

Systems Built on Trust

COSN DELEGATION TO NORWAY AND FINLAND
SEPTEMBER 23-OCTOBER 1, 2018



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SYSTEMS BUILT ON TRUST

COSN DELEGATION TO NORWAY AND FINLAND | SEPTEMBER 23–OCTOBER 1, 2018

The Consortium for School Networking (CoSN) is committed to advancing a global dialogue focused on the strategic uses of technology for the improvement of teaching and learning in elementary and secondary schools. As part of this commitment, CoSN led delegations to Europe (2002), Australia (2004), Scandinavia (2007), Scotland and the Netherlands (2009), London and Paris (2011), South America (2011), Portugal (2013), Singapore (2015), India (2015), Ireland (2016) and New Zealand (2017). In addition, CoSN convenes a yearly Global Symposium to explore global ICT issues during our Annual Conference.

To continue our international learning, CoSN took a senior level delegation to Norway and Finland from September 23–October 1, 2018. The delegation of school technology administrators and educational experts visited schools and explored innovative education policies and achievements. Thanks to HP for sponsoring the delegation and for the additional support from [3DBear](#).

Why Norway and Finland?

Student academic achievement in Finland ranks high on international surveys like [OECD's Better Life Index](#) and [PISA](#). Norway can also point to

strong student achievement and new measures to enhance future skills and learning development. Both countries have flourishing technology industries highlighting innovation in the private sector.

The delegation wanted to explore the conditions leading to success in both Norway and Finland and understand the implications for U.S. education by seeking answers to the following questions:

- How are Finland and Norway developing and implementing new policies, particularly around curriculum and information and communications technology (ICT), to enhance the learning process?
- What can U.S. education leaders and policymakers learn from colleagues in Finland and Norway to inform decisions in our school systems?
- How do both governments support innovation in the private sector and how do they partner with education?
- How are these countries developing the skills students need to succeed in the 4th Industrial Revolution?

"Norway and Finland are incredible models of how countries are using technology to help modernize learning settings and improve learning. These two Nordic nations provide a roadmap for other educational systems for making a digital leap."

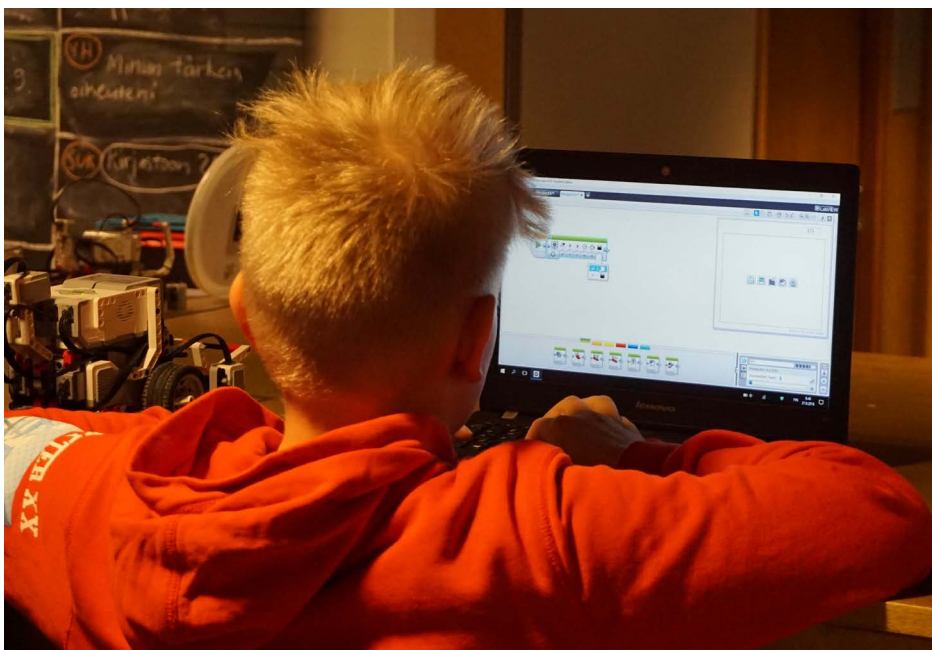
—KEITH KRUEGER, CEO OF COSN



During our travels to Oslo and Helsinki we met with dedicated policymakers, committed private sector leaders and dynamic educators and visited schools that are taking learning to a new level. The agenda afforded rich opportunities for engagement and first hand observations. The [blog posts](#) captured the shared impressions of the delegation

At the end of our visit, we were able to look back on our experiences and identify significant takeaways.

- Return the locus of control to teachers. Teachers in Finland and Norway are responsible for making many decisions about curriculum, assessment, pedagogy, and the management of their school. Research shows that teachers are the greatest point of impact with children. Their effectiveness is exponentially reduced when decisions are moved to the district or the state level, as is often done in the U.S.
- Consider a shift in the use of assessments with more of an emphasis on formative assessment and the use of data in real-time to improve teaching and learning.
- Invest in early childhood preschool for ages 1-4 years old. Students in Finland and Norway start schools with the pre-requisite academic skills because of strong and universal pre-school programs for all. By contrast, U.S. students, especially those from minority, low income, and second language learner environments, start formal school already behind, making it difficult for them to catch up.
- Cultivate the skills and mindsets essential for students to become lifelong learners and succeed in a rapidly changing world. Focus on the importance of collaboration, communication, creativity, critical thinking, and problem solving as a prerequisite for success in the 4th Industrial Revolution.
- Invest in developing student agency that places the responsibility to thrive in the hands of the students.



A System Built on Trust represents the collective insights, thoughts, discoveries and observations of the delegation and identifies important lessons learned for U.S. educators. Trust and equity are foundations of the educational systems in Norway and Finland. The trust extends to all levels, including teachers, students, principals, local and national education leaders, and across all stakeholder groups, especially among teachers, principals and parents. The experiences of these top school systems suggest that three things matter most: getting the right people to become educators; developing them into inspired and effective teachers; and ensuring that the system is able to deliver the best possible learning opportunities and supports for every child.

We hope that the report of the delegation will be a valuable, informative and inspirational resource to North American policymakers and educators as they continue their journey of educational transformation.



Imagine a Place in Which...

- Every child has a constitutional right to a free education in accordance with their ability and special needs, and in which equity is a central premise of the education system.
- Both mothers and fathers receive many months of paid leave when they have a baby, adding up to about a full year of time between the two.
- Free, universal education and care are available to all children from age 1 until they start formal education, with preschool teachers who are well trained to support each child's social, cognitive, linguistic and physical development.
- Teaching is a high-status profession, with every teacher having a master's degree from a rigorous program in a research university that accepts only 10%-15% of those who apply to the teacher education program.
- There are no teacher shortages and 90% of teachers remain in the profession for the duration of their careers.
- Teachers, schools, and local education agencies have autonomy for the curriculum and pedagogy, within very broad guidelines set nationally.
- Teachers are treated as professionals and are expected to work collaboratively with their peers and to foster collaboration among their students. Value-added measures of teacher performance are unheard of and don't make any sense.
- Meals and transportation are provided for all students at no cost to their families; there are no distinctions like free-and-reduced-lunch-eligible made among students.
- Assessment is ongoing and used to guide students learning, without any high-stakes standardized testing until the end of secondary education at age 16.
- Compulsory education ends at age 16 but 90% of students continue their education, choosing either a general education to prepare for college or a vocational pathway to prepare to enter the workforce. Both the general and vocational tracks can lead to Bachelor's and Master's degrees.
- Education is free at all levels, from pre-primary to higher education, all the way through to Doctoral degrees.
- While students spend less time in school and engaged in homework than in most countries, their performance on international comparisons, specifically the PISA assessments, is very high.
- The education system is based on trust and responsibility at all levels, including trust in students to be active and engaged learners.

