

NKI Distance Education

Facts about the institution

Name of institution	NKI Distance Education (a part of NKI AS)
URL of insitution	www.nki.no
Country	Norway
Number of employees	65 full-time, 400 part-time
Levels in the educational systems	Tertiary, secondary and vocational training
Interviewer	Per Arneberg
Interviewed persons	Professor Morten Flate Paulsen, Director of Development of Online Learning Professor Torstein Rekkedal, Director R&D

The NKI group is a nongovernmental education institution located in Norway and comprises NKI Distance Education (NKI DE), the Norwegian School of Information Technology (NITH) and the NKI Publishing House. The NKI group as a whole operates on a non-profit basis. Financial surplus is kept within the organisation for future development. NKI DE is recognised by the Ministry of Education and receives government grants covering less than 10% of operating costs. Consequently, NKI DE is largely dependent on student fees for its operations.

This interview focuses on NKI Distance Education (NKI DE). NKI DE provides courses and study programmes at higher education level, upper secondary level and within the vocational training field. In 2005, 470 courses were offered and the number of course enrolments was 12 217. Generally, NKI DE does not employ full-time academic staff for tutoring. Rather, courses are based on part-time employment of academics from other education institutions, research institutions, public administration, business and industry. Therefore, the number of part-time employees (400) is rather high compared with the number of full-time employees (65). Full-time employees are for the most part administrative personnel and academic staff involved in development and research on various aspects of distance education. Thus, at NKI DE competence in the subjects being taught are bought from academics based at other institutions, whereas competence developed in-house is focused on the development, marketing, operation, research and quality assurance of distance education, i.e. how to be an efficient provider of high quality distance education. The research and development focus on distance education at NKI DE is broad and includes pedagogical, administrative and technical issues.

Contextual factors

Market size

NKI DE focuses on Norway as the market for online education. The total population of Norway is 4.6 million with a common language – Norwegian.

Market readiness to use online technology

Norway is together with the other Scandinavian countries in the forefront concerning use of technology in the schools, working life and in the homes. Broadband availability is well distributed and the technological infrastructure well developed.

According to statistics, already in 2001 80 percent of all organisations with more than 10 employees had access to Internet.

In 2000 25 percent of the population over 15 years would have use home PC on an average random day. About the same percentage would have used the Internet on an average day. In 2005 75 percent of homes had PC, 60 percent access to the Internet from home, 40 percent of homes had broadband access and the PC was used daily by 58 percent of the population. In the main target groups for distance education (Age 20-44) over 50 percent had broadband at home.

Target group acceptance of e-learning

It is assumed that the Norwegian population to a large degree accepts online learning as an acceptable and efficient means for competence development. Distance education has generally had good reputation in Norway and has been largely formally supported by the government. Norway was the first country in the world to regulate distance by law from 1949. The law opened for control and accreditation of distance education and distance education courses. This has resulted in the development of high quality distance education. Since 1990 the government has also through the governmental body “Norwegian Opening Universities” emphasised the development of online and flexible learning at higher education institutions and also emphasised online distance learning as a suitable form of learning for adults. All in all it is good reason to believe that online learning is well accepted in Norway relative to most other European countries.

Digital literacy in population

It is assumed that digital literacy in the Norwegian population is relatively high. The use of ICT is emphasised in the schools, and the majority of the adult population uses PCs and the Internet on a daily basis.

National policy

The Norwegian government has stimulated the development and support of quality distance and online learning all the way since the reconstruction period after the war in 1945 by specific laws and specific funding for distance education. Development of distance education programmes has been stimulated both by policy and financial support to institutions and students. distance and online students receive loans and grants for their studies with the same rights as ordinary full-time students.

History

1. How would you describe the history of distance education in your institution?

NKI was established in Norway in 1959. It was originally a Norwegian branch of a leading Swedish correspondence school. Very different from the development in most other institutions the other units of the NKI group were established as offspring from distance education. E.g. the origin of the present School of Information Technology was the NKI College of Engineering that based its teaching and pedagogy on distance education philosophy and distance learning materials. To begin with, and before any online technology was available, distance education at NKI was delivered through traditional correspondence courses. Correspondence courses are important still today, but a gradual development that started around 1985 has made online delivery increasingly more important. During the last years the numbers of correspondence students have declined steadily while the numbers of online students have increased (with total number of students being fairly constant, figure 1). In 2006 online students for the first time outnumbered correspondence students. In the future,

NKI expects that market expectations will lead to a full stop of NKI DE providing correspondence courses and base all courses and programmes on online teaching.

