eNORSSI

The Information and Communication Technology Strategy
of the Finnish Teacher Training Schools Consortium
2013 - 2016

Approved at the eNorssi Management Team
meeting on 03/10/2012 and heard
at the Board of Rectors meeting on 29/11/2012.

See the process on the Net at:
http://enorssi-tvt.wikispaces.com/

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1. The Vision and Objectives

Teacher Training Schools are expert, forerunner communities in information and communication technology, utilising a wide-ranging pedagogy in teaching, teacher training as well as research, trials and development. In addition to pedagogy, Teacher Training Schools function as the forerunners for educational technology applications as well.

The teachers, students and teacher trainees at Teacher Training Schools have excellent prerequisites to work as diverse, active users and producers of media, besides various terminal devices and network services. The Teacher Training School students are provided with the diverse study skills needed for future academic advancement and professional life.

The Teacher Training Schools' learning environment and process have extensive benefits even beyond the classroom setting. As a plus, they support the communal learning experience, and *enabling the students to share their skills. The Teacher Training Schools both use and develop e-learning materials extensively. More importantly, the Schools equip both teachers and students with the necessary technology. Here, the students are given the possibility to utilise their own terminal devices (i.e. tablets, smartphones etc.) in school work. Furthermore, the Schools provide their students with a wireless network, which they can access, using their own equipment.*

2. Objectives, Project Planning and the Strategy Process Description

2.1 Objectives

The main aim of the joint pedagogical information and communication technology (ICT) strategy process University Teacher Training School is to further unify, and to develop the ICTs' environments, skills and technologies of Teacher Training Schools. The ensuing bulleted list lays out the concrete objectives of the strategy term:

- Each Training School teacher has outstanding pedagogical skills on applying information, and communication technologies in teaching and trainee supervision. This will be evident by the diverse application of existing technologies and dependent services.
- Each teacher trainee will gain versatile experience applying ICT in teaching during their training and will be able to put the valuable skills gained into practice in their future career.
- Each student (elementary level pupils and secondary, i.e. sixth form, students) will be provided with excellent skills to act as an information consumer, assessor and as a producer in society.

During the strategy term, it is intended that each student has a terminal device at his/her disposal, enabling him/her to utilise the diverse e-teaching materials. Furthermore, the schools are making significant change-overs to utilising e-learning materials and services.

2.2 Projects

Project networks are a pivotal part of the training school's ICT performance environment. During the strategy term, it will be ensured that there will be a teacher from every training school to participate in the network project and to draft applications. Tasks will include active project

support through research, testing and developing teaching techniques and new technological solutions, amongst other things. The focus of the project will be on the students', teachers' as well as trainees' roles and tasks.

2.3 Strategy Process

The strategy process was developed primarily through networking. The process was set out by selecting a team to draft out the strategy in collaboration with the eNorssi network project coordinator. In the next stage of the process, all the teacher training schools' ICT coordinators participated by writing and commenting on the process. The process was set out in a wiki environment, giving all participants free access. The teacher training schools' teachers were informed about the stages of the process in advance. All members of staff were given free access to contribute to the creation of the strategy manuscript.

The strategy draft was given to the Finnish Teacher Training School Rectors for commenting in September 2012. The comments were given weight in the final version. The eNorssi Management Team approved the strategy in their meeting 3rd. October 2012. The Leading Rectors of the Teacher Training School Consortium processed the strategy in their meeting on 29th. November 2012.

After the joint strategy process, the next item on the list was to move on to developing a school-specific action plan. In this plan, the units' particular needs and requirements are narrowed down. It also describes the way the objectives and vision of the strategy will be put into practice.

The continuous evaluation principle will be applied to the strategy, and it will be developed, updated and further defined on an annual basis. The strategy has been jointly drafted by the University Teacher Training School Consortium. In addition, the strategy will direct the Schools' performance in elementary, secondary instruction and teacher training.

