

# Sør-Trøndelag University College

## ***Facts about the institution***

Name of institution	Sør-Trøndelag University College (Høgskolen i Sør-Trøndelag)
URL of institution	<a href="http://www.hist.no">www.hist.no</a>
Country	Norway
Number of employees	580 (academic staff 380)
Levels in the educational systems	Tertiary
Interviewed persons	Thorleif Hjeltnes, Vice Dean Heidi Selbekk, Consultant These two persons have also consulted various others in the institution.

## ***General description of the institution***

Sør-Trøndelag University College is a dual mode publicly financed higher education institution with several departments. Large scale e-learning has mainly been done in one of these departments, Department of Informatics and e-Learning (AITeL). Answers from this department should serve as the main data input for the further analyses in the MegaTrends project. In addition, answers have been given also from Department of teacher Education and Deaf Studies. The e-learning operations of this department are very different from those of AITeL and probably resemble the distance education and e-learning activities as they are found through most of higher education in Norway. To provide a contrast with AITeL, the answers from Department of teacher Education and Deaf Studies are given separate and after the answers from AITeL.

## ***Historical context***

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

Answer from AITeL: At the Department of Informatics and e-Learning (AITeL) at HiST we have supplied distance education as e-learning since 1986. The development of e-learning in AITeL is closely connected to the interplay with the research foundation TISIP and its role as front end, taking care of external financed programmes at AITeL.

From 1986 to 1990 TISIP had major activities in developing and supporting software for net based education called Winix. This was the first software world wide giving the learners the possibilities to work in a graphical interface (Windows) and through that using services like e-conferences and e-mail with attachments and a lot of other functions based on Unix services. In this period we gave technical and educational support to several national distance educational networks at college level.

In 1992 – 1995 AITeL and TISIP took part in the European research project JITOL - Just In Time Open Learning in the Delta programme. The role of TISIP was to develop software for supplying educational functions in the project, called, NoteEditor. AITeL developed two on-line ICT courses.

In 1994 – 1995 the NITOL project and the NITOL group were started. The project NITOL – Norway-net with Information Technology for Open Learning, was given support from SOFF to develop distance education on-line courses. The project was developed by the NITOL group. The group is a formal cooperation between four Norwegian Higher Educational Institutions, that is Sør-Trøndelag University College,

NTNU, Agder University College and Stord Haugesund University College.

The NITOL group developed not only the actual courses, but also supplied a complete business model and all of the necessary infrastructure to run the courses as well. TISIP acted as the common course secretariat for the group, and also developed software for student administration and organised a common web site where sales information, access to the courses, student administration etc were organised. This was very important since the official systems for student administration and learning environment systems was not built to handle distance education systems. The courses became very popular and by the year 2001 AITeL who was the largest supplier of courses had 5745 enrolments. In 1999 the organisation of the Courses was handed over from NITOL to a new organisational unit called The Network University (NVU) and each institution in NVU took the formal responsibility to further develop the activity. After some years the administration of the courses was left with the member institutions, and AITeL together with TISIP continued to develop and sell courses on a stand alone basis.

By autumn 2005 AITeL also took over the responsibility for the course administration, but still using the software developed by TISIP. TISIP is still responsible for the content development (digital resources).

Answer from the Department of Teacher Education (not to be used as main input in analyses): It has been a gradual development. At first pilot projects funded through the government, started to use new technology demonstrating a more flexible and timely approach to network learning. The process was speeded up by a more substantial project related to further education of teachers teaching Arts & Crafts and technical building work. Another important project was the 5-year Online Network/ICT Teacher Education Programme started in 2000. This programme demonstrated a high degree of student activity and almost all students on this programme completed their exams. Simultaneously several projects were started with online networked learning communities/information communication technology (ICT) as a basis.