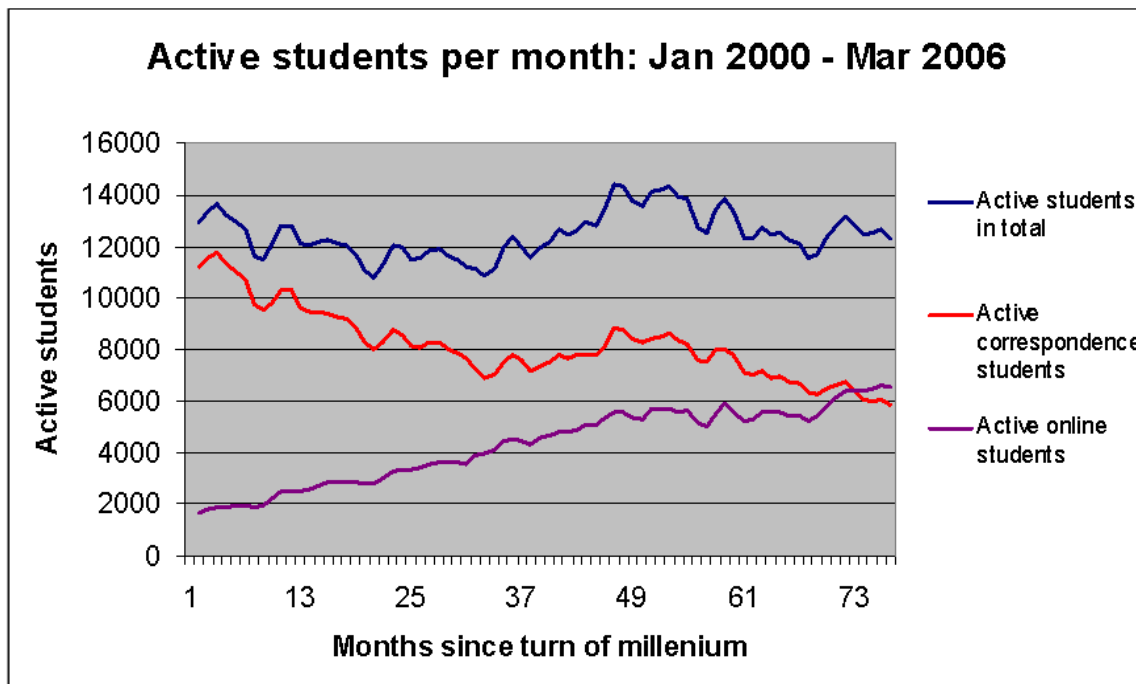


Figure 1. Monthly variation in active NKI students

2. How has competence in distance education developed in your institution, and how would you describe this competence today?

As distance education was the basis for NKI when it was established in Norway and always has been an important part of the organisation as a whole management has had focus on competence development in the field. E.g. NKI employees, specifically on management level have been active engaged in national and international organisations in the field. As examples concerning competence development NKI took early initiatives concerning research and development work in the field. The research focused on practice related areas, such as student support, follow up, personal tutoring and organisational issues. It was emphasised that expert staff on all levels should be involved in research projects. Further, NKI introduced already in 1978 the obligatory “Course for tutors” to spread distance education educational competence throughout the organisation. This course is after many updates and revisions offered online today to secure that all NKI online tutors both have practical experience as online learners and theoretical background for their work. It was also a major step forward in competence development when the management around 1995 understood that competence and understanding of online teaching and learning was not something that could be left to a few selected people in the development department, but that it was necessary that all staff of NKI DE (course developers, sales and marketing personnel, tutor and student service personnel and office staff) had a basic understanding of what a gradual change from correspondence to online education meant for their work.