No need to imagine, just go visit schools and meet with students, teachers, principals, and leaders at the National Agency for Education and in Parliament in Finland, as I had the privilege to do as a member of the CoSN delegation.

—GLENN KLEIMAN

I. EDUCATIONAL CONTEXT

Perhaps as a result of harsh climates and scarce resources, Finland and Norway are countries in which there is a deep sense of community. Traveling through the beautiful country and speaking to teachers, students, administrators and community members leaves one impressed with the way in which the culture values children, families, relationships, and community.

The Nordic culture of community permeates the education system and the structures that support it. The commitment is reflected in the high level of educational investments with a higher percentage of the GDP to fund education and higher per student funding than most other OECD countries.

There is so much for us at each stop to learn. Everyone we meet here is willing to share and listen and wants to learn from us and discuss what they are doing.

—DENISE SHOREY-ATKINSON



FINLAND

Governance

Finland is a largely decentralized education system run by municipalities and schools with the curriculum and governing laws defined centrally. Funding responsibilities are divided between the federal and municipal governments with the federal government assuming about 60 percent of the financial burden of schools and municipal authorities assuming the remaining 40 percent.

The Ministry of Education and Culture oversees all publicly funded education, including the development of the national core curriculum through the [Finnish National Board of Education](#) and the accreditation of teacher training programs. Below the national level, Regional State Administrative Agencies and Centers for Economic Development oversee basic education for grades 1–9. The local

municipal authority appoints principals for six- or seven-year terms, but once appointed, the running of the school and the selection of teachers are left to the principal and staff. For upper secondary education, the Ministry of Education and Culture provides licenses to local authorities, municipal authorities, and registered associations and foundations to establish schools.

Finland's Journey to Reform

Finland began its education reform strategy in the late 1970's with the start of a comprehensive basic education for all initiative. Closely related were teacher education reforms requiring all classroom teachers to have a Master's degree, and reducing the number of teacher education programs to ensure strong preparation in

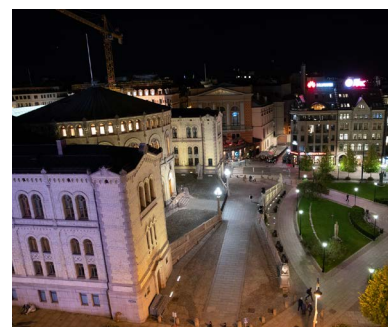
research-based programs. In the early 2000's Finland started to participate in the OECD PISA tests, scoring among the highest in the world. In the 2016 study Finland slipped from the top level rankings to fourth in reading, twelfth in mathematics and fifth in science though their scores are still above the U.S. average.

In 2007 CoSN brought another delegation to Finland, as well as Sweden and Denmark. At the time, the delegation saw an excellent education system with Finnish students achieving at high levels, but ICT did not play a central role in the system. In general, ICT was used for support of the “existing program, rather than as a driver of education innovation or transformation...” (w) hile technology is used in some creative ways; ICT has yet to be realized as a catalyst for overall innovation in learning.”

The 2018 delegation saw a much different context for education.

A European Commission report in 2012 was a wakeup call. Although financing had been provided continuously since the end of the 1990's to schools and municipalities to develop and incorporate ICT as part of pedagogy, the report noted that less than 20 percent of the 15-year-old students used computers for school-related work—significantly lower than other Nordic countries.

New strategic governmental and local municipal measures were put into place to change that dynamic. The Finnish National Core Curriculum goals established in 2014 highlight the importance of ICT in education. Key programs are outlined in “New Learning Environments and Digital Materials to Comprehensive Schools”. The new curriculum framework released in 2016 articulates a vision for learning that is cross disciplinary with ICT as a fundamental requirement ... and a goal of making Finland “a model country to modern and inspiring learning.”



FINLAND BY THE NUMBERS

Population »	5.5 Million
National Education Budget »	€ 11.1 billion (2100 € per capita)
Total K12 Enrollment	542,000 students with 95,000 teachers
Number of elementary and secondary schools »	2,900 primary & lower secondary schools 400 upper secondary schools
Attainment »	Education level of working age population: <ul style="list-style-type: none"> • 13% basic education only • 45% upper secondary • 42% tertiary education

Today the CoSN International Delegation visited the Finnish National Agency for Education to learn about the design and implementation of the new Finnish Curriculum Reform of 2016. Ms. Gun Oker-Blom, Director at the Finnish Department of Education, shared the history, process and goals of Finland's latest curriculum reform movement. The renewal process involved all stakeholders, particularly education providers and education personnel. Parents and students were also encouraged to participate in the curriculum redesign process. At the core of the curriculum reform is the overarching concept that school is a learning community ... There is a strong emphasis on interaction, learning to learn and ultimately working with knowledge.

ANN MCMULLAN

One of our most interesting meetings with Olli-Pekka Heinonen, General Director of the Finnish National Agency for Education. In a Roundtable with the delegation, he framed the dual challenge “Are we trying to make incremental change to improve the current system or make larger changes in the paradigm of education? Technology plays a huge role in both strategies. Heinonen commented that the “exponential pace of change can result in more inequality across schools, and that is unacceptable in Finland. The poorest child can go to one of the best schools in Finland. All the schools are good schools. Families do not have to decide where they will live based on where the best schools are.”



NORWAY

The Norwegian system, similar to those elsewhere in Europe, is divided into three levels:

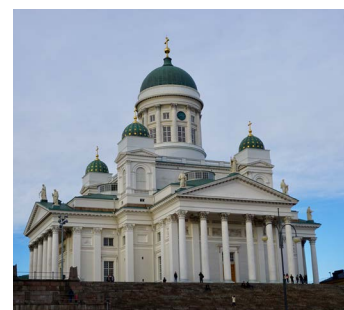
Primary and lower-secondary schools, compulsory for six- to 16-year-olds; upper-secondary schools, elective for 16- to 19-year-olds, and higher education, elective for young adults and offering degree programs at universities, university-level institutions, and colleges.

Public schools are fully financed by governmental agencies and free for all students. Each municipality is responsible for the running, administration and effective functioning of its local public schools. Public sector upper secondary schools and higher education are fully financed by the government.

The Norwegian primary and lower secondary education system was reformed in 1997. Starting in 2006, the “Knowledge Promotion” reforms were put into place focusing on working collaboratively, solving problems, fostering creativity, promoting digital competence and teaching the real world skills required in this new global economy.

Norway’s vision for the future of learning and its curriculum strategy is similar to what is occurring in Finland.

