


TIGER LEAP

1997-2007





There is no reason to think that school innovation work has ended. It's quite the opposite; with each year this work expands and gets deeper. Our increasingly hectic life sets new tasks for the educators and we cannot ignore that. Therefore, it is relevant to discuss what the future tasks could be for school innovators in their field of activity. Our main attention should remain on the innovative ways of educational work, meaning student independent learning and general education implementation among lower grades because this work brings a good crop.

Johannes Käis 1933

HELLO!

I am the Tiger and 10-years old. In Estonia they know me better under the name Tiger Leap, but that does not bother me because I am a creature with a good sense of humour and capable of developing. During these years my name has been on the minds of many people — often because zoo semiotics and counting up the number of computers seems to be a cherished activity among Estonians, and more seldom, in order to discuss reshaping the educational paradigm. To tell the whole story and avoid further misunderstanding I have decided to give the history of the first 10 years of my development, and publish it as a book and on the Internet.

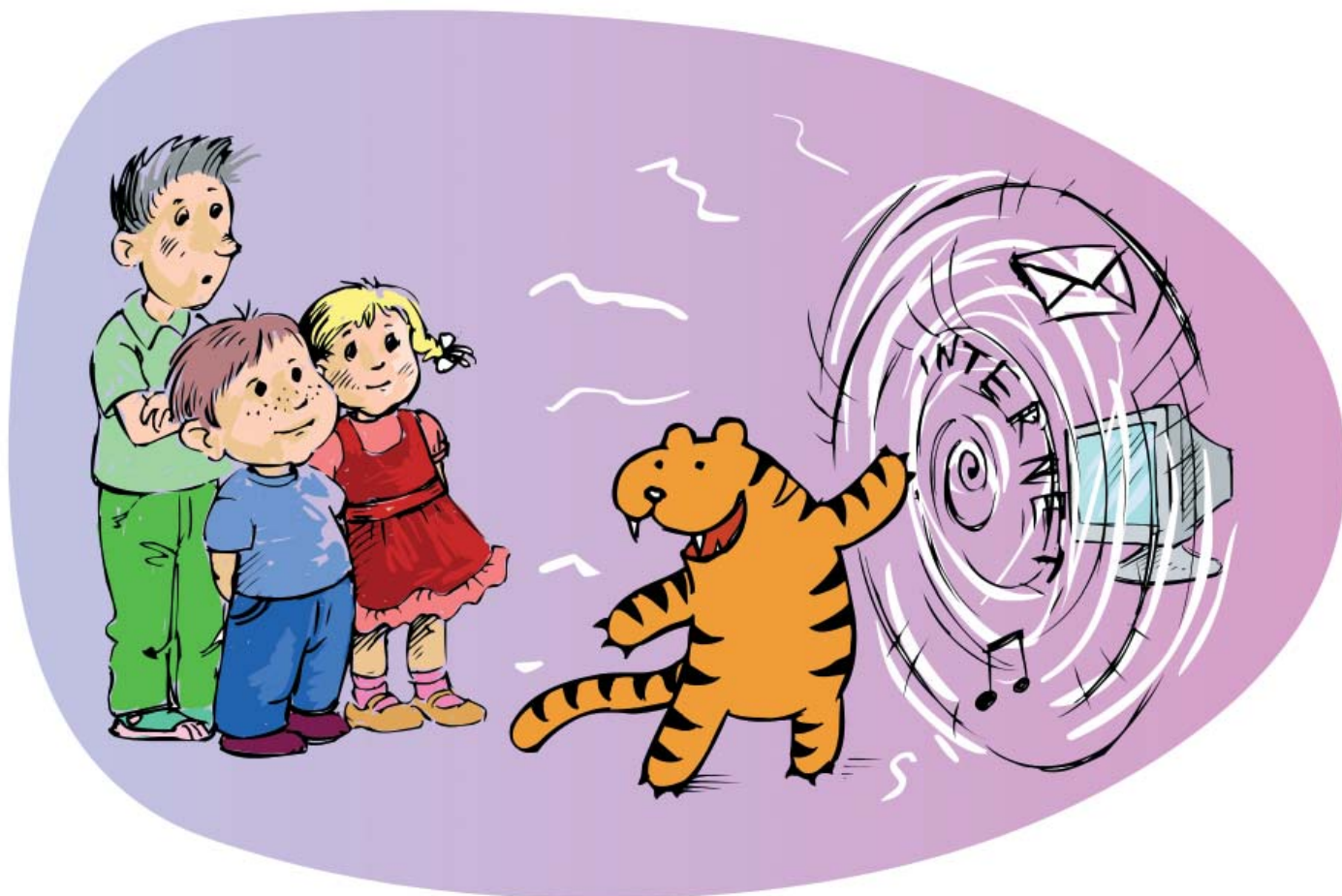


On a bleak afternoon in the autumn of 1995, Toomas-Hendrik Ilves and Jaak Aaviksoo decided to start updating the Estonian educational system with the help of information technology in the name of social development. Many Estonian schools had computers already; some schools even had modem dial-up connections to the Internet. Smart and witty Kaarel Tarand from the Ministry of Education proposed my name. The name, of course, had to be hard-hitting and easy to remember. President Meri, who could then see further than most of the leaders in the field of education, decided to announce the Tiger Leap Programme officially open on February 21, 1996. In other words — the Tiger was born. What happened next to the Tiger is something that often happens with a liability. A liability sometimes goes round and round, and looks for someone to take on the responsibility for it. I was very lucky. On February 21, 1997, the Tiger Leap Foundation, a suitable growing environment where I could develop, become independent and sui juris, was established. Our mission was to assist teachers and school leaders in updating school life with the help of information and communication technology.

Times have been better and times have been worse, but they have always been interesting. Today we have friends and supporters not only from all over Estonia, but also in Europe, America and Australia. Many have said that our strength is in being systematic, in synergy, flexibility and in stable funding. Probably this is true — the Tiger Leap Programme (1997-2000) developed into the Tiger Leap Plus Programme (2001-2005), and from there, into the Learning Tiger (2006-2009). The centre of focus has moved from computers and Internet online connections towards teacher training, electronic educational materials and international cooperation. The reshaping that was discussed by three wise men ten years ago has gradually started.

Enjoy the reading!

1997



WARM-UP EXERCISES

*Introduction of the
DVD system*

*IBM's Deep Blue —
the first computer
that checkmated the
World Champion Garry
Kasparov*

*1 million web pages in
the world*

Usually children are modest, but not me, being a 1-year old tiger cub! I wanted to introduce and show myself off to everybody. My first big début took place in April at a fair called Computer `97, where we built a 65-square meter stand with 17 computers to introduce Tiger Leap. Before the fair, Marju Lauristin taught me how to communicate with the media. During the four days of the fair, I introduced the visitors to electronic courseware programmes, told them about simulation games and IT usage at schools, and how important it is not to forget our mother tongue or national culture in connection with technology.

At the end of the summer school holidays on August 31, I arranged a huge event with MicroLink called “On the Internet on Sunday with the Tiger” in the Tallinn Town Hall Square. My sincere wish was to attract people so that they could get the feel of Internet surfing with their own paws, or hands. To make that possible, we installed 100 computers and selected 50 smart students to assist us. For this event, I drew up a lesson timetable with “subjects” like interactive lessons in computer basics including how to use the Internet, make a homepage and use e-mail and Internet banking. I liked the day a lot. Children rushed to computers at the very beginning of the day and also older people with a sincere interest appeared. All that gave me energy to start making the first leaps.