3. Has this development been abrupt or would you describe it more as a gradual step-by-step process?

Both competence development and the development of distance education and specifically online education has clearly been a step-by-step process. In the beginning both competence and systems development involved only some few dedicated persons, mainly employees

involved in research and development. In fact, seen historically we see the gradual and continuous development as one important factor for what we today see as successful development and transition of NKI DE from a correspondence based to an online learning based distance education institution.

The technical system for administration and delivery of online education at NKI DE has to a large extent been developed by NKI DE itself. This has been possible because of a close cooperation with NITH. As described above, NITH is another branch of the NKI group. The institution offers courses and degrees within information technology, and unlike at NKI DE, academic staff is employed in full time positions. Thus, high competence in information technology is available in-house.

This also allowed NKI DE to start with online education early, already around 1985, when Internet connection through simple modems became available. In addition, having its own systems has made it possible to let the systems undergo a gradual evolution, because improvements have been based on changing existing systems rather than introducing entirely new ones. This is different from a situation one might have had if systems were bought from commercial developers, in which case one might have to replace systems if the manufacturer could not provide a desired improvement.

4. How has online education been followed up by evaluation and research through the years and what is the situation today?

One factor that has characterised the development of distance education at NKI DE, is that courses, tutoring and other teaching support activities have been subject to thorough evaluation since the start in 1959. This has, of course, been done to improve course delivery, administrative routines and so on. More thorough research has also been carried out since the NKI DE Research and Development Department as established in the early 70'ies. During the last two decades the research has mainly focussed on online education. The research has partly been financed and carried out by NKI DE alone. However, NKI has also been involved in projects financed by Norwegian state grants and by the European Commission. In our view, there is no doubt that participation in externally funded projects has been an important factor for success. Research directly related to the development challenges appears to have been important for the build up of high competence in how to organise and deliver online education.

Technical issues

5. How would you describe competence in information and communication technology in your institution?

There is no doubt that the fact that the institution had internal competence in information and communication technology has been a major reason for the solutions and strategies for the development of systems for online education. In fact, the idea of developing distance education solutions based on computer conferencing came from the staff of the NITH. The initial developments were a result of the driving force coming from key academics of the NITH, that the first conferencing system was developed mainly as a result of academic motivation, and that the decision makers within NKI DE believed in the idea and that a close cooperation between the two NKI departments was established for using the conferencing system for distributing the first online courses. However, there is little doubt that it was necessary for future success that the necessary competence in information and communication technology for development of systems for online education was built up within NKI DE and integrated with the internal distance education competence. Today NKI DE has within its

research and development department a systems development group with competence for internal continuous development of the learning management system, SESAM (Scalable Educational System for Administration and Maintenance), according to specified pedagogical and organisational needs.

6. To which extent are distance education courses in your institution based on widely used technologies that can be taken into use by students without requiring them to buy additional hardware or software? (in addition to what they have from before)

Courses are generally based on widely used technology that can be taken into use by students without requiring them to buy additional hardware or software. In principle, NKI DE has a potential for using fairly advanced technology, but has chosen not to do so because one wants their courses to be broadly available. For example, materials based on complicated multimedia may exclude students with old computers unable to run them.

7. How would you describe the integration between different IT-systems that are involved in distance education in your institution?

The high competence in information technology at NKI DE is used to develop and integrate different systems. NKI has a number of self-developed and commercial applications that together make up a system for student support services and administration (figure 2).

A central component is “student administrative system”, STAS. This has been developed at NKI DE over many years to satisfy a number of needs, including registration of assignments, monitoring student progression, distributing new learning materials and paying tutors. STAS is NKI DE’s master system and it is integrated with all other essential systems such as accounting, logistic, prospective and partner systems.

STAS was initially developed for correspondence courses and bar code registration of assignments. Initially it was not suited to serving online students, as there were no connections between the Internet systems and the administrative systems. It was necessary to develop STAS further to handle online students efficiently. The integrated development of STAS and the LMS system for online learning, SESAM (also self-developed), is taking place continuously. Both systems are designed to handle continuous student enrolment and individual progression schedules.