The Norwegian Professional Digital Competence Framework for teachers is a guiding document that organizes, defines and categorizes competence areas for professional development. Curriculum 2020, soon to be introduced to schools, will be in a digital format with an interactive interface for content providers. It defines competence as the ability to acquire, apply and use knowledge and skills, and to manage challenges and solve tasks in familiar and unfamiliar situations, in a way that implies understanding and ability for reflection and critical thinking.



From my high-level view of the Norwegian approach, it appears that it is their focus on formative learning in combination with collaborative and active project-based learning that may be a key to some of their success. Understanding this, the principal of the school, while citing the work of Fullan, Hattie, Robinson, [Norway] Directorate research and others, explained how they have focused their EdTech initiatives on hands on learning and digital tasks that help students to demonstrate deeper knowledge and understanding while also balancing screen time with other active approaches. To further ensure teacher and student interaction, books were purchased for specific courses, but they are kept in the library for loan, to emphasize that the textbook is a resource.... Teachers are then given time to plan with each other, while being encouraged to seek out other resources and tools in support of learning.

—ED MCKAVENEY

NORWAY BY THE NUMBERS

Population »	5.28 million
National Education Budget »	Nearly 7% of its gross domestic product (GDP) spent on education
Total K12 Enrollment »	<ul style="list-style-type: none"> • 820,00 students in primary and secondary education • 95,00 teachers • 2,900 primary & lower secondary schools • 400 upper secondary
Attainment »	One in four 19- to 24-year-olds pursues higher education.



Identity Management for the Norwegian Educational Sector

The Norwegian Ministry of Education and Research selected FEIDE as the sector's preferred identity management solution. With FEIDE, students and staff have access to a wide variety of services related to research and education using just one username and password. In FEIDE attributes keep information about the user secure. Students and employees employ the same user name/password for both local services (calendar, e-mail, etc.) digital learning resources and cloud services. FEIDE gives simplified user management for service providers and improved data quality and support for complying with school privacy regulations.

Solid Infrastructure Foundation

While schools in the U.S. continue to struggle with the underlying base for technology, such as abundant, affordable and reliable internet bandwidth, wiring and wireless access, and connectivity for students at home, Norway and Finland have a solid fiber infrastructure to both schools and homes. All schools appear to have a broadband internet connection with working wired and wireless connectivity in the buildings and all students have connectivity at home. This infrastructure is centrally managed, which allows for local control of curriculum and teaching.

Public Private Partnerships

Finland is the global leader in developing digital gaming tools that engage people of all ages and Norway also has an emerging gaming industry and companies focusing on ed tech Norwegian companies like [itslearning](#) and [Kahoot](#) and Finnish companies like 3DBear are becoming global ed tech players. A key factor behind this growth is the existence of strong public private partnerships.

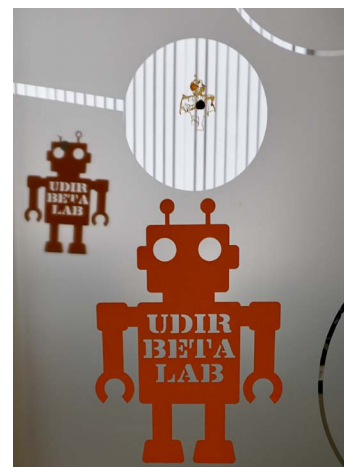
Based in Helsinki and with strong ties to the Department of Education at the University of Helsinki, [Xedu](#) is a business accelerator for edtech startups offering a broad range of services including coaching and mentoring, real-life testing environments for research and development and a network of global contacts.

[Education Finland](#), a part of the Finnish National Agency for Education, supports Finnish educational and ed tech providers, including 53 startup companies. A key part of its process is to encourage the involvement of innovative teachers in the design and testing of a company's products.

The Oslo Edtech Cluster is a business network established to support the development, and growth of Norwegian educational technology companies. The delegation had the chance to learn more about these companies when we attended EdTech Day and Oslo Innovation Week.

The purpose of renewing the curriculum is to make children and young people more able to meet and find solutions for the challenges of today and the future. Pupils shall develop relevant competences and good values and attitudes that are important to the individual in a society characterized by greater complexity, diversity and rapid change."

—MORTEN SØBY, THE NORWEGIAN DIRECTORATE FOR EDUCATION AND TRAINING



Northern European ICT in Education Roundtable

A Roundtable brought leaders from Estonia and Sweden to Helsinki to share their current ICT in education strategies and efforts.

Andres Aaremaa, E-services Department, Head of Dept, Republic of Estonia, and Ministry of Education & Research presented an overview of his country with a population of 1.4 million, 450-500 schools, primary & secondary, and 2 teacher preparatory universities.

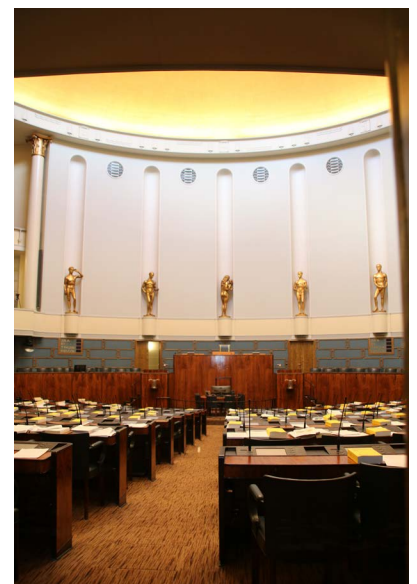
Estonia has learned a great deal from Finland and the country is a top performer on PISA. The Internet is regarded as a social right.

In 2015 they created a digital competence model with outcomes defined at each school level and a national test for digital skills. Digital resources are free for all students. Technology is integrated as much as possible into core subjects with separate courses in programming, robotics, and other technical areas. Professional development supports teachers in the use of educational technology. The Ministry procures devices and school networks so that all schools have access to digital resources but local municipalities have major responsibility for schools. A key challenge is attracting young people to become teachers.

Peter Karlberg, Director of Education, Skolverket, Sweden provided an overview of recent ICT developments. Though the governance structure is very similar to Finland with shared responsibility between the national level and local authority and with individual schools having a great deal of autonomy, there is less trust of teachers and more of a focus on accountability and licensure. Unlike Norway and Finland, there is a private school sector often run by profit making groups or religious institutions.

The Swedish national strategy for digitalization in schools (Vision 2020) calls for all students to develop digital skills. The focus is on digital competence for students, teachers, and administrators; equity in access and usage; and research and evaluation.

Sweden is experiencing a shortage of teachers with a prediction that the country will need 25,000 more teachers by 2025.



II. SYSTEMS OF TRUST AND RESPONSIBILITY

The dual concepts of trust and responsibility play out in many ways within the education systems in Norway and Finland—for students, for teachers and schools, and for both local and national government agencies.

The glue that holds the whole Finnish system together is trust. The national government trusts municipalities to run good schools and meet national curricular goals, but how they do it is up to them. Municipalities trust principals to run schools effectively and don't intervene unless a major problem arises. Principals trust teachers to have autonomy in their classrooms, and perhaps most importantly, teachers challenge students to be partners in the learning process and to take responsibility for their own education and academic achievement.

While all this has deep pedagogical implications, its roots probably lie in cultural perspective. Finland relies on trust. The U.S. just as deeply believes in measurable accountability.... These approaches reflect the populations and expectations of their societies. On the other hand, it seems that both cultures could gain from flexing a bit out of their comfort zones and learning from one another.