2.4 Documents for guiding the strategy work:

- A development plan for education and research 2007 – 2012
- A Strategy for a National Information Society
- A Strategy for an Every-Day Information Society
- A 2020 Teacher Training Report
- Previous strategies, unit-specific evaluations
- An information strategy for the University and for the Faculty of Education
- A strategy for the Teacher Training School/Unit
- The Finnish National Board of Education (FNBE) recommendations for the use of social media
- A foundation curriculum for elementary education
- A foundation curriculum for secondary (sixth form) education

3. Development Targets and Measures

3.1 The Equipment and Network

Ascertaining the equipping level of the ICT, includes developing a solid technical framework and creating a platform for extensive use of ICT technology in teaching and learning. During the strategy term, the objective is to ensure that all the Teacher Training Schools are set up with high-quality equipment that are sufficient in scale, and which also guarantees a short turn-around (25% of the equipment is replaced annually; the complete stock follows a four-year turn-around cycle). In addition, the diverse needs of the schools will be catered for.

The equipment standards in the schools must be up-to-date in such a way that the trainees have the possibility to try out the latest technology during guided practice sessions, which would otherwise only become readily available once the trainees enter the workforce. Thus, it is essential for the schools have cutting-edge didactic and technological expertise.

Moreover, during the strategy term, all teaching staff will be supplied with portable PCs, enabling them to prepare lessons and use the wireless network regardless of time and space. The terminal devices will be linked to miscellaneous equipment, if necessary. The minimal equipment requirement of the facilities comprises a data projector, a documenting camera, high-quality audio equipment and, as a supplementary recommendation, an interactive intelligent blackboard. A personal device, in this context, refers to the possibility to manage the device, which includes administrative rights. In addition to the above, as a requirement for user training, a sufficient network, hardware and software support will be needed.

The basis of device acquisitions for teachers would be the various individual needs and the applicability for the utilisation and trials of subject-related applications. The training schools will not commit themselves to one particular OS or any one hardware supplier, in the event that the previous course might become endangered. It is paramount that students must be given the opportunity to become familiar with various OSs and technological solutions.

Besides stationary hardware, there is a requirement for PCs and a complete portable equipment storage unit, which will enable utilising ICT in teaching without a need for a separate facility. This objective focuses on a diversified use of the school building facilities.

The objective on the part of sixth-form education is that each and every student has access to a PC or a corresponding terminal device, which he/she uses on a regular basis and as a natural part of learning (a so-called one-to-one model). Concerning elementary education, the objective is to acquire a stock of devices that would enable utilising ICT in teaching, whenever necessary. The equipment ratio at elementary level would be one to three. In addition to traditional stationary hardware and portable computers, other devices are being considered. These are, for example, various light terminal devices, such as tablets and user terminal solutions, which will enable minimal Internet browser functions (open applications on the web and cloud resources).

During the strategy term, sixth-form schools will begin preparations for taking e-matriculation examinations according to the national curriculum. This will bring about great development requirements for the sixth-form schools' equipment and network infrastructure in this decade, meaning that training schools must be at the forefront once the e-matriculation examinations are launched.

Students are encouraged and instructed to buy their own device (according to the so-called BYOD - Bring-Your-Own-Device principle, where applicable). This model works well in sixth-form schools, and in elementary education as well, where it is necessary to ascertain that pupils are given unequal treatment. Personal devices may be used by common consent, for example, to make notes instead of using a paper notebook, or in individual presentations.

The lessons are planned by the teachers and trainees in such a way as to facilitate the meaningful use of ICT in a classroom setting and to enable a natural approach to using the school equipment or the students' own devices, too.

The training school-specific features as a part of the university data management complex

The training school device and network infrastructure is part and parcel of the university data management complex. The universities seem to have an endeavour to unify their infrastructure during the strategy term. In this case, it is pertinent to ensure that the scholastic nature diverging from the rest of the university is taken into account and its significance is acknowledged in research, trial and development. Hence, the Teacher Training School cannot commit to large-scale device and OS purchases.

