisation, believes that the solution to the problem is an auto-evaluation of the participants so they can see where they lack information and at the same time they get to describe their own learning process.

Group/team work

The next characteristic is how the students work in ODL and this is where the respondents mention group or team work as a characteristic of Danish and Nordic pedagogy.

The IT University thinks that ODL the Danish Way requires debate and team work. The Danes are used to building up the necessary confidence between the participants in the physical space while they need experience in creating this confidence to our team members in the virtual environment. The idea is to work with this – learning from each other both internally as well as among the companies offering ODL.

In the examples of Best Practise which Copenhagen Course and Evening School, KKA describes, the special characteristic is that the participants have a significant

influence on the learning process. Most interviewees consider collaborative learning as a hallmark of Nordic pedagogy.

The idea behind the pedagogical IT drivers licence is that it is about changing the personal attitude towards both IT in general, and also change the way in which the IT integration takes place. UNI-C believes that focusing on the team can lead to a change of behaviour and a change in perception of certain things, because the team process puts emphasis on viewing, understanding and putting to best use the different competences of the team members.

In addition the county training centre in Århus says that when the target group for the pedagogical IT drivers licence is weak on general IT knowledge, the team work becomes even more important because it implements a certain element of practise into the teaching.

Kolding High School, which is one of the participants in the pedagogical IT drivers licence course, sees it as a good example of the Danish model. The strength is that it takes its point of departure in the learners it practise and includes the feed back from the colleges of the learner.

The special Danish trait in this is said to be that it is about considering what is needed at the specific point where you are at the moment, and in this thought process a dialogue is important.

On the technological side EUC midt, which does not implement team or group work, and the SOSU school, express that no tools have been developed which support the synchronous sequence.

It is true that synchronous tools are limited; however tools for pure asynchronous course do exist. It will be difficult to create on the Internet what goes on in the classroom. For EUC midt, the solution is not self-development on the individual educational institutions: the tools will then be too dependent on individual persons, which will prevent further development.

The tutor/teacher in ODL – an obstacle of the mind

The first specific problem in the implementation of ODL is defining the role of the teacher/tutor. This stands out in the interviews across all school forms.

As the IT University states, the teachers do not have 10-20 years of experience in net-based teaching, which means that they are not completely experienced in using the electronic media and handling their new role as a teacher.

Itai is of the opinion that the role of the teacher in distance education has changed. The teachers in the classroom are characterised as "entertainers" where teachers of distance education could learn of the qualifications of the IT supporters by setting themselves in the place of the learner. The teachers in ODL need to have empathy.

Tønder High School, which integrates IT in the education, also sees a barrier in the new role of the teachers. With the new education method, the teachers are not so much "on stage" and some teachers find it difficult to hand over the responsibility for the learning to the students.

The same seems to be the problem at Rosborg High School and they believe that the problem as well as the solution must be found in the further education of the teachers enabling them to handle their role in the new teaching methods. Even though the Danish high school teachers goes through further education during these years by taking the special pedagogical IT drivers licence for high schools, Rosborg High School is of the opinion that this education more points at integrating IT in one single subject. They need a more goal-orientated further education courses, which enable the teachers to reach the goal of the virtual high school.

UNI-C, which develops the pedagogical IT drivers licence, focuses very specifically on the role of the moderator. The tutors are trained in giving and receiving response. It is a different role, which needs to be learned in order for the tutors to know how to act in distance education.

The high schools are not alone in facing problems related to the role of the tutor/teacher. The Ministry of Education is of the opinion that Denmark has less qualified tutors/ teachers when it comes to ODL. There are certain disagreements and doubts about the content of the tutor education and therefore Denmark has less than 22 different tutor education courses. The result is that the teachers are not fully equipped to fulfilling the role. Inspiration from the Canadians is a solution that offers a better kind of tutorials, which is value free, helps the recognition and stimulates the students externally or internally.

According to itai, another part of the solution could be found if the management worked more thoroughly with the attitudes of the employees –and also if there was a research focus on what kind of profiles that would be appropriate in distance education. The research should learn from practise.