—BARBARA STEIN

Teachers are trusted to be highly capable and committed professionals who decide the methods of teaching and the curriculum materials they use in their classrooms. Schools are trusted to implement the broad goals of the national curriculum and what works best for their students, and to recruit, evaluate and support their own teachers. Autonomous municipalities are responsible for running their local schools, making decisions about the allocation of funding and setting directions for their schools. Autonomous universities are responsible for the own teacher preparation programs. Trust truly does permeate their education systems and reflects cultural norms.



Trusting Students

In both Norway and Finland, trust begins at an early age. All children and their families have access to educational and social supports from birth on through the early childhood education and care system and pre-primary education system for six-year-old children. As a result children enter the education system well prepared for the social and cognitive expectations of formal schooling.

Students have a voice in guiding their education. Students understand that they must participate in the learning process to be successful. Collaborations and peer-supported learning

"The Finnish education system rests completely on trust."

—OLLI-PEKKA HEINONEN,
GENERAL DIRECTOR OF THE
FINNISH NATIONAL AGENCY
FOR EDUCATION

"The education system is based on trust and responsibility as one of the six foundational principles of education in Finland."

—FINNISH EDUCATION IN A
NUTSHELL

The goal is to "increase accountability and transparency in an education system traditionally marked by a high level of trust and decentralization."

—NORWAY, DIRECTORATE
FOR EDUCATION AND
TRAINING

among students is also deeply embedded in the culture; competitiveness is not. Students are taught to use technology and digital resources responsibly, and they respond well to this trust. Schools do not have any Internet content filtering. Students are trusted to follow acceptable use guidelines without technological barriers imposed.

In primary grade levels—until grade 8—students are not assigned letter or number grades and they are not tracked or ranked in any way. Instead, teachers provide feedback to guide and stimulate learning with the belief that this builds student confidence and agency. The emphasis is on assessment **for** learning, not assessment **of** learning.

Trusting Teacher Educators, Teachers and School Leaders

Educators at all levels are trusted to be innovators.

Trust, responsibility, and autonomy begin at the top. Universities enjoy extensive autonomy in their teacher education programs. Each teacher education program organizes its own administration, decides on student admission criteria and processes, and designs the contents of degree programs within broad national requirements. High-quality preparation leads to high-quality school leaders and teaching professionals. This prized preparation is carried through

to lifelong learning, providing ongoing and deep professional development, opportunities to collaborate with peers, and other supports. As a result, teachers are the CEOs of their classrooms recognized as **the** key to quality in education.

The trust in teachers is supported by the system that attracts top students into the teaching profession, provides them with extensive, high quality preparation, and offers ongoing professional learning opportunities to collaborate with peers. In Finland, for example, teaching is an attractive profession, with only 10 percent of all applicants accepted to teacher education programs. Finland has required a master's degree of all teachers since the 1970s, and Norway is working toward a similar qualification.

School leaders essentially develop and implement their own version of the curriculum that is consistent with the local and national frameworks. Teachers are trusted to decide for themselves the methods they use, including the selection of learning resources—sometimes textbooks and sometimes collections put together by teachers. Continuing professional learning, collaboration and peer-supported learning are central to their approach. Leaders and teachers alike are actively encouraged to read—and act on—current research for pedagogical improvement.



Trust at the National and Municipal Levels

Trust in education is the foundation supporting societal and economic needs and ensuring future national success in the global market place.

In Finland, quality assurance at the national level is “based on steering instead of controlling.” Broad curriculum objectives are set nationally, and information, support, and funding are provided to help steer the system, with autonomy then passed down to the municipality, school, and classroom levels.

National funding to municipalities allows each entity to decide how to allocate the funding and provide the best possible education for its students within the local context and community. The single Finnish national teachers’ union works in collaboration with the National Agency for Education.

The Finnish national core curriculum framing is very broad, trusting teachers working within their schools and municipalities to fill in the specifics in locally defined and appropriate ways. Teachers have “pedagogical autonomy” so they can decide on their methods of teaching as well as select textbooks and other materials. Decisions such as class size and how to evaluate students and use the data to improve instruction are left to the schools. National evaluations are sample based to inform national and local plans for ongoing improvements in the system. The results are not used for ranking schools or students but are for system improvement purposes only.

There is a strong focus on self-evaluation of schools and educators. The concept of value-added measures of teacher and principal performance makes no sense within the Norwegian and Finnish contexts.

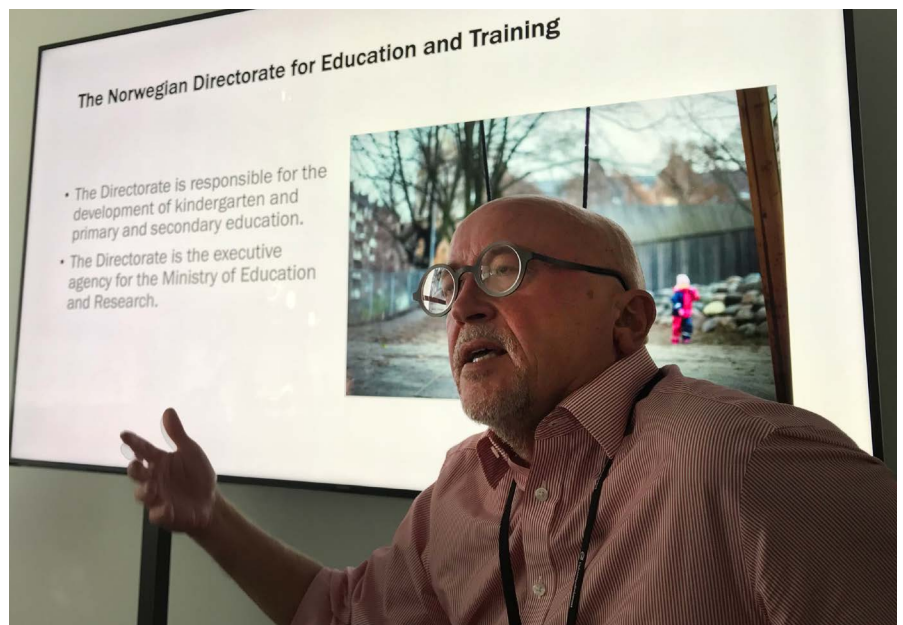
There is also trust that the education system is committed to maximizing the potential of each student according to their own capabilities and interests. Special needs are met primarily within mainstream education with intensified support and efforts to strengthen the education of language minorities and migrants. As Olli-Pekka Heinonen stated, “In Finland, it is unacceptable

to have inequities across schools.” This commitment both reflects the systemic trust of all students as capable learners and furthers the trust all communities place in their schools.

Our Norwegian and Finnish friends puzzle over how little trust there is in American schools and society. One principal captured this in a way we found painful given current realities in the U.S. when she noted that “There are no metal detectors at the entrances of Finnish schools and no discussions of arming teachers.”

In the US, there is a belief that the public system is broken. Building trust is a big issue. U.S. has a deficit model, not a trust model like Finland. Building trust, building community is needed in U.S.