2. How has competence in e-learning developed in your institution and how has it contributed to your success?

Answer from AITeL: Most of the employees in AITeL have their degrees in Computer Science. Our study programmes are also directed towards bachelor degrees in ICT. Every employee has to take at least one formal pedagogical course with a half-year duration. In this course there are some topics related to e-learning.

Nearly every employee in AITeL gives e-learning courses as part of their duty. It was very important for the department to have a common quality standard for all the courses. For the students this means that they know how the courses are organised, when will the learning activities take place, how much learning material will be supplied and how many exercises and assignments do they have to complete to be able to take the exam. For the academics this is similarly important because they have to produce the learning material using the same template, they have to communicate with the students using the same tools and they have to correct exercises giving comments and advice using the same standards. In many courses we use student assistants. In our e-learning model the tasks of the assistants are also defined and how they will share the work with the teachers.

Before the start up of each semester the coordinator of the distance education goes through the e-learning model and all its elements with both new and experienced teachers and student assistants.

Even if we for most of the courses use the same model, there is continually development going on. Some courses use more advanced technology for instance online conference tools for synchronous communication and document sharing, tools for giving lectures using slides in combination with audio and video or tablet pc's with handwritten formula development etc. We use the experience from these trials to enlarge our standards and to further develop our e-learning model and increase the common competence among our teachers.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Experiences from ICT-based development projects and online network based further education has contributed to higher competence in relation to e-learning. It has also led to the funding of a fresh PhD- degree in this field.

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

Answer from AITeL: The development has been gradual. Since 1986 there has been a tremendous technological development. The increased bandwidth and the development of new tools gives us the possibility to support much more advanced pedagogical settings now than before within reasonable costs.

Answer from the Department of Teacher Education (not to be used as main input in analyses): It has been a gradual step-by-step process.

4. How has online education been followed up by evaluation and research and how has this contributed to your success?

Answer from AITeL: Our e-learning activities are directly a consequence of the research we did in the JITOL and the NITOL project. However it was necessary for us to take a broader perspective than only focusing on pedagogical or technical outcomes to make the results sustainable.

We conduct a complete evaluation in every subject every second year. In this evaluation we ask about how the students consider:

- the content of the course (relevant, up to date etc)
- the learning activities
- administrative systems, routines etc

Based on this information about the courses we do the necessary upgrading.

Both AITeL and TISIP have continually been involved with research activities and have been both partners and coordinators of EU Socrates e-learning projects and projects under the e-Learning and Leonardo Programme. We have also had several engagements in SOFF / NUV projects as well as Interreg projects in the field of e-learning. At our department we have also research going on related to automated testing, development of digital resources and software for digital repositories. There are two PhD students working on e-learning subjects.

The research and development work is important to be able to take part in the international research in the field and also to further develop and renew our e-learning model as described earlier.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Research funding has not been great in spite of several applications. The project Online Network/ICT Teacher Education Programme has to a certain extent been followed up by evaluation and research. I.e. the above mentioned PhD degree

uses data from this project. In addition to this there is some research carried out on network learning communities with campus students

## **Technical issues**

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

Answer from AITeL: Our institution is a University College for students taking Bachelor degrees in computer engineering. Therefore I can say that the IT competence in our institution is very high.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Competence in this field is variable. Most of the staff are operative in relation to It's Learning.

6. To which extent are e-learning 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)

Answer from AITeL: All our e-learning courses is based on a standard home computer with MS Office. None of the courses requires additional hardware or software. The needed software used in the courses can be downloaded from Internet for free.

Answer from the Department of Teacher Education (not to be used as main input in analyses): We mainly use simple interface and applications. It is a low cost for the students and the school provides hardware/software through the machines available to the students on campus.

7. How would you describe the integration between different IT-systems that are involved in e-learning in your institution? How has this contributed to your success?

Answer from AITeL: We have several systems: 1) A webshop for buying the courses, 2) An accounting system for invoices, payment through credit cards online etc. 3) A student administrative system to register the student at correct study programme, organise the exams, etc and finally 4) a learning management system for all the learning activities.