According to DEL-Syd and their experience from own courses and various projects, the decisive point is not the new teachers role, but the many different roles of the teacher. We have been used to teachers who could and should deal with everything – now it is necessary that the specific individual qualifications are consolidated. An example is that E-learning requires tutors with a certain virtual empathy; that is that they know what it means to be a teacher and a learner at a distance. But e-learning also requires developers of teaching material who have the right understanding and competence to do so. Obviously not all people have all these qualifications and thus new collaboration- and organisation forms are required where the future will be constructed on special competence units built upon the particular differences of the players.

The teachers have problems facing these new roles. In EUC midt, which has a department for further education courses and one for upper secondary vocational training, there is not much ODL in the latter department. According to the school, the reason is that the teachers are not ready yet. Before, there was one idea or concept of a class – today focus is on the open classroom and that requires a new kind of pedagogy with less control over each student. This new openness is not only valid in the classroom but also amongst the teachers. However, the openness has the disadvantage in proportion to a certain group of teachers, since it is required that the teacher's assignments to the students are available for other teachers. The written work can also be an obstacle for some.

If the new pedagogy about the open classroom should be successful the teachers have to be positive about it. EUC midt has worked two years to implement this principle and getting the teachers to apply the system of the open classrooms. It is a difficult process and one of the questions is rooted in the payment system, and the time registration systems.

The Learners

Another problem facing the schools implementing ODL are the expectations, which the students/participants/learner might have. Generally, there are three problems:

According to the IT University, the first problem is that the students are not used to the net-based form of teaching, which means that they do not make the most of the electronic facilities. Kolding High School also states that it is a myth when the teachers believe that the students know all the manoeuvres when searching on the Internet; among other things, there are not specific enough in their search words and not critical enough of the sources.

Secondly, people like being together in a learning situation which means that ODL is up against conversation and dialogue, says the person interviewed from Aalborg University.

According to UNI-C this has to be seen in the light of the Danish tradition on learning and education. "We need to remember Grundtvig" – thereby, saying that we develop ourselves in the dialogue with others. Therefore, there is already the expectation that distance education is not as good as the traditional class room lessons, states the respondent from Aalborg University.

Amongst the interviewed there is a general agreement that ODL has an image problem with the participants. The Business College in Randers thinks that many students are still frightened by the distance learning of the nineties, which was characterised by bad connections and no pedagogical considerations. EUC midt believes that another reason should be found in the fact that many participants choose class room education because they are familiar with the concept and that the distance education is surrounded by the prejudice of its inferior quality.

However, EUC midt also mentions a completely different reason and that is that many participants prefer to visit the school in order for them to keep work and studies apart. The companies are not too positive of the flexibility of the distance learning either. With class seminar programmes they are able to plan their day better which means that both participants and companies withhold the traditions.

However, the generations' now entering high school, and other upper secondary educations and the professionals who are used to working with the Internet are not biased towards the traditional form of teaching. But they do have high expectations as to the professionalism and qualifications of the institutions and companies offering ODL, states DEL-Syd.

Drop-out rates

The third specific problem in implementing ODL is the dropout rates, which in several occasions has been higher on distance learning courses than on traditional programmes.

At the business college in Randers an average of 10 out of 30 accomplish a distance learning course and the drop-out of students and lack of activity are general problems. The picture is not quite the same when looking at company courses – this could be due to the fact that during the nineties companies gave their employees a computer in return for accomplishing the PC drivers licence within a certain date. Therefore, the courses experienced high activity just before the tests. On the IT academy in Vejle, they have good accomplishments on the short courses, whereas on the longer courses it seems harder to get people to carry through the whole course, e.g. the education as graduate in computer science. In comparison, there is a 50% accomplishment on the traditional class courses.

@ventures thinks that the reason is that the learning effect is too small. There is no pedagogical dimension and the result is dropouts, no activity and no competence development.

According to the business college in Randers, the reason for the dropout rate is caused by the optimism of the participants at the time of the registration and the fact that the courses mostly are attended in ones leisure time. The lack of interactivity among the students does not create any kind of engagement and the result is that the duties of your everyday clutter up why people choose not to attend the course.