—TOM RYAN



Policy in Practice: Exemplary Schools

Teglverket Primary School/Oslo

At Teglverket Primary School, the principal eliminated the use of textbooks as part of her approach to establishing a student-centered learning culture. Teachers and students use resources from the library and the internet, and there is a focus on project-based learning and collaboration. This approach helps students develop expertise in locating and evaluating relevant sources as they practice several skills at the same time. The process is considered as important as the result, with students learning to analyze and reflect on their research and make decisions around their work.

As a new school “started from scratch,” the principal did not wait for the new national curriculum that would be required in the next two years; she relied on Directorate white papers and current research to jump start the process. The principal and an assistant principal led setting the values and goals for the school. The principal had to justify the plan and its bases in research to the municipality. This initiative and the municipality’s trust in her vision, the depth of her research, and the ability to engage parents individually, led to the needed go-ahead. The big plus was that the municipality was able to see the curriculum in action before it was launched in the other schools.

We saw firsthand how students use apps requiring them to be active learners producing the content not just consuming it. Apps like Kidspiration, Book Creator, iThoughts, Puppet Pals and iMovie motivate students to create and collaborate. The iPad gives the students support using audio and imagery, which simplifies and permits adapted education on an even bigger scale. Headmaster Elisabeth Palmgren noted that “Digital opportunities add an extra dimension to inclusion and learning—a dimension that we are certain our students need in order to face a future that we know very little about. By providing well-planned, rich and open problem-solving tasks, where the criteria is customized and adapted to each student, our teachers give all students the opportunity to participate and be included in the classroom, with their class at their own level.”



In planning for this new school, the primary question asked by the principal was “What kind of teachers do we need to best meet our goals?” The answer: Teachers who know how to build trusting relationships. Trust and responsibility extend among teachers as well. Teachers teach all subjects, but they also have teams where each has a particular expertise they bring to the collaborative planning. Here educators have fixed hours for planning, setting aside some seven hours per week for planning and communication. Teachers and administrators plan together: Cooperation is regarded as an essential value, resulting in higher quality lessons and improved learning.

Elvebakken Upper Secondary School/Oslo

At Elvebakken Upper Secondary School in Oslo, the 1,450 students are given opportunities to make recommendations about their learning process in the classroom and school. The principal and teachers have a “Yes” philosophy. If students make a suggestion, they are given the opportunity to make it work. Every year the students are responsible for Theme Week. They choose the topic and are responsible for the week’s activities. The most recent topic was sexuality. The trust extended to allowing students develop their own learning program on this sensitive topic.

Leaders focus on the professional development of the teachers. Goals are made clear, as are expectations and

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limits. The principal trusts her teachers to collaborate and solve curriculum issues. There the leaders and teachers focus on creating good relations among the students, and between students and teachers. They are committed to preparing students for an uncertain working life and for developing a global mindset.

Collaboration is the watchword. Teachers spend one hour each Thursday for professional development in addition to collaborative preparations before the start of each school year

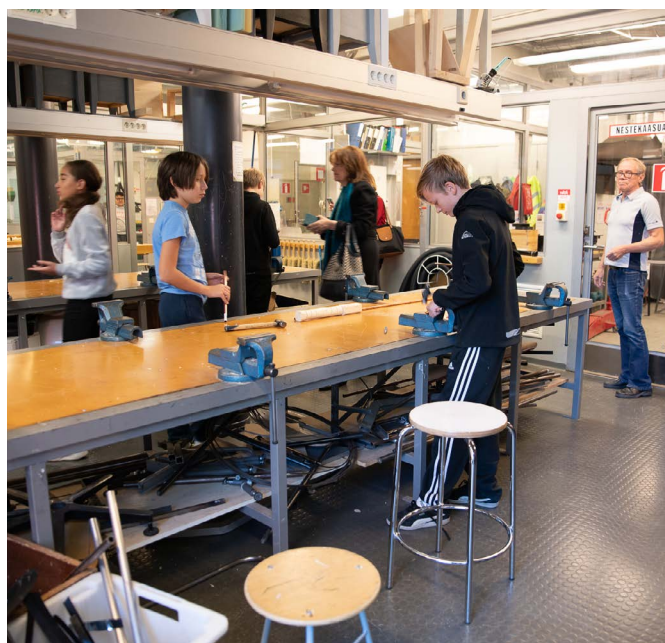
Aurinkolahti Comprehensive School, Helsinki

Established in 2001, the school has 860 students aged 7-16 (Grades 1-9).

Learning is seen as open, flexible, and collaborative and extending beyond the classroom.

Technology is a central part of the learning environment. Beebots are used in the 1st grades to teach sequencing and problem-solving

In grades 3-6 students learn the basics of programming and robotics using Lego Mindstorms. Students take an active role in their learning process which opens the possibility for more individualized learning paths.



Learning and studying are linked to real-life in what is called “phenomenon-based learning” Trust between students and teachers builds cooperation and a sense of community.

A decade ago another CoSN delegation visited the school. At that time the student population was very homogenous with the overwhelming majority of students Finnish.

In contrast the school population now is much more diverse with over 20% of the students coming from outside of Finland. There are large numbers of Russian students, as well as those from Middle Eastern and African countries.

Olari High School, Espoo

We met with a group of obviously very successful and enthusiastic high school teachers. Espoo told us they sought student input on how they taught and what projects were pursued. When we asked them how they as teachers were assessed, they were confused, and finally said they weren't. They did note that from time to time they met with the principal to review how things were going, but that was the extent of “assessment.” If clear problems arose they were addressed, but no regular system of teacher accountability exists.

We were also fortunate to run into a rather reflective student who had spent the past year as an exchange student in Des Moines, Iowa. His exchange year in the U.S. was at the same level as his previous year in Finland so when he returned his classmates had graduated. On one hand, he said he was struck by just how similar what he was studying in Iowa was to what he had previously studied in Finland. On the other hand, he noted, a very different approach by his teachers in the two countries. His U.S. teachers were more directive and stayed on top of student learning. His Finnish teachers treated students as empowered and independent. He noted that Finnish teachers were very good at challenging students to be responsible and autonomous, but that U.S. teachers probably saved some kids from falling between the cracks.

III. HIGHLY TRAINED TEACHERS: THE TEACHER AS CEO OF THEIR CLASSROOM

In both countries, there is consensus that high quality teacher preparation and in-service learning are critical components of meeting the future needs of students. Pasi Sahlberg, a Finnish educator and author who led the prior round of education reforms, identified highly qualified teachers and rigorous preparation of pre-service educators as a key factor in the success of Finnish schools. Based on our observations and conversations in Norway, it appears that a similar level of coherence and rigor in teacher preparation exists. While Norway currently is facing some shortages of teachers, Finland remains highly selective in its university teacher training.

In comparison to the U.S., teachers have far more authority, independence and control in decision-making. Norwegian and Finnish teachers have wide latitude in how they implement national educational standards to meet the unique needs of students in their classrooms.

One of the other notable contrasts with U.S. schools is the absence of a top-down management by central administrative structures. Schools and classrooms operate far more independently than in most American districts. And despite having nationally-defined curricula, principals and teachers appear to have permission and discretion to customize national standards as they see fit in the classroom.