The tiger is reputedly an intuitively wise animal. Therefore, I tried to prevent mistakes repeated by many countries that brought thousands of computers into schools without a concrete plan. I built my first programme on three pillars simultaneously — computers and the Internet, basic teacher training and native language electronic courseware. From the very beginning it was obvious that I needed helpers from all over Estonia for this work and these 18 helpers became Tiger Leap coordinators in the counties.

**TIGER LEAPS
COULD START —
TIGER LEAP
PROGRAMME
(1997-2000)**

COMPUTERS AND THE INTERNET

I did not start from scratch. The Ministry of Education had already provided schools with computers via tender projects for years. Decisions were taken by the Information Technology Operational Committee. At first I decided to use the same system, but also called together an information technology workgroup led by Erkki Leego in order to develop a sustainable and expedient way to establish and improve school computerisation. During one year, I arranged for three procurements and as a result, Estonian schools received 743 computers. I checked the Internet connections at schools. At the beginning of the year, 150 schools out of a total of 600 had modem dial-up connections to the Internet or e-mail options, and only 10 schools had online Internet connections. I asked EENet for help and we managed to build online connections for 20 more schools and about 100 schools got modem dial-up connections. By the end of the year, the proportion of schools connected to data communication networks differed greatly by county. More than half of the schools in Tartu County had Internet connections, and the smallest number of connected schools was in Tallinn.

According to an evaluation by experts, about 6,000-7,000 teachers out of 16,000 had had slight contact with computers. I understood immediately that we had to start basic computer training and fortunately I knew the right person to draw up a suitable training programme – Anne Villemis. Together, we concluded that to train a great number of teachers during a relatively short period we needed a network of trainers and a lot of computer classes. We were lucky and found trainers and schools with computer classes in all counties. During the year, 3,818 teachers participated in Tiger Leap's 40-hour computer basic training free of charge. I also supported teacher participation in training at Tartu University, Tallinn Pedagogical University and Tallinn Technical University. When I found out that many information technology teachers had not taken professional training, I supported teacher participation in a vocational training course for information technology teachers at Tartu University. With my help, 25 persons completed the primary course in 1997 and in the autumn 50 more subject teachers started information technology studies as an additional secondary subject.

*First open access to
the Internet opened in the
National Library*

*Hansapank introduces
Internet banking facility*

TEACHER TRAINING GAINS GROUND

An important aim for my first working year was to gather information about the available and most popular electronic courseware in the world, and to explore ways of translating what existed while at the same time organising the development of Estonian language software. In addition, I had to keep the teachers informed and develop methodical instructions if necessary. First I called a tender for purchasing electronic courseware that did not need translation and selected an English language study programme Euro Plus+ and a tool for writing math and science called MathSoft Study Works for Schools. We were frugal and bought only as many programmes as we predicted there were potential users for them. County coordinators helped select the schools that most needed the programmes and delivered them.

ELECTRONIC COURSEWARE

This year I gave my modest contribution to a campaign „More Estonian Pages on the Internet!“ We also started developing the programmes „Estonian Vertebrates“, „Estonian Geography CD“, „Estonian Literature in Text 1917-1928“, „Estonian Language Handbook on the Internet“, etc.

I ASKED FOR TEACHERS’ OPINIONS AND SUPPORTED EDUCATIONAL PROJECTS

As a smart and sensitive animal, I wanted to get immediate feedback about our activities and objectives from Tiger Leap’s important target group – the teachers. Again we got help from Marju Lauristin whose public relations students found out our teachers’ level of knowledge and expectations in connection with the Tiger Leap Programme and their experience of information technology. The sample size was 50 schools from 12 counties and Tallinn. We learned that teachers liked me alright, but they wanted me to bring more computers to their subject classes. They mentioned that, „It would make their work easier and more interesting“. Though they

worried about language culture and diminishing human relationships, the teachers found much that was positive in gains of international experience, the level increase of information and education, and the assimilation of urban and rural schools. I kept that in mind when we started to make plans for the next year.

In 1997, I discovered two good projects to support. First was a nature project called “Hello Spring”, which integrated ordinary teaching methods, research and project work, nature observations and information technology. In the following year this project had already become international. The other one was a research project called GLOBE, which united children, teachers and scientists from 60 countries in order to study environmental problems and acquire a more profound knowledge of the natural sciences and mathematics. The U.S. Embassy helped us to support the GLOBE Project, as one of the project initiators was U.S. Vice President Al Gore.

1998



Meetings with teachers, school leaders and educational staff in all counties helped me realise that difficulties connected to ICT use in Estonian schools resulted not only from a lack of vision of future society, but also from a shortage of money, electronic courseware and teacher skills. I had a vision; I saw where Estonian schools could develop. School should be a place provided with excellent possibilities for a child's diverse creative development. Globalisation and information technology influence creating these possibilities more than we can imagine. In a modern school, the directors should use various information system options in management, teachers could get information for educational work and advanced training, and interactive educational materials would make subject classes more interesting to the students and develop their skills of analysis and discussion. These had already been my thoughts last year, but this year I saw things really changing. Teachers who had completed Tiger Leap basic computer training courses last year started to help colleagues prepare educational materials with the help of computers. A vision for the development of Estonia was needed. Perhaps it was me who began this snowball rolling down the hill, but a survey called "Estonian Tiger Leap into the 21st Century" was conducted as an initiative funded by the UNO Human Development Programme. On the basis of that research, it was concluded that expansion of the Tiger Leap idea to other fields could be the vision for the next years in Estonia. This proposal was made public and sent to the Government of Estonia.

INFORMATION TECHNOLOGY AND INTERNET CONNECTIONS „EXPERIENCE ENCOURAGES“

I am a courageous animal and nothing had scared me so far. I knew that there were other brave ones, too, like local governments who daringly supported the Tiger Leap Programme. Successful experience from tenders encouraged them to significantly increase investments in school

computers in 1998. But no longer were all schools provided with similar technology; each school was different and their needs were different. I took that into account when we started to make plans for the next year.

I witnessed the children's delight with the computers, but I also noticed that teachers could no longer use the computers in the classes. In cooperation with Hansa Leasing Company and Baltic Computer Systems, I helped the most active 546 teachers get a personal computer with a 2-year lease for home use. My work in building Internet connections had reached all the corners of Estonia.

ELECTRONIC COURSEWARE

I bought the Encarta World Atlas and Encarta 99 Deluxe for every school. Both programmes had distinguished contents and technical implementation, and could be used in various subject classes – geography, history, home study, natural sciences, foreign languages, etc. I supported the programmes „Estonian History”, „Estonian Literature” and „Estonian Plants”. The best creators of a school homepage from Tartu Miina Härma Gymnasium were sent to the London Educational Technology Show BETT`99. I must admit, I ran out of steam this year. I managed to arrange almost 100 electronic courseware introductions all over Estonia.