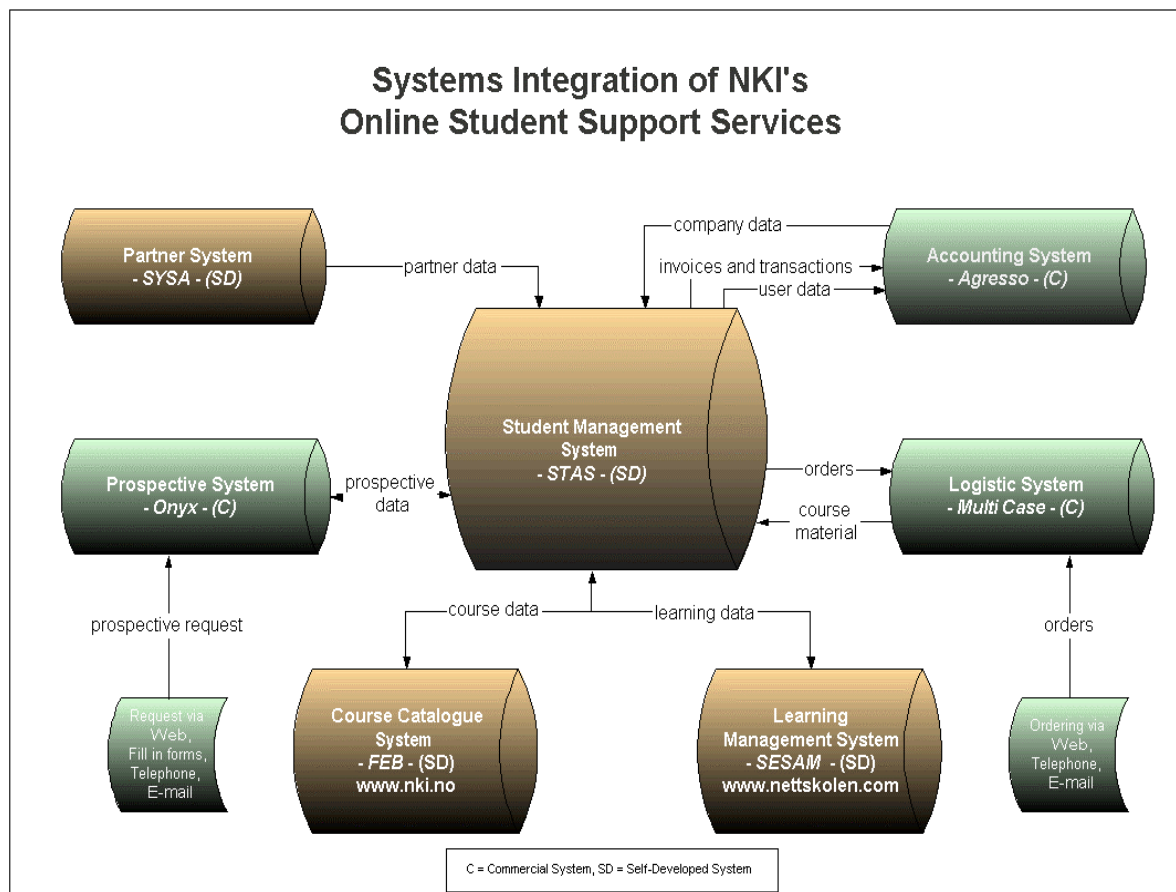


Figure 2. NKI's integrated systems for online student support

Agresso (www.agresso.com) is a commercial accounting system that handles tuition fees, invoices, wages, etc. SYSA is a system for presentation of information about local partners that organize face-to-face classes as support for NKI DE's courses. Onyx and Multi-Case are commercial purchased systems. Onyx handles marketing activities and requests from prospective students, while Multi-Case is a commercial logistics system for administration and shipments of textbooks and miscellaneous physical learning materials. When course enrolments are registered in STAS, Multi-Case automatically initiates shipment of the corresponding physical course materials. FEB is a self-developed business portal where all courses and programmes offered by NKI are presented. Prospective students may register or apply to courses directly via FEB. In addition to course information, FEB also includes a comprehensive database of articles with news, frequently asked questions, and more general information on distance and online education.

8. What are the strengths and weaknesses of technical systems for administration of distance education, in terms of being effective?