Schools in both Norway and Finland are largely managed by building principals who, like classroom teachers, have broad authority. While Norway has something equivalent to central offices, they are not as extensive as those in the U.S. In Finland, there is even less oversight by municipalities with building principals largely in charge of most administrative responsibilities. Educational policy may be developed and promoted at the national level, but its implementation is resolutely local with principals and teachers defining how standards are applied in the school setting.



School 'scorecards' or grades as they exist in the U.S. are foreign to Norwegian and Finnish educators. While some student assessments are required as students advance to upper grades, these outcomes are not correlated with schools or teachers. National assessments in primary grades are designed to be formative, not evaluative. Finnish teachers are not evaluated on their performance aside from annual goal-setting conversations with their principals and performance assessments are certainly not tied to teacher pay.

Teacher preparation and training

A focus on teacher preparation and in-service training is integral to education reform efforts. While the U.S. takes a somewhat differentiated approach between K-12 schools and institutions of higher education, Norway and Finland have aligned higher education to better ensure consistency in the quality and preparation of new teachers. At the same time, the primary and secondary school levels do not rely on a complex certification process.

Both countries have also identified the need to develop coherent training for current teachers to implement effectively new student standards, including new ICT guidelines. There is a recognized need for ongoing professional learning around digital competencies. Finland developed a tutor program for mentor teachers and created a corps of highly motivated mentor teachers. In a few short years, 99 percent of the teacher workforce has taken part in the tutor teacher program.

Education for the future

While Finland and Norway have excellent schools and high levels of student performance relative to other countries, there is also the recognition that sustained growth and performance depend on innovation and continuous improvement of teachers.

As educators and schools seek to redefine what today's learning environment should look like to prepare students for the future of work and a lifetime of learning, there is increasing focus on

innovating teaching practices and curriculum to build human capabilities, habits of mind and adaptive interpersonal skills in students. With less emphasis on rote subject knowledge and factual recall, both countries are updating student standards and teacher practices to promote the creative application of critical thinking skills for complex problem solving.

Perspectives on Changing Skills and Learning

In order to keep pace with changing skills, Finland restructured its curriculum to focus on cross-disciplinary knowledge for a deeper understanding of complex subjects. While students generally have 70 minutes for a given course, teachers are given the opportunity to collaborate and co-plan instruction so that students make connections between courses.

In Norway a similar instructional approach to content is enhanced through a sense of student autonomy that begins at an early age and leads into larger efforts to build collaboration and coordination among students.



Wandering around Norway's enchanting Nasjonalgalleriet, the National Gallery of Art, turning over some of the learnings gleaned from background reading on the Norwegian education system in advance of this wonderful CoSN study tour, I found my thoughts flip-flopping between the similarities to, and the differences from, Australian education.

At first glance the overall form of the curriculum and the approach to ICT appears largely the same between Norway and Australia; both countries have adopted a model that includes general capabilities, that recognizes the importance of creativity and critical thinking, of learning how to learn. Both curricula embed technology skills across the learning areas and have a strong focus on developing students' digital competence.

However, like the different versions of Rodin's The Thinker, one housed here in Oslo's Nasjonalgalleriet and another in my home city of Melbourne, Australia, closer inspection reveals subtle differences; some of which may turn out to be not insignificant. And in musing on these differences further questions arise.

Is there some subtle difference in curriculum delivery, or teachers' digital competence, or perhaps in the approach to assessment?

—STUART MITCHELL

IV. EQUITY

Equity is a fundamental value and education is a key part of ensuring equity. There is, however, an emerging gap in terms of opportunity.

No Dead-ends in the education system

One of the basic principles of Finnish education is that all students have equal access to high-quality education and training. The same educational opportunities should be available to all citizens irrespective of their ethnic origin, age, wealth or where they live.

The government pays for all education, Kindergarten through Ph.D. Compulsory education begins in first grade and continues through grade nine. Students then take a matriculation exam in the 10th grade that determines placement in either general education or vocational track.

Both pathways are popular, with about an equal split in the percentage of students that choose one path or the other. Students from either track can switch during the course of study. After the 12th grade, 85% of students choose to continue schooling.

There are no “dead ends” in Finland as the country is committed to offering educational opportunities for the entire populations no matter where they live. VET (Vocational Education Training) is being reformed based on the country’s need to maintain a workforce that is agile, customer focused technologically skilled to compete on the global stage. Education in this arena is being streamlined to broaden content and support individually designed study paths that meet the rapid responses to the changing competence needs in the workforce.

The government hopes to increase participation in higher education with more cooperation between the institutions of higher education and secondary schools to decrease the gap years and teach students more entrepreneurial skills while transforming to a more student-centered approach. In addition, a focus on developing the competence of teaching staffs in the use of digital tools aligns with the vision of a well-equipped work force in the global market.

OLLI-PEKKA HEINONEN, GENERAL DIRECTOR, FINNISH NATIONAL AGENCY FOR EDUCATION:

“How can we make sure all schools will be good schools?”

Exponential pace of change can result in more inequality across schools. In Finland, it is unacceptable to have inequity across schools. The poorest child can go to one of the best schools in Finland. All the schools are good schools. Families do not have to decide where they will live based on where the best schools are.”

Everyone has the right to basic education free of charge. Provisions on the duty to receive education are laid down by an Act. The public authorities shall, as provided in more detail by an Act, guarantee for everyone equal opportunity to receive other educational services in accordance with their ability and special needs, as well as the opportunity to develop themselves without being prevented by economic hardship.

—FINISH CONSTITUTION

“The aim is for Norway to have high-quality schools that equip individuals and society with the tools they need to add value and to build a prosperous and sustainable future. The Norwegian school system is based on the principles of equality and adapted learning for everyone within an inclusive environment. All students should develop key skills, and during their education they should both face challenges and experience a sense of achievement.”

—MORTEN SOBY, NORWEGIAN
DIRECTORATE OF EDUCATION

Yesterday our delegation heard an interesting update on Baerum schools by Christian Sørbye Larsen. Baerum schools are one of the first large deployments of one-to-one technology (iPads and tablets) in Norway. The effort started in 2015 in five schools, and by this year they have 19,000 iPads deployed.

Larsen summarized lessons learned as a result of this deployment:

- Leverage learning and minimizing social differences of students
- This is about cultural change
- Key to success is good leadership
- Promote and emphasize 21st Century skills
- Amplify, fortify and magnify learning
- Motivate students
- Prepare them for an uncertain future
- Create future taxpayers

You have to start with the “Why” for a successful technology implementation. You have to have leadership that has a clear vision for this effort, and it must start with learning, not the technology. And, ultimately you have to create a culture for innovation.

—KEITH KRUEGER

While a delegation of representatives from CoSN certainly leans to the arranged side of the travel world, there has been room for some serendipity. As one of the first to arrive early Saturday morning, our small party set out to get the lay of the land, and explore the City of Oslo. We walked Karl Johans Gate, the most famous street in Oslo, and soaked in the atmosphere of the Saturday market. And suddenly, we found ourselves standing in the middle of a “research square” in the front of the university. And just like that, without ever planning it, I was immersed in an entirely on-topic, yet off-agenda dive into innovative education practices.