TEACHER TRAINING

I continued basic computer training for subject teachers and also supported teacher participation in more advanced courses organised by universities and various companies including: computer use in biology, chemistry and math classes; tests of knowledge on computers; and computer use in economy studies. I managed to support more than 300 teachers who took part in these trainings. Problems started to occur with computer networks in schools. The more computer classes we built the bigger the need for system administrators. I hurried to help them and supported about 100 system administrators in training at Tartu University and ICT training company IT Koolitus. A slight doubt started to creep into my heart. Will they continue to work in schools after their studies or will they start looking for more profitable jobs? In spring, I took the most active and innovative teachers to the computer fair where they gave workshops for subject teachers. In autumn, we shared teachers' and school leaders' experiences of ICT use in educational work at the PHARE ISE conference *Telemaatika`98*.

*Google opens their first
office in California*

Apple releases iMac

Release of Windows 98

An important task is to introduce the idea of an information society. The first experience „On the Internet on Sunday with the Tiger” was successful. Therefore, I decided to take a longer tour. Linnar Viik, Peeter Marvet and Meelis Muhu, and hundreds of little student-tigers and computer companies helped me to organise this. The journey began just before the start of the school year and we managed to tour in half of the Estonian counties. We installed big tents provided with computers with Internet connections in the county centres, gave lectures, organised competitions, and created virtual newspapers. Everybody could get acquainted with the opportunities offered by information technology and listen to the lectures of wise men. This year, I also organised my first annual conference for school professionals. Presentations made by local and foreign speakers discussed information societies and the importance of the role of the educational system in developing them.

TWO NEW INNOVATIONS — TIGER TOUR AND AN ANNUAL CONFERENCE

*Ericsson, IBM, Intel,
Motorola, Nokia and
Toshiba establish Bluetooth
Consortium for system
development*

*Parliament approves main
principles of Estonian
information policy*

1999



It was time to change the funding principles of school ICT infrastructure and to give the freedom of decision to the schools. These local governments whose priority it was to expand school computer systems, received financial support from me equal to what they could invest themselves. Tiger Leap workgroups, in cooperation with local colleagues, decided on the spot what kind of information technology to buy and from whom to buy it.

Compared to some developed European countries the computer classes in Estonian schools were more modern and of better quality. But information technology develops fast and many computer classes still needed updating or replacement. I could not forget about the teachers and so I organised the project competition „Computer in the Teachers’ Room” to encourage using modern technology. 159 teachers received multimedia computers for their use.

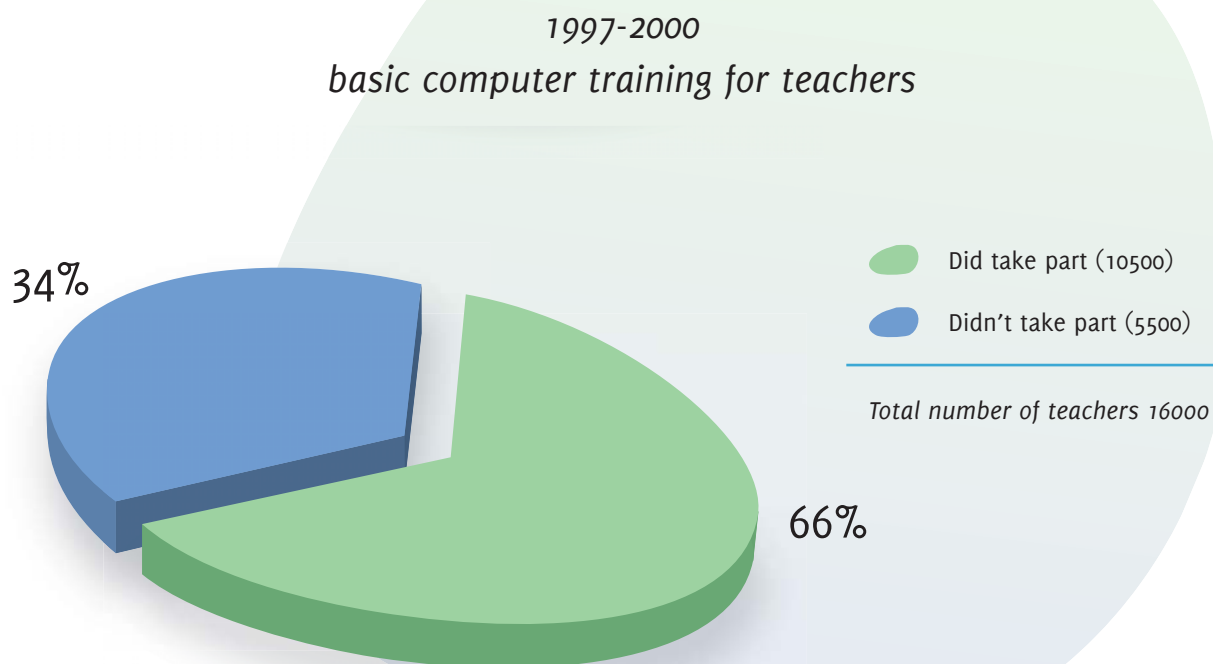
INFORMATION TECHNOLOGY AND INTERNET CONNECTIONS

ELECTRONIC COURSEWARE

It is my understanding that good electronic courseware makes teaching more interesting for teachers and learning easier and more fascinating for students. MathSoft StudyWorks and the programme to teach physics, Open Physics, are such programmes. We discussed possibilities for creating teacher networks with Mart Laanpere and came to the conclusion that Teachers’ Net Gate could be a virtual meeting place for teachers to find and share information and educational materials. It was a great idea, so the Teachers’ Net Gate web environment was founded.

TEACHER TRAINING

Although more than half of the teachers in Estonia had attended basic computer training during the three years of Tiger Leap activity, to my big disappointment, most of them did not use the opportunities that information technology offers in their subject classes. The teacher-training curriculum at universities did not bring me much joy either and the in-service training system was slow to develop. I took the upper hand and organised 100 training projects, which trained subject teachers to use and evaluate electronic courseware, search for information on the Internet and improve skills in the preparation of educational materials.



THREE KEY EVENTS

The Tiger Tour from the previous summer brought interested people together and so I wanted to repeat my tour. This year's event „Internet Makes Possible” took place in eight counties of Estonia. I was extremely proud because the opening words were given by the Patron of my tour, President Lennart Meri, via a video conference. In addition to traditional activities, it was our first time organising a strategy seminar with the aim of introducing information technology based management strategies to the leaders of companies and local governments. The fact that the Tiger Tour won an “Oscar Prize” at international „The Global Bangemann Challenge” in the category of „Equal Opportunities in Using the Internet” gave evidence of the uniqueness and broad attention of the Tiger Tour.

My second annual conference was held for 200 participants. I went to Viljandi and organised a conference with the subheading “Tiger Leap – Information Highway or a Dead-end?” In his presentation, the general leader of Tiger Leap, Jaak Aaviksoo, highlighted that the aim of Tiger Leap was not only to provide schools with computers, but to reshape the entire state and society. Tiger Leap had to leave the confines of the schoolhouse walls and encompass the whole public sector.