An effort is being made to streamline the training schools' students and teaching staff user-id and registration systems in step with the *Alma Mater* universities' data administration. The administration is currently being informed about the training schools' development task and forerunner role, which set requirements for school technical aspects. The training school administration, teaching and students specific needs will be made known to the university data administration and will be accounted for in the university data administration workings.

Teacher training terms must consist of diverse systems and software trials; hence, keeping to one infrastructure is not a practicable solution for the training schools.

Sufficient and meaningful network connections

Network connection functionality and coverage are ever more critical to teaching. As portable computers and mobile devices become common; network functionality is faced with new challenges. It is necessary to, especially; develop wireless networks (including coverage, a simple but secure registration, authentication, and preferable role-based privilege level management). While defining these objectives, it must be taken into consideration that besides the main university alumni, there are elementary school pupils and sixth-form students on the campus who are predominantly underage.

The wireless devices offer more diverse and flexible approaches to teaching and learning experiences than do devices connected to the static wired network. The wireless network must allow the students to use their own devices according to jointly agreed rules.

It is necessary to be able to utilise open source joint learning resources found on the net for learning and teaching, and the so-called cloud resources, such as blogs, wikis, shared documents, network learning platforms, video conferencing systems and e-learning materials besides miscellaneous corresponding equipment and services. Network Services needed by teachers, pupils and students must be technologically managed in a way that the user may also gain easy and safe access outside the school and university network.

3.2 Social (community) media in teaching

The term pair social media and community media will be synonymous in this document. Although the term social media (sosiaalinen media) has become commonplace in everyday use, the Finnish Language Office recommends the use of community media (yhteisöllinen media). Nevertheless, for clarity's sake, the term social media will be used throughout this document.

Seen from the formalist and informal learning perspective, a so-called virtual learning environment has developed alongside spatial learning environments. Moreover, training schools have taken a natural approach in the world of social media and other diverse Internet-based networks.

The duty of the school is to educate the pupils to become players in a future knowledge and innovation society. In practical terms, this denotes the extensive utilisation of social media in both teaching and learning. Trainees are required to give media content precedence in teaching as well (i.e., community resources, wikis and blogs).

It is generally assumed that issues, such as privacy and the principle of transparency coupled with the use of social media workings (e.g. Netiquette) and the extensive employment of these methods in didactics, including governing the teacher's own work and teaching (e.g. time management), are under control.

3.3 Learning platforms and e-learning materials

Each training school teacher is required to know, or able to acquire the knowledge of e-learning materials and learning environments essential to his/hers work and to instruct students in their meaningful use during practical assignments.

During the strategy term, training schools will adopt e-learning materials and e-books on a large scale. In addition, a diverse use of network services will prepare the students to play an active part in various demanding life situations.

In accordance with its needs and financial resources, each training school will select network-based learning environments, which can be used in teaching and training. In addition, there is an extensive palette of social media network resources, which may be employed as a tool for projects and further collaboration. The schools are directly or through the eNorssi collaboration linked to projects, which aim to develop educational purposes of network learning materials and learning environments. Learning environments need to be developed, taking into account the ever changing demands and possibilities.

3.4 Teacher's ICT skills and continued vocational training

Training school teachers are to be guaranteed a regular, needs-assessment based on a skilful pedagogic education by the employer. In simple terms, this refers to a regularly mapping of the skills level, which will be linked to the teacher's own background and needs-based education. Furthermore, teachers are encouraged to develop the e-learning materials' and learning environments' pedagogical application.

3.5 Resources and supportive action

Together with the collaboration network eNorssi and the school ICT group, the unit management has a pivotal role to acquire and allocate resources, putting development operations into practice, in addition to supporting, encouraging and inspiring staff according to the ICT-strategy stipulations. Each unit must have one ICT team authorised by unit management. The team will draft a feasible and detailed implementation plan for the present ICT strategy in concert with unit management and; thus, ensure that the feasible course of action will be brought to completion.