—RICHARD PLATTS



V. LESSONS LEARNED

The CoSN Delegation to Norway and Finland had its share of “aha” moments and our eyes were opened to systems based on very different premises than the ones we experience in the U.S. We were encouraged to think about changes we might make to prepare our students for the global digital-age world of today and the future.

As we reflect upon these experiences, what advice can we give to our colleagues in the U.S? What did we learn to address our challenges and improve learning for all students? And more importantly what actions can we take?

- Focus on problem solving, collaboration, critical thinking for students and teachers.
- Professionalize and value the teaching profession. Strengthen teacher capacity through innovative professional development. Empower teachers to start with the “why” first so that they can be engaged more in the “how”

- Advocate and focus on conversations about pedagogy first, technology second. A strong pedagogy base will last longer than the devices or apps we’re using today.
- Build greater student autonomy and inclusion in decision making as we seek to personalize learning.
- Expand and support preschool programs and services for all students.

Our journey is over—but the delegation will continue to look back on its experiences for inspiration as we continue our individual goal of improving learning.

Thank you to our hosts for a wonderful experience—TAKK AND KIITOS

I was frankly afraid that we would spend our time comparing notes about all the shiny digital things or about how we managed them. Instead, we have had edgy discussions about the perceived impact of immigration on schools: seeking more exact definitions of computational thinking vs. programming; and examining U.S. schools and education through the prism of Nordic crystal.

—MARK RAY



RESOURCES

World Class, How to Build a 21st-Century School System

What will it take for schools to prepare students for the future? Andreas Schleicher, initiator of the OECD Programme for International Student Assessment (PISA) and an international authority on education policy, has accompanied education leaders in over 70 countries in their efforts to design and implement forward-looking policies and practices.

Read the sections about Finland, relationship between money countries earn from natural resources and knowledge and skills of school population and concluding chapter.

- Nordic@Bett2018 report: The Nordic approach to introducing computational thinking and programming in compulsory education.

FINLAND

- European SchoolNet Report on Finland
- Is this Finnish school the perfect design?/ World Economic Forum
- Finland Considers Extending Free Compulsory Education

A citizen's initiative in support of free upper secondary education for all was presented to Parliament with 50,000 signatures; Finland's teachers' union officially endorsed extending compulsory education by three years.

Finland figured out the secrets to designing perfect schools—and the US can never replicate them/ Business Insider

- School Autonomy Isn't The Cure-All You Might Think It Is/Education Week
- Finland innovates with digital 'climate game' to focus youth on the planet/UNESCO
- Historical overview

- Finnish National Agency for Education brochures
- Digital Competence Framework for Teachers

NORWAY

- European SchoolNet Report on Norway
- The Norwegian Directorate for Education and Training
- Professional Digital Competency Framework for Teachers
- Policy Learning in Norwegian School Reform: a social network analysis of the 2020 incremental reform

FROM OUR SPONSORS

3DBear

Susan Sclafani's experiences of 3DBear in classroom/eSchoolNews/Video



AGENDA

2018 DELEGATION TO NORWAY AND FINLAND

Friday September 21 | Fly to Oslo via overnight flight

Saturday September 22 | Arrival in Oslo

Hotel Comfort Hotel Karl Johan

Sunday September 23 | Oslo

Hotel Comfort Hotel Karl Johan

4:00–5:00 PMOrientation meeting for the delegation/ The Norwegian Directorate for Education and Training/
Schweigaards gate 15 B, 0191 Oslo

5:00–6:00 PMWelcome, presentation and discussion on Norwegian Education and Digitalization (Morten Søyby)
The Norwegian Directorate for Education and Training
EUN: The Norwegian Country Report on ICT in Education

Monday September 24 | Oslo

Hotel Comfort Hotel Karl Johan

8:45–9:15 AMTransport to the school from hotel

9:15–10:45 AMVisit Elvebakken Upper Secondary School
Vestre Elvebakke 3, 0182 Oslo

10:45–11:15 AM.....Transport to meetings at The Norwegian Directorate for Education and Training, Schweigaards gate 15 B, 0191 Oslo

11:15 AM–noonDigitalization and Innovation in Schools (Trond Ingebretsen/Morten Søyby)/Q&A, Discussion

Noon–12:45 PMLunch sponsored by The Norwegian Directorate for Education and Training

12:45–1:15 PMICT plan/Digital competence development (Erik Westrum)

1:15–1:45 PMComputational thinking and coding (Kristine Sevik)
Nordic Report

1:45–2:15 PMBærum municipality (Christian Sørbye Larsen)

2:15–3:15 PMCoffee Break

3:15–3:45 PMProfessional Digital Competence Framework for Teachers (Marijana Kelentrić)

3:45–4:30 PM.....Similarities/Differences between USA & Norway (Cynthia Bigham and Mark Ray) lead discussants,
and group conversation

4:30–5:30 PM.....Presentation and discussion of LearnLab
Yngve Lindvig CEO, LearnLab Co-Founder and Secretary of the Atlantic Rim Collaboratory

Tuesday September 25 | Oslo

Hotel Comfort Hotel Karl Johan

- 8:45–9:15 AMTransport from hotel to school
- 9:15–10:45 AMVisit Teglverket primary school, Grenseveien 60, 0579 Oslo
- 10:45–11:15 AMTransport/ return to Norwegian Directorate for Education and Training /Schweigaards gate 15 B, 0191 Oslo
- 11:15 AM–12:15 PMUSA & Australian Response/Experiences on ICT in Education
(Glenn Kleiman & Stuart Mitchell, lead discussants and group conversation)
- 12:15–1:00 PMLunch sponsored by The Norwegian Directorate for Education and Training
- 1:00–1:30 PMIntroduction to itslearning (Nils Viken, Managing Director, itslearning Norway)
- 1:30–2:00 PMLearning platform experiences from Norway and USA. What are the differences and what can US school districts learn from Norway? Nils Viken/ Managing Director, itslearning Norway
- 2:00–2:30 PMCoffee Break
- 2:30–3:30 PM*Case study: City of Oslo*—executing on the ambitions of forward leaning politicians. The successful implementation of learning platform in Norway’s largest school district/ Bjarte Rørmark, Deputy Director, Department of Education, Oslo
- 3:30–4:00 PMContinuing education for teachers and school leaders (Anne Magdalena Solbu Kleiven) (tbc)
- 4:00–6:00 PMGroup debrief/Similarities & Differences between USA and Norway (Tom Ryan and Ed McKaveney) lead discussion and group conversation

Wednesday September 26 | Oslo/Helsinki

Breakfast at hotel and check out

- 8:30–9:30 AMMeet innovative companies attending EdTech Day
- 9:30–10:00 AMRegistration for EdTech Day/Oslo Innovation Week
Oslo House of Innovation
- 10:00–11:15 AMState of Global Edtech
Setting the tone and the State of Global edtech - trends, developments, investments, news, the future and the Nordics. Where do we see them?
- 11:15–11:30 AMTransport
- 11:30 AM–noonNew Curriculum: Renewal of subjects, basic skills and competence (Tone Børresen Mittet) The Norwegian Directorate for Education and Training, Schweigaards gate 15 B, 0191 Oslo
- 12:00–1:00 PMLunch Lunch offered by The Norwegian Directorate for Education and Training Schweigaards gate 15 B, 0191 Oslo
- 2:30 PMLeave for airport and flight check in
Finnair Flight 0916 leaves Oslo at 5:15 and arrives in Helsinki at 7:35