*Student Shawn Fanning
discovers Napster*

*Computer virus Melissa
creates extensive damage*

DELFI.ee starts work

*SEB Ühispank introduces
Internet banking facility U-Net*

2000



I LOOKED BACK AND FORTH

In 1997 when I started with the Tiger Leap Programme, I set clear targets for the end of the century: computers into the schools; schools connected to the Internet network; necessary software into the computers; and user skills for the teachers. Lots of people had contributed time and energy towards those targets by 2000, but remarkably with less money than in other European countries. The approaching turn of the century gave reason to produce a summary and the results were: out of 16,000 Estonian teachers, 10,900 had participated in basic computer training with my help; I had provided schools with 61 different electronic courseware programmes and among, them 39 were in the Estonian language; I supported 172 development and training projects; and joint funding for computer procurement with local governments had started effectively. I had to begin planning further activities. I respect systematic work, so I ordered the first capacious survey “Tiger Under the Magnifying Glass” to evaluate the influence of information technology on the learning process at general education schools. I invited Anu Toots to lead the research team. Exaggerated computer use affects children’s health. I informed all schools about that by distributing our leaflet „Working Conditions in Computer Classes and Health Research on Children” so that teachers could take that into account. With the help of specialists, I had already started work with a new development programme „Tiger Leap Plus” and I presented my new principles at the annual conference in Pärnu, „Tiger Leap – Expectations and Reality”. It seemed that most participants got the message that the focus was changing; the computer is only the means and not the objective.

By 2000, I managed to get computers into every Estonian school. 75% of all schools had online Internet connections and the others could use a dial-up option. This means that for the first time, all Estonian schools had a cable connection to the world. This moment gave me the opportunity to move to the next Tiger Leap Programme phase, to provide ICT competency to all students and teachers.

INFORMATION TECHNOLOGY AND INTERNET CONNECTIONS

By bringing computers and the Internet to school, I had broadened the definition of the learning environment and educational work had moved partly from the classroom and textbooks to outside of the school and also to the virtual environment. Besides traditional learning, project and active learning methods had become important, methods like those used by Tago Sarapuu in his natural environment simulation game „Tiger Trip to Estonia“. I continued my support of Estonia-based materials, starting work with programmes “Estonian Music” and “Berta”, an interactive folk calendar. We created a programme for health studies called “Youngsters and Drug Addiction”. On the basis of an APS Test, teachers could test knowledge by making electronic tests in biology and math for primary school and higher grades.

ELECTRONIC COURSEWARE

Parliament approves Digital Signatures Act

Intel releases the 1.8 GHz Pentium 4 Processor.

e-Taxation Board introduced in Estonia

282,000 Internet users in Estonia

*Website visits top list: Neti catalogue with 1.7 million visits,
free e-mail server mail.ee with 1.69 million visits and portal
Delfi with 1.25 million visits*

PlayStation 2 enters the market

ICT FOR THE DEVELOPMENT OF STUDENTS WITH SPECIAL NEEDS

Education must be available to all children, but tools and methods for curriculum may differ. ICT tools have a key importance in the development of children with special needs. I called on the International Rotary Club to help us, and we began a new project. We bought special educational materials and ICT tools for the support centre and trained teachers and pedagogues. In selecting software, I preferred animation and included games and materials for minimum contact with foreign languages. It seems to me that I managed to help quite a lot of children with this project and via in-service training, showed their teachers which opportunities information technology can offer in their complicated work.

Computer-based basic training time for many teachers was finished and lot of them turned to me and requested advanced training. I established the Tiger Leap Computer School where teachers with computer skills started to teach others. The best teacher for a teacher is another teacher. About 900 teachers took part in the courses during this year. They studied electronic courseware programme use in educational work, compiled lesson plans and work sheets and improved subject methodology. Most importantly – the majority of the course participants left a mark on the Internet – educational materials made by them.

TEACHER TRAINING

2001



*First Estonians receive
ID cards*

TIGER LEAP PLUS 2001-2005 „GOING INTO THE COMPUTER”

The year began with great expectations. Our government approved the Tiger Leap Plus development plan and so the next phase could start. Not computers, but teacher motivation and skills using information technology keep a school up-to-date. In the Tiger Leap Plus development plan, I set myself the target to raise ICT competencies among students, teachers and educational staff. The main activities included the creation of electronic educational materials, in-service training and support of teacher cooperation and exchange of experiences. School computers needed updating, too. Even the biggest tiger could not do this job alone. Again I got help from the local governments, schools, parents and several organisations. More importantly, it also seemed that all political parties understood the importance of my activity and tried to support it. National curriculum that was introduced in autumn and described in detail the ICT competencies which were expected from primary school and gymnasium graduates, added courage and support to realise the development plan, not to mention the fact that my activities had been noticed and recognised internationally.

Four major project competitions helped me make a huge leap ahead and arouse enthusiasm in subject teachers for the use of ICT in their educational work. Teachers' rooms in 279 schools received a new computer and 38 schools received computer projectors. Competitions like "Lesson-plan Compilation" and "Computers in the Subject Classroom" gave teachers an opportunity to compile lesson-plans that integrated the use of ICT tools and electronic courseware. As a result of the competitions, 167 subject teachers received a multimedia computer for their personal use. The student councils of 50 schools were given computers, as well.

**INFORMATION
TECHNOLOGY
AND INTERNET
CONNECTIONS**

TEACHER TRAINING

I discovered that Intel Corporation, in cooperation with universities and teachers, had developed a 40-hour training course called “Computers at School” that was similar to the training our teachers needed. I called Intel for help; we adjusted the curriculum for Estonian circumstances and started a new training course in Estonia. The training included the creation of educational materials and web pages, the use of Internet resources and electronic courseware, and standard software including e-mail opportunities and ICT administration. Good news came this year and from March 2001, school leaders could include ICT competency in teacher grade policy.

I helped my good partners to create the software programmes Spirograaf, Murdeplaat, etc. and the Kunstikeskus.ee Internet environment became much prettier thanks to my help. Teachers were eager to use APS Tests and the list of tests was supplemented in math, natural sciences, geography and Estonian language. It was a perfect time to create a virtual learning environment for teachers in Estonia and the initiative to do so was taken by Hans Põldoja. It was my pleasure to help him. The learning environment was called VIKO.

Microsoft releases Internet Explorer 6 with Windows XP

Wikipedia is founded

iPod enters the market

ELECTRONIC COURSEWARE

For years, I had observed when and how teachers use Teachers' Net Gate and had discovered that teachers did not feel comfortable there. I called Sten Tamkivi for help and we converted Net Gate into Koolielu, a capacious educational portal and a meeting place for teachers and school leaders and also for students and their parents. Koolielu gives a good overview of news in education and culture, gives opportunity to exchange ideas and ask for advice from colleagues, shares good ideas and finds information about training or job offers, etc. Koolielu provides a variety of educational materials selected by subject, useful links and electronic courseware information.