We find that the integration of the systems is vitally important for the total functionality, efficiency, and quality of student support services and for cost-efficiency of online education. The fact that the critical systems can be developed together and continuously is very important, and, of course, also that these developments take place as a result of actual pedagogical, organisational and market related needs.

Courses

9. Which subjects are covered by online education in your institution and what is the relative importance of different subjects (in terms of student “production”)?

The courses provided by NKI DE covers a range of subjects. For example, among the ten most sold courses, one finds interior design, psychology (a one year unit) and accounting. The courses can be classified into three categories, higher education (mainly introductory (1st year) courses), at higher education level, upper secondary level and vocational training. Because academic competence in the subjects being taught are not kept in-house but bought from academics at other institutions, NKI DE can be more flexible in choice of subjects than can traditional education institutions.

10. How would you describe the “onlineability” of the subjects your institution has chosen for distance education?

This is a difficult question to answer. In general, most subjects on secondary school level and university/college level seems to be suited for online education. It differs between courses to which extent the study is suited for individual theoretical study or online discussion in forums. There is no doubt that the majority of NKI online students are adults with additional responsibilities for job and family and wish to study with a great deal of flexibility. This fact seems to result in most students emphasising reading and doing exercises for preparing for exams more than taking part in discussions. Also vocational study programmes emphasise theory more than practice based on the assumption that practice is experienced at work or in other contexts. We have also found that in subjects such as mathematics and interior design there are assignments that are more easily submitted by post than by the Internet.

Market considerations determine whether a course or programme is developed or not. Courses may be 100% online or based on blended learning. Because blended learning makes courses more expensive for students (because they have to travel and also pay for face-to-face classes), it requires more from a market to develop such courses. Consequently, there is a tendency for developing courses within subjects that can be fitted easily to an online format. Still, a considerable number of the courses are based on blended learning.

11. Do the online courses provided by your institution have flexible start-up and progression?

Most courses have flexible start-up and progression. As a part of this model, students are asked to make a plan for study progress. Students register their plan in a standardised format in the LMS. The LMS automatically gives teachers information on progress of each student, and they can thus use this to stimulate progress if it fails. Courses must be finished within 2 years of start up (although if the course is still being offered in the same format, students will be granted extensions without extra costs). Courses based on blended learning typically have fixed progression. In fact, during the first years of offering online education at NKI we introduced fixed enrolment dates (per semester) and fixed progression schedules based on an idea of online learning being more similar to a distributed classroom. It seems that adult part-time learners, that are NKI DE's main target group appreciate flexibility and freedom. Enrolments increased after changing to flexible start-up and progressions solutions and pedagogy more related to distance education philosophies.

12. What is the relative importance of synchronous and asynchronous communication between students and teachers (and among students if they communicate with each other)?

Teaching is largely based on asynchronous communication. Because progression is flexible, synchronous communication between students would be hard to arrange. Therefore, video and telephone conferences are not used. Chat is available in some courses for communication between students, but participation in this is strictly voluntary.

Management, strategy and attitudes

13. How would you describe involvement from the leadership in terms of being supportive?

The management of NKI DE is, of course, clearly supportive towards online education. Also important is that the top management has supported the strategy of developing online education, also at times where the future was seen as less clear concerning technological developments and the activities were more on a pilot level with little immediate economic value. Although parts of organisation can be described as still living in the era of correspondence teaching, the management has through the strategic plans for the years 2005-2007 clearly stated that the future of NKI DE will be based on online teaching and dependent on success concerning ability to combine cost-efficiency and quality online education. NKI DE has developed the following philosophy for online students:

NKI DE shall provide opportunities for students to reach their learning goals through optimal individual flexibility in a community of learners where students are resources for each other without being dependent on each other.

14. How would you describe the attitudes of the different groups of staff towards online teaching?

Employees are generally loyal to the strategy and decisions taken by the leadership, also those employees with strong ties to the fading correspondence model. This is probably different from an ordinary university or college, where academic staff members typically have a high degree of autonomy and where resistance to change is often strong.

15. Does your institution have a strategy for online education? If yes, what is (briefly) the content of the strategy and how is it followed up by employees in your organisation?