Thursday September 27 | Helsinki

GLO Hotel Kluuv

- 8:15 AMBus transportation to school
- 9:00 AM–10:30 AMAurinkolahti Elementary School, grade 1-9 of comprehensive school
- 10:30–11:15 AMTravel

11:15 AM-12:30 PMOlari High School/tour and discussion with teachers, students and administrators

12:30 PMTravel back to Helsinki and lunch at the Harbor market (Kauppatorri)

2:00-3:00 PMGun Oker-Blom, Director, Department for Education/ Finnish National Agency for Education/
Orientation on Finnish Education/
Opetushallitus, Hakaniemenranta 6/ Monitoimitila room on the ground floor

3:00-3:30 PM.....Break

3:30-5:30 PM.....Finnish ecosystem and support of innovation in ed tech/meetings and discussions with edtech
companies /Offices of xEdu Siltavuorenpenger 7, 00170 Helsinki
Kristian Smedlund, Counsellor of Education, Finnish National Agency for Education
Anna Dementyeva, Program Manager, xEdu
Jussi Kajala, CEO, 3DBear Inc.
Aleksi Komu, Director of Global Partnerships in Education, ThingLink

Friday September 28 | Helsinki

GLO Hotel Kluuv

9:00 AM-noon.....Finnish National Agency for Education
Northern European ICT in Education Roundtable
Hosted by Olli-Pekka Heinonen, General Director, Finnish National Agency for Education
In partnership with CoSN, a North American based education technology leadership nonprofit
An interactive conversation by senior education leaders from Northern European countries and the
U.S. delegation sponsored by CoSN—the Consortium for School Networking.
Goal: To share successes and failures around use of technology at the primary and secondary school
level. We will explore:

- How are some countries in Northern Europe developing and implementing around **curriculum and ICT**, to enhance the learning process?
- How are these countries developing the **skills students need** to succeed now and in the coming 4th Industrial Revolution?
- What **innovative policies and strategies** can education leaders from other countries learn from Northern Europe?
- Are there **lessons learned** from efforts that have not been successful which should not be replicated in other locations.

8:30-9:00 AM.....Coffee & tea

9:00-9:20 AM.....Welcome & Opening Remarks on the Finnish Perspective of ICT in Education Olli-Pekka Heinonen,
General Director, Finnish National Agency for Education

9:20-9:30 AMUS Perspectives on Education Technology Tom Ryan, Chair, CoSN

9:30-10:45 AMN. Europe Country Updates (10 min each, followed by 5 min question/clarifications) Moderated by
Keith Krueger, CoSN CEO
Recommendation to focus on one or two key issues. Helpful to provide a short written overview (1-2
pages) or a short PPT (no more than 8 slides)
Andres Ääremaa, Head of e-Services Department, Estonia Ministry of Education and Research,
Director of Education/Peter Karlberg, Director of Education, Swedish National Agency for Education

10:45-11:00 AMBreak/sandwiches will be served

11:00 AM-noonRoundtable Discussion: Lessons from Across the Atlantic and Around the World Moderated by Gun Oker-Blom, Direktör, Utbildningsstyrelsen, Svenskspråkig utbildning och småbarnspedagogik and Keith Krueger, CoSN CEO.

What lessons can we learn about ICT in education based on the experience of the CoSN delegation to Finland and Norway, as well as what we have heard this morning?

Are there particular things that education leaders and policymakers should do or not do?

Noon-1:00 PMMeeting with *Saku Tuominen*, CEO & Founder, *HundrED*/ Finnish National Agency for Education/ Karppi room

1:15 PMLeave for Parliament

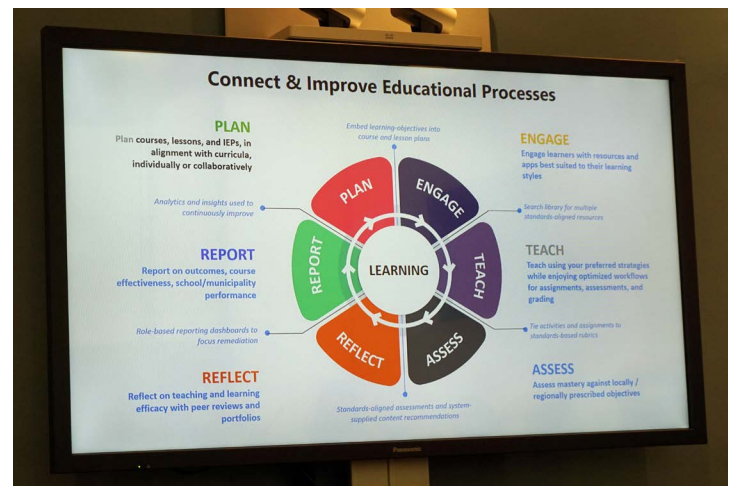
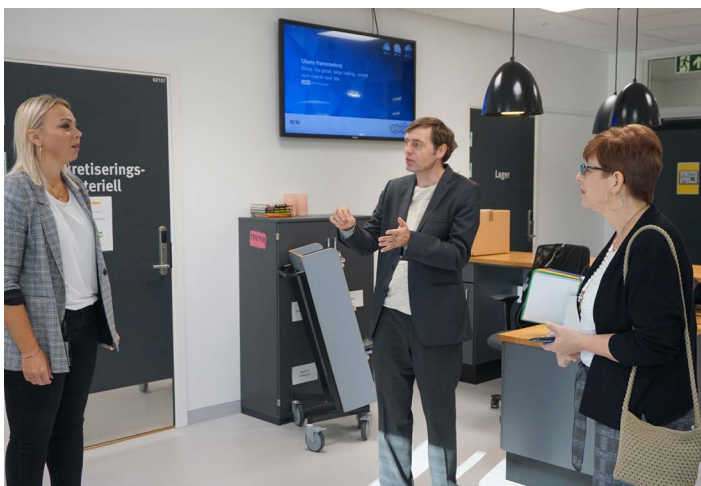
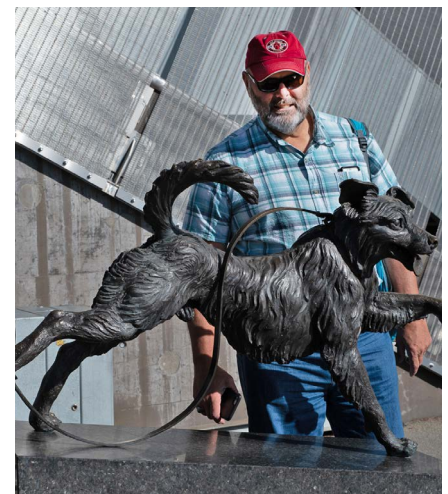
1:30-3:30 PMTour of Parliament and meeting with *Pilvi Torsti*, Kansanedustaja, MP, Finland , Education and Future Committees/ discussion of current ICT legislation and policies

Saturday September 29 | Helsinki

GLO Hotel Kluuv

9:30 AM-noon.....Wrap up meeting/report planning/at GLO Hotel Kluuv

Sunday September 30 | Depart for home



ROSTER

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