TEACHERS' NET GATE BECOMES KOOLIELU (SCHOOL LIFE)

TIGER LEAP INTERNATIONAL CONFERENCE "CHALLENGES AND OPPORTUNITIES"

To celebrate my fifth birthday, I invited friends from Australia, Finland, Lithuania, Denmark and Russia to organise a conference called „Challenges and Opportunities“. We discussed whether the arrival of ICT at schools had improved the quality of teaching and learning or had made the teacher's life more complicated, and the differences and similarities in our Tiger Leap Programme and analogical programmes across the ocean. We came to the conclusion that we have a lot in common. Therefore, we should exchange experience more often to avoid mistakes and learn from the best practice

*The average of 9.8 billion
e-mails sent daily*

2002



This year, I continued my support of school leaders on the basis of co-financing. I remembered that the needs of schools were different through all these years. In some schools, all of the computer class equipment was replaced. Some schools received computers for teachers, or projectors and printers. Some schools improved computers with additional equipment, extra memory and programmes, replaced monitors and improved networks. School libraries were my special priority. In my vision, a school library should be this modern learning and information centre where information technology plays an important role. Therefore, I organised a competition “Computers for School Libraries”. As a result, 136 schools received multimedia computers and special library software. I made new friends from the Vocational Training Association. In order to diversify vocational training I helped them to arrange a competition at the vocational schools so that the winners could get computers and software. In a year, I made a big leap in school Internet connections and we witnessed growth from 63% to 90%. A new problem occurred, however, and Internet viruses attacked our school networks. In spite of my self-denying activity, it seemed that changes were not fast enough in general education. I called in scientists from Tartu University and Tallinn Pedagogical University for help in conducting a survey “ICT and Estonian School Culture” to find out what hinders the integration of new technologies tutorial work.

**INFORMATION
TECHNOLOGY
AND INTERNET
CONNECTIONS
„VIRUSES ATTACK
COMPUTERS”**

TEACHER TRAINING

The training project “Computers at School” was a boost. The first feedback showed that teacher readiness to use ICT had already significantly grown during the training process. I continued to support the in-service training of information technology teachers and school network system administrators as the need for qualified computer support at schools was constantly increasing. With my help, more than 150 teachers participated in vocational courses for information technology teachers. The Tiger Leap Computer School continued its work.

I have often heard people asked to name a good book or car! I asked the same question regarding electronic courseware and got the wise answer that electronic courseware has to be didactically correct and of benefit to the age group. It's a nice answer, but because of it, a wider range of specialists from different fields had to be attracted to the production work of electronic courseware. A traffic game “Across the Town” met this criteria and I supported all of the schools so that they could receive this electronic courseware. The game can be used as support material in traffic study. My friend Leo, the Lion from the Estonian Police, examined the game from a specialist's point of view and approved it. I checked my reserves and discovered that since 1997, more than 100 different original electronic courseware titles, translated and of foreign language origin, have reached the schools. Again, it was time for a survey so I asked specialists from Tartu University to find out user frequency and general expectations of the materials.

ELECTRONIC COURSEWARE

**TIGER LEAP ANNUAL
CONFERENCE
„COMPUTER STUDY
AT SCHOOL — TOOL
OR OBJECTIVE?“**

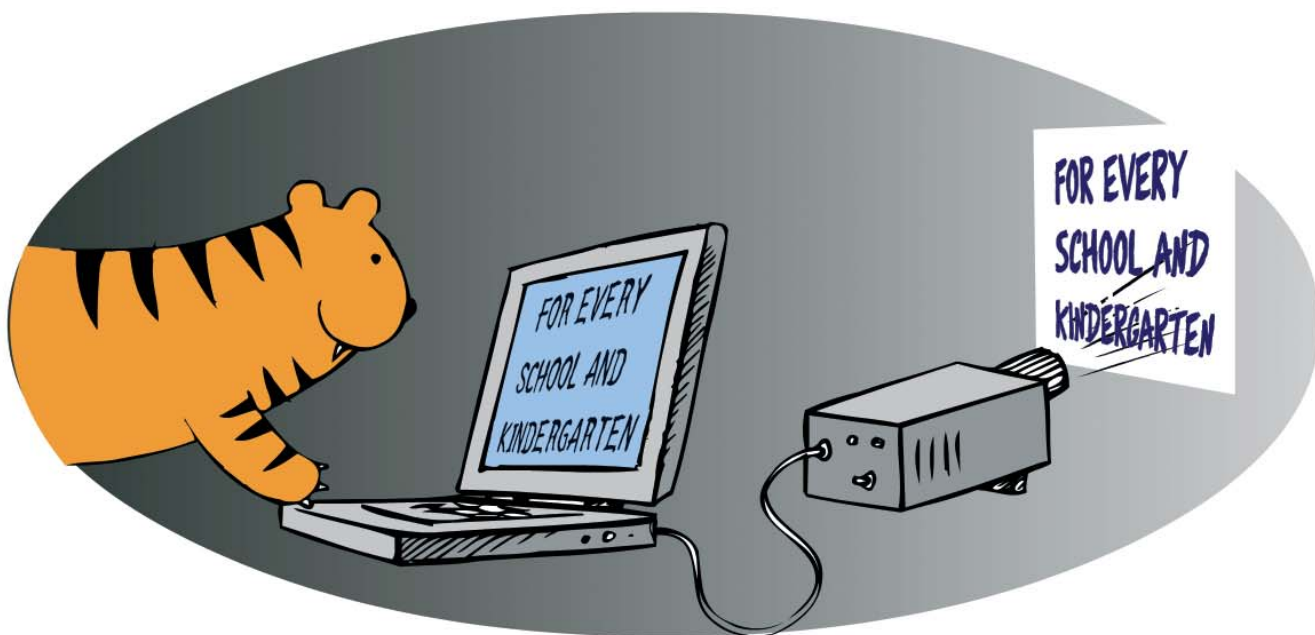
This year, I asked the British Council, who supported the participation of British teachers and experts in the conference, to help organise it. During the two-day conference, it was possible to compare how Estonian and British teachers use modern technology in their tutorial work, what it was possible to achieve using it and what the biggest obstacles were in its use. Proposals to improve the situation were brought out in the final thesis of the conference. To mention a few, included were: that methodology and didactics of modern ICT tools must be included in all teacher training curricula; standards of teacher educational technology competencies and rules of implementation must be developed; and electronic courseware and educational materials available on the Internet and approved by specialists must get the same status as textbooks, exercise books and other learning objects. I sent these proposals to all of the participants for their information.

7 different WiFi-areas in Estonia

*10 years ago the first SMS was
sent by mobile phone*

*Hewlett-Packard (HP) Compaq
enters the markets*

2003



INFORMATION TECHNOLOGY AND INTERNET CONNECTIONS

I collected data to find out what possibilities exist for schools to conduct computer studies within the National Curriculum and the Tiger Plus development plan. On the basis of the information received, I called for the procurement of computers in cooperation with local governments. After this procurement, it was possible to arrange computer studies in all schools.

I also supported the projects „Laptop + Projector for the School” and „Computers for Kindergarten Teachers”. In the first project, I saw an opportunity to motivate teachers to use ICT tools in their tutorial work. I set the terms for receiving a laptop and computer projector, that at least three subject teachers had to be ready to teach an open lesson using ICT tools and then share their experience with other teachers. The other project resulted from the need to diversify tutorial work with children at the age of 5-7 years. The terms set a demand that at least two teachers had to have participated in the „Computer at School” courses. We got the computer for the kindergartens with software that is meant to develop small children.

TEACHER TRAINING

I continued training school information technology specialists in different fields and at different levels, but we had to continue with new projects. At the beginning of the year, I offered support to those schools and professional associations who agreed to conduct ICT trainings among their teachers according to their needs and request.

The Board of Informatics from the National Examination and Qualification Centre helped to evaluate ICT competencies of the students. They developed tests to determine standards and evaluation principles, which were tested experimentally on 9th graders from 60 schools for a total of 1,123 students.