In other words: Not a very flexible system.

Earlier we had one single system to administer the whole process starting with the student buying the course until the exam was finished. But requirements from the director and rector of the institution changed all this. All the e-learning activity should be put into the procedures and systems used for the rest of the students, i.e. campus students. But these systems were not prepared or planned for e-learning students and we therefore had to make some shortcuts and do some manual work between the systems.

Not an ideal situation, but we had no choice. We were forced to do so. In the long run of course it is best with one system handling all students, both campus and distance students, but the current IT-system was not prepared for this change.

Answer from the Department of Teacher Education (not to be used as main input in analyses): The development is moving forward and we are getting better and better.

8. What are the strengths and weaknesses of your e-learning administrative systems (from enrolment through delivery to certification)?

Answer from AITeL:

Weaknesses:

- We have to use several systems with manual transfer of students and student data between the systems.
- The systems doesn't support flexible start-up, flexible progression and flexible exam date.
- Many problems with LMS-system. Could not list all here. One serious problem with LMS in the e-learning context is lack of public areas where coming students could take a look into running courses, look at part of the learning material and learning activities and next decide if he/she should take that course.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Our strength is professional substance tied in with the connection between the subject of science and the use of technology. Support from the library is very good in relation to ordering articles on the net. One of our weaknesses is our dependence on technical support which is not always available on a day-to-day basis.

## Courses

9. Which types of subjects are covered by online education in your institution and what is the relative importance of different subjects?

Answer from AITeL: 90% of the courses are IT-courses. The rest are about economy, marketing and entrepreneurship.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Subjects covered by online network education in general teacher training and further teacher education are for example mathematics, Norwegian, music, natural science study and pedagogics. In addition we also have ICT related innovation projects, courses and lectures/presentations.

10. How would you describe the “onlineability” of the subjects your institution has chosen for e-learning?

Answer from AITeL: We started early, already in 1992, and from that very moment it was important for us to have a simple e-learning model based on a simple home computer and download possibilities, i.e. the student can be on-line for a moment, download all the needed materials and when go off-line again. The reason was to reduce the costs.

But more and more of our learning activities are now demanding permanent online capabilities. This is possible because most students (if not all) have broadband. The new demanding activities are chats, video conferencing, streaming video etc.

As a conclusion I can say that most of our learning in 2006 are still low on the onlineability scale. Most of ours courses can be taken being on-line for only short moments.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Our “onlineability” is very appropriate, but in combined with valuable face-to face interaction in classes/sessions at certain intervals and of variable lengths throughout the course, for example classes/sessions with the duration of some days or a week. Body language is of importance. View of learning is important; can knowledge be transferred or is knowledge distributed between human beings?

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

Answer from AITeL: No. We have two semesters a year with fixed start-up and fixed end each semester. Between the fixed start-up and fixed end we do have a kind of flexible progression, because the students can vary the speed between start and end.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Yes, some online courses have flexible start-up and progression.

12. What is the role or importance of synchronous and asynchronous communication between students and teachers and among students themselves?

Answer from AITeL: Most of our activities are of the asynchronous kind, i.e. discussion forums, mail, downloading learning materials, deliver exercises and other work, looking at slides presentation with video, multiple choice tests etc.

But some activities in some courses do have synchronous communication. Mostly it is chats in project discussions and guidance for groups of students at a given hour of the day.

Answer from the Department of Teacher Education (not to be used as main input in analyses): We mainly use asynchronous communication and this has been successful for example in courses in Norwegian. This is also documented i.e. in a PhD thesis, August 2006, by Dagrund Kibsgaard Sjøhelle

### ***Management, strategy and attitudes***

13. How would you describe involvement from the institution leadership in terms of being supportive, and how has this been important for success?