Thus, the explanation of the dropout rates has to be found in the lack of collaborative activity within the school. The business college has an LMS-system, Blackboard, but the possibilities for chatting are not used by the students.

According to DEL-Syd, the dropout rate probably has to be seen in proportion to the presence. In ordinary classroom teaching, many feel that they gain something by going to school. It is a ritually designed education with which everyone has experience (good or bad). In ODL, it becomes clear from the very beginning that if you do not participate actively, your output is nil. This way there is a high rate of dropout in distance education and a high percentage of psychical absence in the classroom – popularly speaking. It is of course also logical that ODL sets certain pedagogical requirements, which have to be honoured if participation should result in learning.

As a final observation, the problems with high drop-out rates on the IT academy in Vejle and the business college in Randers has to be seen in the light of other factors, namely that these schools have continuous registration, asynchronous courses, primarily IT courses and no problem orientated education.

The lack of support from the management

The fourth specific problem in the implementation of ODL is the lack of support from the management, independent of whether it is the management of an educational institution, a company, a county or the state.

According to the IT University, it is first and foremost because the educational institutions do not have many years of experience in offering and carrying out ODL. This means that they lack special experience in admitting and handling the new fields of responsibility connected to the ODL.

Some institutions are confronted with the prejudice that the ODL is a cheap and efficient way to educate/ further educates. **Itai** points out that "Things take time", which is important to be aware of for all the parties involved. In **Itai's** company courses the management does not give their employees fair terms – that means the employees need more time to accomplish the course. It is all about a process of change in order for the management to give more time and attention instead of resources. In ODL other working methods need to be introduced and the traditional wage learners mentality does not fit this way of thinking.

For the high schools it is also a matter of financial resources. The county of Sønderjylland, where Tønder high school is located, believes that they can save money with the virtual high school and they have raised the class rate to 31 in every class and put two teachers on every class.

This view is also supported by @ventures who often sees that management does not show the needed support – also in terms of resources. ODL needs money for the development. It is DEL-Syd's experience that a lot of ODL has been developed in special "development pockets" within the institutions, companies and also on national level. If this has to be developed into something further, strategic decisions and plans are required, resources need to be allocated and dominant opinions have to be settled on what and how the learning should be organised.

In connection to the lack of support from the authorities, ministries and politicians, the KKA, an institution involved in liberal adult education, faces the problem that within their sector ODL is not allowed.

The reason for this, according to KKA is a lack of understanding in the potential of ODL – both professionally, but also socially this prevents ODL from being spread out to the groups in the population, which really need it.

This is caused by the ignorance of the new possibilities, but also because we in Denmark has been spoiled, being used to the ample availability of teaching, free of charge and right next to our home.

The solutions will emerge naturally, as the KKA expects their participants to demand ODL in the future as a supplement to the traditional educational offers. The important question will then be whether or not there will be sufficient developing/development resources to secure that the supply of ODL, in terms of extent and quality, will correspond to the demand which will arise. This could be secured by establishing a test and development pool like they have in Sweden.

Learning materials

The fifth specific problem in implementing ODL is the lack of materials.

According to itai, Denmark has problems with the learning materials, since it is such a small language area, which means that the well written material is limited

and very expensive. The traditional text books presume that the teachers introduce the material to the students. This introduction is needed in the e-learning material.

Solution: Courses for developers of e-learning material. They should learn to divide the course in leaning objects, and the introduction to the material should be an integrated part.

At Kolding High School it is a problem that the teachers spend a lot of time producing material in the beginning. The solution will come in time as more and more material will be enclosed in the digital library of the high school.

The problem regarding material is also an organizational problem if you ask DEL-Syd. The tradition tells us that the material belonged to the teacher, as it was developed in his/hers preparatory lessons. However, new agreements in the schools mean that resources will be removed from preparation to development lessons where after the material belongs to the institution. This will probably help speed up the development. With inspiration in the Anglican model tests have been made to make pools in which the schools should enter their material into on joined pools for general use. However, these experiences are not too positive due to various obstacles: The question on copyright, certain decency towards showing your material to others, too much homogeneous material (typically introducing IT) etc.