ELECTRONIC COURSEWARE

After a year, I received the results of the electronic courseware survey. I was excited. It turned out that teachers used computers in preparing classroom materials but not in the classroom. I also found out that there was some problem with communication within the school and that the majority of informatics and subject teachers were not aware of the software and programmes in their subjects that I had allocated to the schools. In addition, the survey brought out that the most popular use of electronic courseware was in subject classes where 9th grade biology teachers, and 12th grade biology and geography teachers gave ICT-based homework. The students could actually participate in different natural science and mathematics projects because other subject teachers preferred traditional methods. I kept that in mind and set a new target which was ICT-based subject methodology training in the future.

In 2003, the list of software created was supplemented by such materials as learning environments “Young Naturalist”, “T-Algebra”, “Folk Culture”, “Research Learning Models in Primary School Natural Sciences Study”, etc. The schools of some counties received a CD-version of “Estonia”, which was first published as a book in 1920-1940, because we need to know our cultural history.

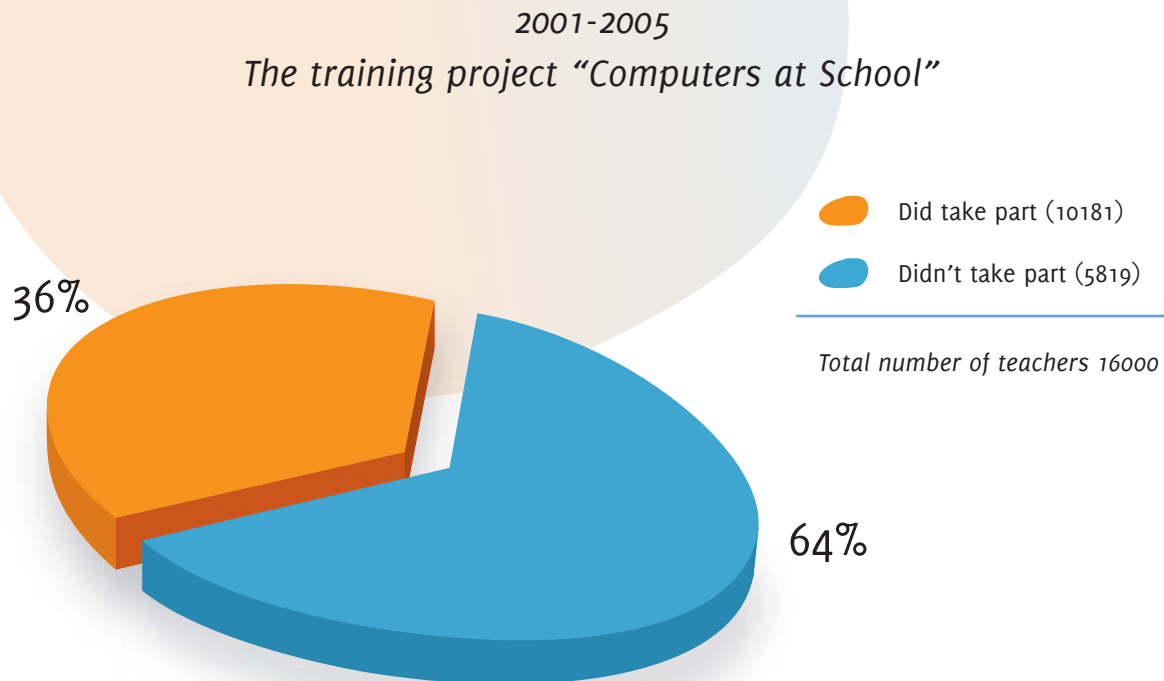
Skype is founded

Webcam celebrates 10th anniversary

Blogging gains popularity

I named the conference after the survey we implemented last year, and we analysed the survey results with education specialists at Pühajärve. During the survey results discussion, it was concluded that there were several obstacles to overcome if we wanted to bring ICT to schools. Problems in the organisation of the study resulted from the lack of skills of the school management in organising schoolwork. My vision saw a contradiction in the objectives, curriculum and demands of the national exam in the general part of the National Curriculum, as they do not support the use electronic courseware and information technology by subject teachers in the classroom. I collected viewpoints from the conference and sent my proposals by mail to the Ministry of Education and Science, universities, teachers professional associations and the School Leaders Association.

THE ANNUAL CONFERENCE „ICT AND SCHOOL CULTURE”



2004



Seven years had passed from the beginning of my work and during these years, information technology had developed greatly. Computer projectors had become natural tools and Smart Board interactive boards had entered the classroom. In Tartu Emajõe School for visually disabled children, I created a techno park for designing educational materials for visually disabled children. Mait Laas, together with the Children's Puppet Film Studio, helped me to train mother tongue, arts and crafts, and computer teachers so that children could start making animated films. I provided 50% of the necessary sum to buy digital cameras. Instead of resting on my laurels, I joined an international survey called SITES 2006 to learn about the effect of information technology on tutorial work and what the position of Estonia was among the other 20 countries participating in this survey.

INFORMATION TECHNOLOGY AND INTERNET CONNECTION „NOT JUST COMPUTERS”

TEACHER TRAINING

Estonia's school network covers the whole country. There are elementary schools and primary schools, big schools and small schools, and schools in urban and rural areas. All teachers need equally good training opportunities. My first priority was to take training as close to the teachers as possible, to the school where they work or to the same county. During the years, I had attracted more than 50 helpers from the counties. I asked Mikk Rand to help and we arranged film workshops with the Kinobuss. During the courses called DigiDidactics, teachers obtained ICT-based didactical and methodological skills. Web-based subject classes in Estonian language environments IVA and VIKO were introduced by the specialists from the Educational Technology Centre of Tallinn Pedagogical University.

ELECTRONIC COURSEWARE

Elementary school teachers have always been my good friends and helpers. The teachers from Haapsalu College of Tallinn University designed Estonian language teaching software for the first and second grades. I liked their ideas a lot. They took the children on a virtual trip from one planet to another and called the game “Stars in the Sky”. The children were already familiar with simulation games and discovering nature with the help of games. I helped the Junior Achievement Development Fund, which programmed a virtual environment for practicing student enterprising knowledge. Via the Internet, a computer game called “Extinguisher”, which introduced fire safety, became available to everybody.

54% computer users and 49% Internet users among Estonian adult population

*Mozilla Firefox 1.0 is released
— the biggest competitor to Microsoft Internet Explorer aside from Netscape Navigator*

First digital camera Apple QuickTake 100 celebrates 10th anniversary

TIGER GOES TO EUROPE

To my country and me, the year 2004 was very important because Estonia became a member of the European Union. This meant many new friends, projects, experience and traveling. Our first experience was already gained the previous year when 13 schools from Estonia took part in the European Spring Day. This was an initiative of the European Schoolnet and this pedagogical project was dedicated to topics concerning the European Union. Computers and the Internet were the daily tools of Estonian schools and teachers in 2004. Therefore, joining with Partner Schools in Europe/e-Twinning was very smooth. The project enabled teachers to communicate in a virtual multilingual environment, to exchange pedagogical experience and create educational materials.

It was time to evaluate the deeds done and come to some conclusions. The survey "Tiger Under the Magnifying Glass 2" concentrated on trends and changes in computer use and tried to discover factors that help or hinder information technological innovation in education. We learned that teacher access to the Internet had developed faster than the children's, the number of e-mail users and user frequency had increased, computer use had diversified tutorial work and the computer skills of the teachers had significantly improved. Bringing computers into the subject class was still problematic, but this was connected to internal school problems in organising study and the National Curriculum.