Answer from AITeL: HiST have been through several organisational changes from 1986 to 2006. HiST was established in 1994 and before that our distance education was at part of Trondheim Technical College. In 2002 there were a drastic organisational change, where five autonomous departments were dissolved and replaced with 7 smaller departments with less autonomy and a stronger central administration. The responsibility for further education is formally still under the administration of the departments, but now the departments are obligated to use the same LMS system and the same student administrative systems, even if they are not particularly suited for distance education. This has also resulted in the termination of the contract between TISIP and AITeL.

We have experienced that the leadership has changed attitude from being very supportive and willing to understand the mechanism involved in running at large external financed e-learning activity to become a lot more formalistic and in favour of one size fits all thinking. This has already undoubtedly led to less cost efficiency and in the end there is a real danger that the online distance education will come to an end as a consequence. (The same happened earlier with the other NITOL partners and their activities have stopped.)

Answer from the Department of Teacher Education (not to be used as main input in analyses): Some describe this as moderate, others describe it as encouraging and an important factor contributing to their success.

14. How would you describe the attitudes of the different groups of staff towards online teaching? How has this affected your success?

Answer from AITeL: All the teachers at AITeL are involved with giving e-learning

courses. We have developed a payment model where the salary is reflecting the extra work for both developing digital resources as well as organising and doing the new learning activities related to e-learning. The staff is generally very positive to have e-learning as part of their job. The payment model is one of the crucial factors of our success.

In TISIP they have special employees taking care of all student matters related only to the distance education courses. There are also personal working with marketing, technical support, software development etc. This is important for two reasons; one is that the e-learning activity is the main task and not an occasional extra task, and secondly the systems surrounding the e-learning activities are customised to support selling, student administration and learning activities in an optimised way. The new policy of HiST, as described in question 13, can easily lead to problems here.

Answer from the Department of Teacher Education (not to be used as main input in analyses): The attitude is variable. Some are very positive, others not.

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?

Answer from AITeL: Yes, Strategic plan 2005 – 2010; p 4:

HiST want to be a central partner in the field of **further education** by:

- developing decentralised and flexible offers both on and off campus
- develop sustainable technological based solutions

Actions:

- develop new subjects, technological infrastructure and pedagogy for all competence areas in the institution focusing on regional use
- extend the use of e-learning both on and off campus

Based on this statement it should be legitimate and possible to make progress in the field. However each department have to develop their own plan of action to be able to develop their specific offers, based on realistic estimates of incomes and costs. For the employees, e-learning is one out of many tasks, and normal campus education and research will be the main ones for most of them.

Answer from the Department of Teacher Education (not to be used as main input in analyses): There is no set strategy for online education in our institution.

16. How does your institution deal with quality issues related to online education and has quality contributed to success?

Answer from AITeL: The institution has developed routines for quality assurance in education. These are also applicable to the field of online education. In addition the department has developed special routines for e-learning. These are described as answered in question 2 & 4. We think good quality is very important to keep satisfied students over time. More than 60% of our students answers that they want to take another e-learning course by us, and as much as 96% answers that they will recommend our courses to their friends and colleagues.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Information flow routines are not good enough and quality issues related to online education have only to a very low extent contributed to success.

17. How would you describe the effectiveness of your administrative routines in online education?

Answer from AITeL: Our routines as developed by TISIP for more than 10 years is very effective, see answer to question 13 and 14 for more information on this matter. The effectiveness is reduced by approximately 30 – 50% by changing to HiSTs common systems, not developed for e-learning.

Answer from the Department of Teacher Education (not to be used as main input in analyses): The effectiveness of administrative routines in online education is variable. Some describe it as not being good enough and feel that the policy of the college does not further pedagogical use.

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

Answer from AITeL: The way we organise the education, using student assistants to take care of high number of students, makes it possible to have quite predictable workloads. One exception might be the number of exam papers to be corrected within a four week time constraint.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Some feel that this is so only to a very small extent. The policy should be that e-teachers are teachers within the normal working hours.

19. To which extent does your institution collaborate with other educational institutions and how has this affected success?