The Ministry of Education is of the opinion that there should be a national exchange of material and not just at local level. At present a national platform is needed, possibly in the shape of www.emu.dk where already produced resources are available for the teachers. The problem in this will be what to do when the design is out of date, or if the material is still updated. This could be solved by establishing some operational and replacement standards which make it possible to keep and recycle the material. In connection with an electronic teaching resource the optimum solution would be to connect the teachers' own experience, like diaries of the course, to the professional target and the personal development.

Quality assurance in Denmark

There is no clear quality assurance policy in the examples included in this report.

On the EDB School there is no systematic QA system in place, it is put in the hands of the individual teachers. Earlier, one course was ISO9003 certified but they stopped because they had very few complaints from the participants. KKA does not have a general QA model, but they work with the quality in the development of courses offering support and further training to the developers of the courses.

At Aalborg University – Open University there is not a QA system in place, but they have developed their own quality criteria. These criteria are under a continuous revision and development taking into account the students and the needs of the society in which the candidates have to work after their graduation. Furthermore, they arrange a number of seminars on quality and the development of quality for the teachers. AAU sees it as a question of developing

a culture where the teachers are willing to learn more, develop their own skills etc., not as a management tool, but with the understanding that this requires a personal development. DPU also has personal development as a central aspect in their quality assurance work – using an on-line evaluation form and an oral evaluation while the course is still running. Finally, there is a final evaluation summing up the course.

There are also organisations in the survey, which have much more formalised QA methods implemented. AT the ITU there is a course evaluation system, where all the courses are evaluated in writing after every semester. In the net based training, the content as well as the didactics, the teachers, and the ITU itself is evaluated. Furthermore the ITU conducts special surveys of the net based courses every other semester to test the effect and the satisfaction with the concept.

@ventures works with a quality assurance system that includes three areas: materials, learning strategies and learning environments and focuses on what is going wrong and what to do about it. The Business College in Randers has a traditional system consisting of a evaluation form to be filled in. Due to the government regulations for the vocational training the evaluation of these courses is given. The basis is a public quality model where the objectives have to be defined and the improvements made on that basis.

At EUC Midt they do a continuing quality assurance based on an evaluation form that the participants are using to evaluate content of the courses and the virtual learning environment. This data forms the basis for improvements and changes. The teachers evaluate the courses based on discussions in the conference and the assignments handed back by the participants. They are also doing some testing of a Q-system of measuring effects before and after a course.

Tønder Gymnasium also works to get a more systematic QA system in place, and furthermore they are subject to a yearly evaluation, which is a prerequisite for their participation in the Virtual Gymnasium project.

The two institutions in this survey that runs the Pedagogical IT drivers licence have a very systemised approach to their QA. The Educational Resource Centre, who among others train teachers from upper secondary level have an internal evaluation, consisting of a form filled out by the students. This form shows whether the students have been able to use the things they have been taught in practice, how relevant the used material seems to be and the role of the tutor. External evaluators are used when it is relevant, for instance to look at whether the students use their new knowledge after 1 year.

UNI-C, who are the developers of the Pedagogical IT drivers license evaluate the participants based on questions about the material, the guidance and the structure etc. The tutors for this course are certified and need to have an update every year to keep their certification. The certification is done in collaboration with organisations who offer the Drivers Licence like DEL-Syd, Jysk Pædagog Seminarium, CVU etc.

Conclusion

As pointed out above there are several initiatives working at the ODL scene in Denmark. The Ministry of Education and the Ministry of Research administer the laws regulating the area. The subsidies from the state given to all education courses are not construed to support initiatives in ODL or to support ways of integrating IT in the teaching.

In Denmark everybody can offer courses, private companies, enterprises or educational institutions.

In the upper secondary and the primary and secondary education ODL is nearly non-existent. In high schools it is simply not permitted to allow the pupils to work without a formal time schedule or plan. The high schools work to integrate IT in the teaching. At the primary and secondary sector there is some ODL, mainly on the *County Education Centres (VUC) where adults can follow courses leading them to the 9th or 10th grade. The VUC system works with flexible models where distance teaching and classroom based teaching co-exists. In the primary sector, targeted at children and young people there is nearly no distance training.