The units must ensure that:
- ICT coordinators have the necessary competence
- ICT coordinators work in close collaboration with the *Alma Mater* university data management support. The university data administration is responsible for the network infrastructure and the purchase of general purpose applications, including taking into account the training schools' special needs.
- The training schools have at their disposal their own it-support staff and the university data administration support services.
- Teaching staff are trained to have the necessary skills.
- The units themselves have access to high-quality ICT equipment in accordance with the strategy. The equipment is meant to assist the teachers in their work and promote lifelong learning, and serve the students and trainees during their training. The wireless network covers the entire school building; the teaching facilities will be equipped with e-blackboards.
- The training school has access to reliable and compatible video conferencing systems for conferences, meetings, networking instruction and network collaboration. Furthermore, didactically suitable network learning environments will be embraced in the classroom context.
- Training schools allocate sufficient financial and human resources in their budget for the furtherance of ICT knowhow, software and hardware purchases, maintenance and technical and pedagogical support. Any possible resources accumulated by the project implementation will function as supplementary resources. The training schools are to implement a school by school review on a regular basis, with regard to resources and supportive action. They apply as a network for various ICT developments and project funds actively and participate in meaningful project implementations.

3.6 Applying ICT in a Practice Guidance setting

The training school teaching staff will be trained to implement ICT in guided practice. ICT will have a diverse use as an aid for guidance and reflection (i.e. video footage from practice lessons). In this way, the trainee will gain extensive feedback and concurrently familiarise him-/herself with ICT as a developmental tool for analysing and developing of his/her teaching.
The possibilities presented by social media will be extensively implemented, so that each trainee may familiarise him-/herself during practice sessions with the social media services as an aid to teaching and guidance and is able to gain personal experience from taking advantage of social media in his/her studies. The services provided by social media enable a pedagogical discourse between trainees and their supervisors that may bridge subject boundaries.

3.7 ICT in collaboration between school and home

The collaboration between school and home takes advantage of student information systems and open source network services. The pupils and teachers have personal sign-in id-codes for the systems and social media services used in the school-home collaboration. The student information systems and social media services are used on a regular basis to make the school and pupil work transparent for parents, as a means of communication between teachers and parents and for feedback on pupil's school work. The services will be used context sensitively as a student's e-communication notebook, a course or study period notice board and as a general of intensified support for elementary education.

4. Strategy Interface and Interest Groups

The training school will work in close collaboration with several public administrations and regional representatives. In addition, collaboration will be carried out, amongst other things, with publishers and other economic agents. Furthermore, the following political bodies are amongst the interest groups:

- Registered Association of Finnish Training School Rectors (Harre)
- Trade Union of Education in Finland (OAJ) and Registered Association of Finnish Training School Teachers (SUHO)
- The Finnish National Board of Education (FNBE)
- The Finnish Parliament Education and Culture Committee
- Ministry of Education and Culture (OKM)

In addition to the above, individual Teacher Training Schools include the *Alma Mater* university, its teacher training centre and faculty, including regional networks.

5. Assessment

The present strategy term will run from 2013 through 2016. Nevertheless, the strategy will also be reviewed and developed during the strategy term. The strategy will be assessed annually both unit specifically and as a network.

The Strategy Appendix (1) follows the assessment of the current situation, which is based on the Norssiope.fi I and II skills assessment results. The skills assessments were carried out in October 2011 (N=407) and in October 2012 (N=430). A more detailed breakdown will be implemented by each unit, including the graphic illustrations, which can be obtained from the Norssiope.fi project reports.

6. Appendices

- Appendix 1: A survey of the current situation (i.e. statistical information, the joint part based on the skills assessment)
- Appendix 2: Institute-specific review and implementation plan (current situation and course of action)
- Appendix 3: Teacher skill levels (mutual foundation)
- Appendix 4: Students' ICT skills (institute specific)