Some years ago NKI DE had separate strategic plans for distance education in general and for research and development of online education. When it was accepted that online learning would constitute a main focus for future developments, online learning was naturally integrated in all aspects of the general strategic plan of the organisation. NKI DE is a competence based organisation but administered more according to business than university academic management principles. It is seen as natural that all employees are loyal to management decisions. As mentioned before, employees are largely loyal to decisions and strategies. This does not mean that employees are not involved in the decision process.

16. How does your institution deal with quality issues related to online education (e.g. in terms of strategy, control and management)?

Quality assurance is followed up through a handbook where routines for this are described. In addition, a part of the integrated computer systems registers the time from a student submits an assignment till it is returned with comments from the teacher. If this response time gets long, students easily get dissatisfied. Keeping turn-around time for assignments short is therefore important. To stimulate teachers to handle assignments quickly, the system gives continuous information on his/her response time, how it has developed recently and how he/she is doing compared with other teachers. NKI DE also performs regular evaluation surveys among students based on web questionnaires connected with the course materials. It

is a problem that only about 10% of the students take part in these surveys. NKI DE also regularly carries out more extensive research based evaluations of selected courses and programmes.

17. How would you describe the administrative routines related to online education in terms of effectiveness?

All administrative routines are clearly laid out in detail of all aspects from the marketing of courses and programmes, through follow-up and advise to students in the prospective phase and during study until graduation (or cancellation of studies). It is emphasised that services that can be automated should be automated to increase efficiency and cut costs to be able to allocate necessary resources to support activities that need personal involvement.

18. To which extent may work related to online education be said to be “industrialised” (meaning strong division of labour between groups, high degree of automation, etc)?

At NKI DE, staff members typically have highly specialised tasks, meaning that there is a clear division of labour. With a high number of courses, this is viewed by the organisation as a key factor for success as mega provider.

19. To which extent do teachers involved in online education have predictable and manageable workloads?

This has been a major concern in the transition from correspondence based distance education to online education. While investment in pre-produced and self-instructional learning materials in the earlier distance education systems both in theory and practice should result in less input of teaching resources in the learning phase, it is a risk that online students with the ease of communication can occupy a lot of a tutor’s time. NKI teachers are paid for the number of student assignment they receive. Workload per student can therefore be predicted, because number of assignments is given from the study plan. If the number of students increases markedly on a course, additional teachers can normally be hired easily to deal with the increased workload. Consequently, teachers generally feel that they have both predictable and manageable workloads. Teachers are not paid to participate in discussion group, because this may generate unpredictable costs and work loads for the institution. Basing remuneration of tutors in submitted assignments and not on other aspects of communication is probably not an ideal solution as seen from the student side, but seen as necessary to control costs.

20. To which extent does your institution collaborate with other educational institutions?

NKI DE collaborates with a number of institutions. For example, all courses within higher education are formally offered in collaboration with a university or university college as academically responsible. Here NKI DE is responsible for and runs everything related to distance education itself whereas the curricula are developed at the cooperating institution that also arranges exams. In addition, NKI DE cooperates with providers of education outside higher education, in particular concerning the arrangement of local face-to-face classes or seminars in courses based on blended learning.

21. How would you describe the credibility of your institution (both formal and informal) with the government and public administration?

The institution describes its credibility with government and public administration as satisfactory. The interviewed persons underline that it is especially important for a non-governmental institution to answer correctly to legislations and public regulations. Otherwise one might easily get a negative reputation. NKI DE has always emphasised close contact and

communication with the government and been active in governmental initiatives concerning distance education.

Economy

22. How would you describe the cost-effectiveness of online education in your institution?

Around 95 percent of the revenue of NKI DE comes from student fees. This means that the institution has to be run with a high degree of cost-effectiveness. It is therefore important to develop courses with a high potential for income. In addition, the fact that teachers are paid per student, rather than per course, means that expenses to a large extent are balanced against incomes.