The ODL at the University level falls under the Law on Open Education. In the spring of 2003 the Danish Parliament passed a new university law in which universities are obliged to offer ODL courses on the following levels:

- bachelor degrees for full-time students
- master degrees for full-time students
- Ph.D. degrees
- part-time educational programmes for adults at work.

For the first time the obligation of the universities to play a significant role in life-long learning is stated by law! The universities' in-service training and further education called UNEV was official opened 3 November 2003. UNEV is the Danish universities' common Internet portal about knowledge and development of competences.

In spite of the fact that Grundtvig invented the liberal adult education and that one of his main thoughts was to make education available to all groups of society, it is still illegal to have ODL under the Danish Law on Liberal Adult Education. The liberal Adult education offer education to the target group that no other educational institutions target. Individuals who have an education of some kind, and who do not need to get further vocational training at a business college or a technical college, they have the liberal adult education as their last resort. And for their training there is no subsidy for ODL, and consequently the incitement to develop materials and courses has been very small and only very few ODL courses exists.

When it comes to further adult education, the picture is different. Experimental, developmental projects have been launched supported by the Ministry of Education and CTU, Denmark's national information centre for technology supported learning. The biggest leap forward happened because of some extraordinary subsidies on distance education on the IT area. These subsidies

were so attractive that all vocational education institutions started offering ODL regardless of their need for it, their experience with it or whether it suited their target group or not. Over a period of two years a huge number of distance education courses were run with the IT drivers licence as the main subject.

In this golden age of Danish ODL a number of consortia were established. Despite the fact that the very favourable subsidies were reduced to a smaller amount some of the consortia still operate in a market that is increasingly competitive. The ODL existing still primarily in the IT sector, but more subjects are taken up gradually.

The target groups are very wide ranging from those with no educational background or very little to people with university degrees etc.

There is a gap between how the ODL situation is seen and how it really is in Denmark. One example of this is that on the further education area most courses are clean cut distance education with no face-to-face. At the same time most of the experts point to the mixed mode as where the best practise is to be found.

In Denmark, there is no doubt that there is something along the lines of Danish or Nordic pedagogy. Several of the interviewees mention Grundtvig and the importance of knowing how our core competences are linked to the Grundtvig tradition. However, the tradition is not linked to the practise as seen in some operational practice forms. The picture of "The Danish Model" is somewhat "muddy". The experts disagree on whether good practise should be measured on a pedagogical basis or whether it is question of low drop out rates. Ironically, there is no comparison. The IT drivers licence mentioned by many of the interviewees is at the same time described as having no, or very few pedagogical ideas behind.

The picture shows that we in Denmark has not had any overarching or collecting laws or regulation giving input to the discussion of what good Danish online teaching is.

The work on Quality Assurance also lacks behind although many initiatives are taken. It is however very much to the fore in the minds of the people involved in ODL.

Several of the interviewees give their point of view as to what a Danish or Nordic pedagogy on ODL implies: Here again is Grundtvig and his principle of the "living word" dominant, because the dialogue and the conversation are seen as the corner stones in a Danish/ Nordic approach underlining that we develop and learn in a dialogue with others. Furthermore, the good ODL course in a Danish context must allow the participants some kind of power over the course, and when it is adult further education, it seems important that the practise and problems of the participants are integrated in the course.

Finally it is a paradox that the Danish/Nordic pedagogy and its characteristics are named with non-Nordic words like for instance "learning by doing", "practice what you preach", "Mixed Mode", "Blended Learning", "teamwork" etc.