2000-2004, I WAS UNDER THE MAGNIFYING GLASS

2005



The work plan that smart people had drawn up for me for the past 5 years was mostly fulfilled. The summary in numbers was the following: 75% of Estonia's teachers had participated in the ICT advanced training "Computer at School"; national experimental tests for determining standards in information technology proved that more than 90% of our learners had acquired the expected ICT competencies; about 100 different electronic courseware titles had been delivered to schools; and 50% of our teachers had used educational portals in order to obtain educational information and materials. The results were good, but I was not totally satisfied. I saw a need for an advanced strategy to make ICT a natural part of school life as a tool, not as an objective.

TIGER LEAP PLUS DELIVERS THE BATON TO THE LEARNING TIGER

INFORMATION TECHNOLOGY AND INTERNET CONNECTION

At the beginning of the year, students and teachers were provided with a sufficient number of computers and all schools had online Internet connections.

I wanted to deliver an experience of success to the students and promote the feeling that they are able to achieve something practical. Vocational and technology studies fit this purpose well.

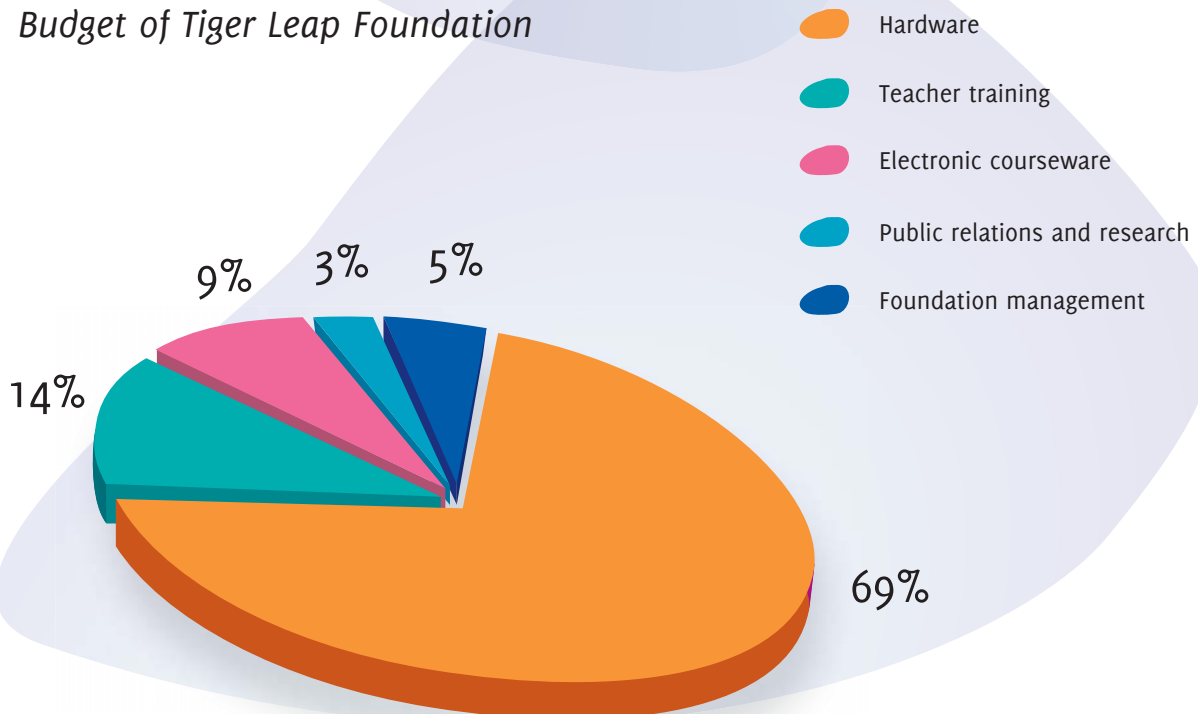
I called for a public procurement and provided at least one school in bigger counties and towns with a CNC milling machine and design software that enables the design of three-dimensional objects.

The importance of Internet access in some areas is many times higher than in bigger towns, for example, the Island of Ruhnu, which in winter can be accessed only by plane and in summertime by a long trip across the sea. Despite the long distance, there is a primary school with 12 students there. In order to bring these students and island inhabitants closer to the world, I gave the school 5 computers provided with software and a printer.

TEACHER TRAINING

I checked the feedback of training from previous years, held discussions with teachers and trainers and came to the conclusion that it was time to develop a new in-service training curriculum for teachers. Teachers thought that learning from each other and exchanging experiences gave the best results, in other words, activities from one practitioner to another. Training had to be of equally high quality and available in all counties. 23 subject teachers who had taken basic adult training courses among other training, started activity within the Tiger Leap county training centre network. I called 25 schools from all over Estonia into action, providing them with interactive boards, projectors and computers and we agreed that they would form the county training centre network for the next three years. Verve was given to school leader ICT training as well, because too often it depends on the attitude of the school leader how innovative the school becomes and how purposeful the use of technology is.

Budget of Tiger Leap Foundation



ELECTRONIC COURSEWARE

For two years, I had brought Kidspiration/Inspiration software into Estonian schools. These two programmes are very special because they support the essential, or how to learn, and they help users remember the material learned via connections and nomothetics, and imagine figuratively.

Project “Ampser” (Biter) proved that with the help of a computer and the Internet, it is possible to learn healthy nutrition.

Didacts of natural sciences at Tartu University started to design the capacious e-Learning material „Models in the Study of Biology”, and to the great delight of people interested in pedagogical history, we launched a thorough web page about the biography and oeuvre of Johannes Käis, my guiding light. This year I also started to take a deeper look into the field of learning objects.

Since 2005, I have represented Estonia at European Schoolnet as a go-between and collaboration partner in several education innovation projects. Via EUN, I receive additional information and resources for implementing innovative projects.

I bring together teachers from Estonia and Europe and share my own experiences. It seems that my experiences are valuable because I have been invited to participate in many European Commission and international project work groups.

I WAS TRUSTED TO REPRESENT ESTONIA IN EUROPE

YouTube.com is founded

*World of Warcraft, The Sims 2 and
Roller Coaster Tycoon 3 top the list
of best-selling computer games*

*The number of Internet users grows
to 1 billion*

2006



I named the new development plan Learning Tiger 2006-2009. My objective was to develop a web-based learning management system and make it available to schools. This would provide digital educational materials through the learning objects repository and exchange platforms. I also wanted to distribute innovative e-Learning services, organise web-based educational projects and competitions between schools, support teachers' Virtual Practice Communities, and above all, make e-Learning a natural part of daily tutorial work, curricula and teacher development training

LEARNING TIGER

2006-2009

INFORMATION TECHNOLOGY AND INTERNET CONNECTIONS

Since 2006, I have started to renew school ICT tools through project competitions. These competitions are directly targeted at general education schools that already actively use technology, electronic courseware and knowledge acquired with the help of the Tiger Leap Programme, have a vision of the future of their school and understand the development of a learning organisation. I assume that at least 2/3s of our teachers have attended ICT methodology training, and that teachers and students participate in local and international projects that include information technology as a means of communication. Schools can apply for funds to update their ICT infrastructure upon need if the school leader or local government invests an equal amount.