23. To which extent is income from operation of online education stable and predictable?

Recruitment to NKI distance education programmes has been quite predictable over time. As mentioned before, while recruitment to the correspondence based courses has decreased, recruitment to online courses has increased. One main factor in stable recruitment has been that NKI offers a large variety of courses. When market needs change, some courses and programmes become more popular in the market, while others loose recruitment. It seems that the great number of courses is one main reason for stability in income. A main challenge to the economy is public regulations. For example, vocational training programmes are now required to be approved by public authorities. This process may take up to two years per programme and drains considerable resources from NKI DE.

24. To which extent does your institution experience a pressure to be flexible to be able to adapt to a changing market?

With continuous uptake, changes in the market may also be detected early, allowing swift adjustments in activities. Adapting to a changing market is both dependent on the ability to develop new courses and programmes quickly. This is perhaps the most important challenge. The ability of the NKI DE to adapt to a changing market is vital for the institution's ability to survive as a mega provider.

25. To which extent does your institution apply a strategy of flexible employment and use staff to adapt to changes in markets?

Adapting to change is also related to flexible employment. As mentioned before, most NKI DE tutors are working on part-time engagement. That does not at all mean that there is not a stable group of teachers. The majority of online teachers in NKI has been teaching at a distance or online for very many years. However, when number of students is reduced in a programme, the number of teachers tutoring that programme is scaled down, and when a programme becomes more popular, it is normally possible to scale up the number of tutors relatively quickly.

Conclusions

We have previously given the following factors as vital for NKI DE's success in developing and providing online education – most of which have been covered above:

1. NKI is an institution with high competence in both distance education and information technology. Both competencies have been pivotal for the development of online education.

2. Some NKI enthusiasts have always believed in online education and over many years made invaluable contributions to the Internet College.

3. NKI has been careful to only adopt standard and widely used technology. This practice enables students to apply the software and hardware they have at their disposal with little need to buy additional equipment.

4. Students' time flexibility has always been a focal point for NKI. It has been committed to asynchronous communication and deliberately avoided synchronous communication technologies. Communication should take place when it suits the student, not the institution.

5. After some years experience with paced courses starting twice a year, NKI made a strategic choice to focus on individual start-up and progression. The choice was based on student surveys, much internal discussion, and pilot courses that showed increasing enrolment. Hence, NKI students may start a course whenever they want and follow their individual pace of progression.

6. Tuition fees pay for development and operation of NKI courses, so NKI has to provide cost-effective courses. The focus is on much learning for the money.

7. The Department of Research and Development has conducted continuous research and evaluation of online education, and has accumulated knowledge and competence in online education. In addition, the Department has conducted or participated in a number of R&D projects financed externally by Norwegian and European governmental sources.

8. NKI is flexible, with little rigidity compared to public colleges. It has a number of times shown that it is capable of rapid adjustment. The employees have shown the ability to detect new trends and adapt to the changing market. This may be due to the fact that NKI has continuous enrolment and therefore experiences changes in market demands earlier than institutions that offer enrolment only once or twice a year.

9. NKI covers a wide range of subjects and levels. It is not dependent on having in-house competence in all subject areas; it has a long tradition of collaboration with other educational institutions and engaging faculty from other institutions to participate in the development and teaching of courses.

10. NKI has over many years developed high credibility with the government and public administration. It has been committed to achieving approval for public credits, certificates, and student loans.

11. NKI has chosen not to separate the Internet College from the Department of Distance Education. It has deliberately chosen to gradually enhance the online education competence for all employees in the Distance Education Department.

12. NKI has continuously focused on evolutionary development of the Internet College and the administrative systems that support it. Consequently, NKI has had more effective administrative systems than its competitors and at the same time people with high competence on these systems.

Concerning surviving as a mega provider of online learning, we find that the following factors have been most important:

- Flexible employment which makes it possible to adapt to a changing market – NKI DE is not tied to providing courses within specific subjects, because academic competence is not kept in house but is bought on an open and flexible market from academics elsewhere
- Flexible employment which balances expenses with incomes – that teachers are paid per student rather than per course or hours ensures this
- Highly specialised (loyal and enthusiastic) staff for different functions within the organisation – this contributes to cost-effectiveness
- A large number of courses/programmes – gives stability over time as market interest changes between course and programme areas
- Highly integrated computer systems that provides effective flow of and easy access to information