Appendix A

Name	Institution	Education sector
Steen Grønbæk	EUCmidt	Technical and vocational training institution
Bruno Lindskjold	The EDB School	Business College
Torben Iversen	Fredericia-Middelfart Technical School	Technical and vocational training institution
Kim Tange	Randers Business College	Business College
Ulla Gjølring	UNI-C	IT company under Ministry of Education
Poul Tang	The Educational Resource Centre in the County of Aarhus	County institution
Birgitte Holm Sørensen	The Danish Pedagogical University, DPU	University, part of IT-vest
Jørgen Bang	IMV, Department of Information and Media Study, University of Aarhus	University, part of IT-vest
Annette Lorentsen	IT-vest	Education and research cooperation
Jane Andersen	IT University of Copenhagen (ITU)	University
Mads Peter Villadsen	Rosborg Amtsgymnasium & HF	High school
Hans Kurt Gade	Kolding Amtsgymnasium	High school
Jan Gejel	Århus Social and Health School (SOSU)	Vocational upper secondary educational
Michael Lund-Larsen	Aventures	Network of business colleges
Martin Geysner	The Ministry of Education	Ministry
Peter Holsøe	The Ministry of Science, Technology and Innovation	Ministry
Jørgen Grubbe	Copenhagen Course centre and Evening school (KKA)	Evening school
Folmer Kjær	Itai	Self-governing institution

Slettet: ¶

Appendix B

List of experts indicated by respondents:

Name	Institution	Expertise	Number of references
Jens Peder Weibrecht	Nørre Sundby Gymnasium	Blended learning, French	1
Gitte Normand	Århus Akademi (high school)	Blended learning, English	1
Bjarne Frederiksen	Risskov Gymnasium	Blended learning, social studies	1
Clara Eirenvich	Kolding Gymnasium	Blended learning, English and German	1
Vibeke Gade	Kolding Gymnasium	Blended learning, French and Spanish	1
Claus Gregersen	Herning Gymnasium	Evaluation of the virtual gymnasium	1
Erik Prinds	Viborg Gymnasium	Evaluation of the virtual gymnasium	1
Elsebeth Lauridsen	VUC Rødovre	Course design and delivery	1
Peder Pedersen	Næstved Business College	Course design and delivery	1
Palle Damkjær	Hjørring Handelsskole		
Jens Frørup Madsen	Tønder Gymnasium	Course material, Danish	1
Kjeld Steen Hansen	Tønder Gymnasium	Course material, Danish	1
Morten Brudesholm	Tønder Gymnasium	Course material, physics	1
Bo Trie	Tønder Gymnasium	Course material, physics	1
Ole Kamp Hansen	Tønder Gymnasium	Course material, physics	1
Frederik Holm	Tønder Gymnasium	Course material, film/TV	1
Lars Blume Hansen	Tønder Gymnasium	Course material, history	1
Anders Østergaard	Langkær Gymnasium		1
Ole Lauritsen	Business College	Evaluation	1
Lone Ambjørn	Business College	Evaluation	1
Karen Harboe	Business College	Evaluation	1
Lise Steinmüller	@ventures	Practical pedagogical experience	2

Kaj Engen Nielsen	VUC, Southern Jutland		2
Hans Jørgen Hansen	VUC, Southern Jutland		1
Trine Ronsholt	VUC, Southern Jutland (former employed)		1
Jørgen Morgen	Vejle Social and Health School (SOSU)	In-service training	1
Torben Iversen	Fredericia-Middelfart Technical School	Operation experience	1
Hans Jørgen Knudsen	DEL		1
Hans Henrik Helms	DEL	Theoretical experience	4
Trine Ronsholt	DEL		1
Susanne Tellerup	DEL		1
Ambrosius Hansen	DEL (former employed)		1
Inge Bjørnshave	Holbæk Seminarium		1
Henning Bentzen	CVU, Copenhagen		1
Lone Dicken Holmfelt	Aalborg University	Discussions and video. experiment with new courses	5
Annette Lorentsen	Aalborg University	Theoretical	4
Elsebeth Sorensen	Aalborg University	Practical, online tutoring	7
Ole Borch	Aalborg University		1
Jørgen Bang	Århus University	Non- linear story	2
Bo Fibiger	Århus University	Non- linear story	2
Niels Jørgen Blåberg	Aalborg University Library		1
David Pisinger	Copenhagen University		1
Peter Morgan	Southern Denmark University		1
Anne Rasmussen	Southern Denmark University		1
Robin Cheesman	Roskilde University Centre		3
Simon Heilesen	Roskilde University Centre		3