*100 million web pages
in the world*

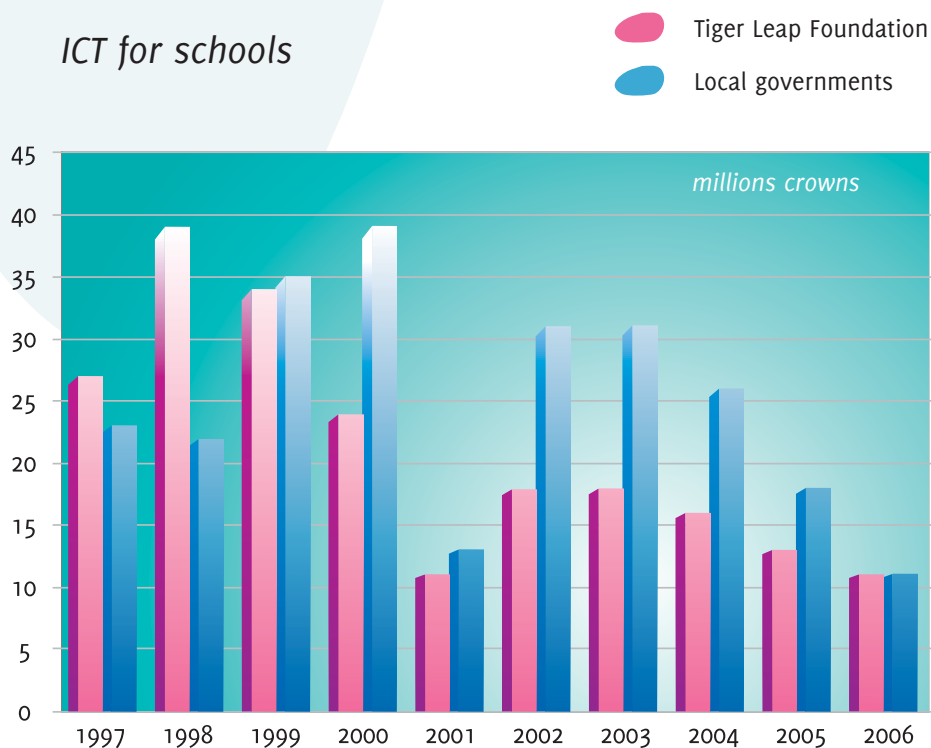
*61% of Estonians (age 15-74) are
computer users*

USB celebrates 10th anniversary

TEACHER TRAINING

I have started four new teacher training projects – DigiTiger, Project Kit, TechnoTiger and AnimaTiger. DigiTiger and Project Kit are directed at all teachers and the courses include active learning methods integrated with information technology. As the name describes, Project Kit is focused mainly on project learning utilisation. DigiTiger provides information about e-Learning environments including e-portfolio, new media, etc. TechnoTiger follows the example of a popular subject in Finland, Great Britain and many other countries – design and technology where students have to express creativity and then realise it in practice. The students can use computer and design software and special computer directed milling machines. The training, called AnimaTiger, has been proved successful resulting in numerous participants for the student animation film competition TAGURPIDI.

ICT for schools



ELECTRONIC COURSEWARE

Looking back to the year of my birth, I can see clearly how the definition of electronic courseware has changed over the years. Capacious CDs have been replaced by learning environments where teachers can deposit educational materials that they have made. Educational material can consist of several small learning objects. Teachers in Estonia and other countries have produced numerous digital learning materials that could be used by other teachers if the materials are collected into one user-friendly, colleague-to-colleague exchange environment. The pan-European three-year long development project Calibrate has started to create and test this kind of environment and I am participating in this project, as well. I see the future in joining our learning objects repository with a colleague-to-colleague exchange environment and European analogue environments that will enable the finding of necessary educational materials very easily. Publishing materials in the learning objects repository does not mean an end to our work. Existing e-educational materials do not cover the needs of all subjects. Therefore, I am planning to organise several competitions in the future.

During the previous years, I have supported schools for students with special needs providing ICT tools and English language software. The number of special educational materials in Estonian is small, so to improve the situation I have arranged a methodical educational materials competition called „Tähesõber”.

With the help of my Catalan friends, a web-based computer algebra system Wiris will be available to all schools in 2007. Local friends continue successful work, as well. The Estonian Physics Society took the initiative to record all experiments on video and it is now available on the Internet.

But the list is much longer! As I mentioned in the beginning, the development of technology is fast and very possibly we will soon be able to use mobile phones and GPS-equipment in educational work, too. Along with other European countries, I am participating in a research project called eMaps.com, which is trying to find the answer to this question. We have already tested it in the Rocca-al-Mare open-air museum on students and teachers, which the children liked. We managed to integrate geography, history, art and music studies, and information technology was in the right place — as a tool, not as an objective.



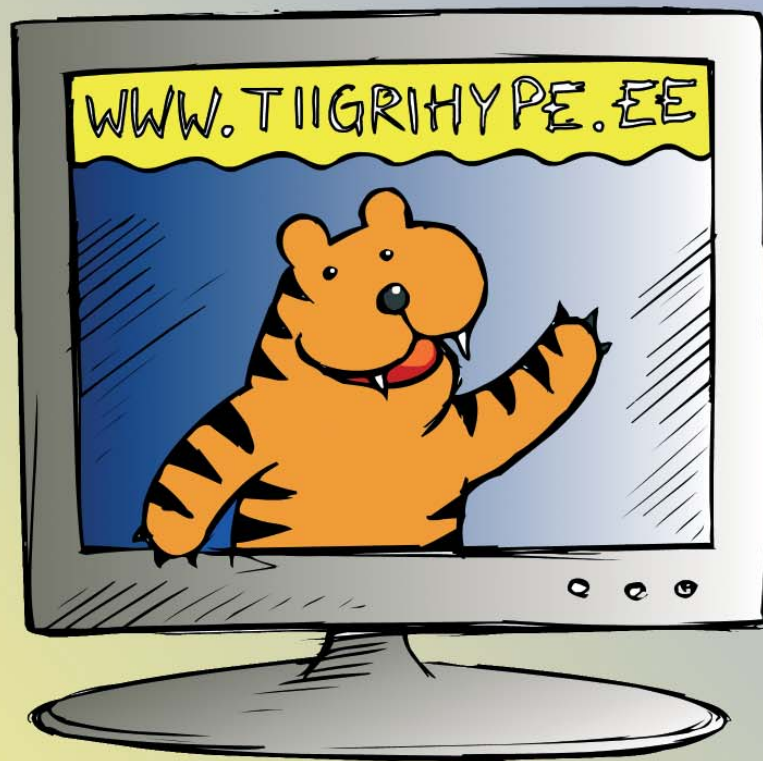
Dear Friend!

As you have probably already noticed, all of the above-mentioned is only a part of this leap that we have made during the 10 years together with the originators of our foundation, members of the board, experts, trainers and other hundreds of friends. I have tried to highlight the essentials, show how fast the change in the development of technology has been, how we have tried to keep pace with this development and update Estonian schools. Perhaps we cannot see or measure the changes clearly yet, but as the Tiger, I think I have acted reasonably and I shall leave the final evaluations to future generations.

See you on the web!

Yours,
Tiger

www.tiigrihype.ee



Tiger Leap Foundation
Tallinn
2007