Answer from AITeL: In the years 1994 – 1999 HiST collaborated closely with the rest of the NITOL group. This was very useful for all of the partners both in relation to create a large portfolio of courses, and for developing common solutions for marketing (The NITOL Catalogue) and technical and administrative solutions. The collaboration was done without any bureaucracy (daily e-mails and some phone calls) and one or two meeting each semester. All decisions were made by consensus. TISIP took care of all day to day operational and service tasks.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Our institution collaborates with several other national and international educational institutions.

20. How would you describe the credibility of your institution (both formal and informal) with the government and public administration and how has this been an important criterion for success?

Answer from AITeL: HiST is a well known institution among applicants to our offers. Most of our educations have high credibility and a good reputation among our customers. Our e-learning offers were marketed in the beginning as NITOL courses, building up NITOL as a brand name, but also with a clear message that the offers were given by collaboration of institutions with a high reputation. To most of the customers the possibility to gain formal credits was very important. Regarding government and public administration there were some initial problems, for instance lack of approval of student loans, but this was actually solved by raising the matter in the Norwegian Parliament. AITeL was also allowed to have the first fulltime study given as online education by the Educational and Research Department financed through the institutional budget.

Answer from the Department of Teacher Education (not to be used as main input in

analyses): Our formal and informal “standing” with the government and public administration is high.

21. How are you able to handle the large number of online courses and students?

Answer from AITeL: For the moment HiST offers 70 online courses. We have handled at the most, 3500 student per semester. This has been done by very effective administrative routines, and by developing customised software to support the administration, the teachers and the students. The possibility to involve student assistants is another factor that makes the offers scale well with the high number of students.

Answer from the Department of Teacher Education (not to be used as main input in analyses): This demands hard work and is handled for example through dividing the students into small groups and discussion forums in their own virtual classrooms. The learning potential is far greater in smaller groups. The teacher can join the small discussion groups for short periods as a supervisor, giving short comments to move the discussion forwards. The group is autonomous.

## **Economy**

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

How has cost-effectiveness affected success?

Answer from AITeL: The answer to this question lies in the business model we have developed for running our courses. A central point here is that the main payment to the teachers is proportional with the number of students following the courses. Other costs are shared among all the courses, like administration, development of digital resources, marketing etc.

AITeL have priced the courses quite low compared to many other offers, and we have been able to control our costs for large number of students because our model scales quite well. Our philosophy is to serve many students at low costs rather than fewer students on high-cost offers. This makes our courses available and attractive to a broader user group. About 1/3 of our customers pay for their courses by themselves and 2/3 of the courses are paid by their employers.

Answer from the Department of Teacher Education (not to be used as main input in analyses): Online education is not especially cost effective. (This is documented and discussed by Professor Peter Goodyear, University of Sydney)

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

Answer from AITeL: From 2001 to 2006 there has been a gradual reduction in enrolments by approximately 10% per year. This is quite little compared to many other suppliers of ICT education. Taken into account this situation, the income has been quite predictable.

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

Answer from AITeL: Our model is originally quite flexible. We normally offer single courses of 6 credits. It is also possible for the student to continue his course in the next semester if he / she is not able to fulfil the work in one semester. We have so far not considered an open start up and end for each course. Our systems and other operational requirements are not capable of handling such increased flexibility.

Answer from the Department of Teacher Education (not to be used as main input in

analyses): To some extent.

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

*Answer from AITeL: So far we have only to a small extent used part time employment to adapt to market changes.*

Answer from the Department of Teacher Education (not to be used as main input in analyses): No set strategy.

### ***Additional factors***

26. What other factors have contributed to sustainability, robustness and the achievement of critical mass in your institution?

*Answer from AITeL: We think that producing learning material (texts, lessons) of high quality is crucial for obtaining sustainability and a critical mass of students. Producing such material introduces issues on copyrights. There is an ongoing discussion in our institution on how to handle these issues.*