Hanne Løngren	Roskilde University Centre		1
Sisse Siggard	Roskilde University Centre		1
Jane Andersen	IT University of Copenhagen		2
Lars Birch Andressen	The Danish Pedagogical University, DPU	Virtual learning and collaboration	1
Helle Matiasen	The Danish Pedagogical University, DPU	Evaluation of the virtual gymnasium	1
Bent B. Andresen	The Danish Pedagogical University, DPU	Evaluation, designing courses	2
Birgitte Holm Sørensen	The Danish Pedagogical University, DPU		2
Carsten Jessen	The Danish Pedagogical University, DPU		3
Søren Langager	The Danish Pedagogical University, DPU		1
Bente Elkær	The Danish Pedagogical University, DPU		1
Jørgen Grubbe	Copenhagen Coursecenter and Evening School & FLUID		2
Merete Bonke	Copenhagen Coursecenter and Evening school		1
Søren Nipper	Uni-C, Århus	International experience	3
Øjvind Brøgger	Uni-C, Århus	Development of products, designing systems	1
Leo Højsholt-Poulsen	Uni-C, Århus	Development of products	1
Kurt Nicolaisen	Uni-C, Århus (former employed)	Quality insurance, development of products	1
Susanne Panduro	Uni-C & ITMF		1
Lise Dalgaard	Uni-C & ITMF		1

Birgitte Heiberg	Learning Lab Denmark		1
Hans Siggaard	Learning Lab Denmark		1
Ib Ravn	Learning Lab Denmark		1
Nina Tange	Learning Lab Denmark		1
Steffen Jensen	The Ministry of Education		1
Lilla Voss	The Ministry of Education		1
Tove Deneyer	The Ministry of Education		1
Lars Frelle Petersen	The Ministry of Science, Technology and Innovation, Digital Task Force		1
Henrik Hjortsdahl	Governmental centre of Competencies and Quality (SCKK)		1
Svend Erik Røpke Johansen	Governmental centre of Competencies and Quality (SCKK)		1
Hanne Shapiro	Technological Institut		1
Bjørn Ilsøe	Frederiksborg County		2
Ulla Dan-Jensen	Personnel Agency (Personalestyrelsen)		1
Thomas Rudolf	Trade council (Håndværksrådet)		1
Leif Limkilde	HK (trade union)		1
Annelise Christensen	ARGO		1
Allan Christensen	PLS Rambøll		2
Per Damgaard	PLS Rambøll		1
Jens Jørgen Jørgensen	Itai		1
Lotte Egelund	DSB (the Danish railway) in-service training department	Practical experience	2
Poul Erik Schulz	Crossware	Production	1
Astrid Berg	ABC-dialog and FLUID		1
Jesper Hundebøl	Linqx		1
Peter Bollerslev	Gyldendal & IFIP		1
Mai Buch	CompetenceHouse		1
Jan Kehn	Municipality national		1

	association (KL)		
Søren Sander	IMS Learning A/S		1
Hans Lissau	IMS Learning A/S		1
Gert Bechlund	HHK		1
Leo Feldborg	Viviance & Dansk Standard		1
Soini Kari	Niels Brock Business School & Dansk Standard & Dansk IT & IFIP		1
Allan Jensen	Fischer & Lorentsen & Dansk IT		
Vibeke Pakkenberg	Danfoss Drives		1
Rasmus Hansen	e-learning community		1
Henrik Ottesen	Great Dane Production		1
Ralf W. Ackermann	Novo Nordisk, Informatics and Education		1
Anders Buch	IDA		1
Tom Togsverd	ITEK		1
Lars Quortrup	Knowledge Lab, SDU		1
Kim Østrup	IBM Denmark		1
Ole Haaber	IBM Denmark		1
Jesper Lose	Danish Pro		1
-	The Danish Pedagogical University, DPU	Development of products	2
	Aarhus School of Business	Course material on CD-rom	1
-	Moch	Production	1
-	Aalborg University	Syncrone courses	2
-	Esbjerg Business College	Operation experience	1
-	The Educational Resource Centres in the County		1
-	FLUID		2