Accelerating Digital Innovation in Schools through Regional Innovation Hubs and a Whole-School Mentoring Model

About iHub4Schools

iHub4Schools is a 30-month long H2020 program project with a mission to propose mechanisms to **accelerate whole-school digital innovation** in and across schools through the establishment of **Regional Innovation Hubs**. The project supports school leaders and teachers to adapt **technology-enhanced learning practices** and **scale-up innovation** by establishing regional innovation hubs as sites for establishing and multiplying **school-to-school mentoring** structures. iHubs4Schools will develop and pilot different support mechanisms to enhance collaboration between digitally advanced and less advanced teachers and schools through a variety of peer learning approaches and engagement structures.

iHub4Schools will develop a whole-school mentoring model (now: **school mentoring model**) that is locally, methodologically, and technologically adaptable. Long-term sustainability will be ensured by a **systematic stakeholder engagement** strategy that will integrate initiatives and partners on a local level, such as local municipalities, school boards, teacher associations, and networks, for these activities to be carried out in the long term. The regional impact will be sustained by the upskilling of teachers to implement technologies meaningfully for teaching, and school heads to scale and sustain the innovation in and across the schools.

Content

School mentoring model for school developers (part 1)

Liisa Ilomäki, University of Helsinki

Implementing new digital technology and improving pedagogical practices is a major change in schools and individual teachers' work. Although schools and teachers improve and make changes in their pedagogical practices themselves, several studies indicate that external support is important and needed. Besides collaboration with colleagues and training, teachers need models, examples, new knowledge and possibilities to try and experiment with new practices, with guidance. These guides might be mentors and tutors, researchers, pedagogical consultants, school administrators, principals and key teachers. Through the years, researchers and practitioners have created and published several models and methods for supporting schools and teachers in these changes. Our aim in this project is not to create one more model but to collect various models, methods and tools that the partners of this project have found useful.

As a starting point, we have defined the conceptual model of the change. It is theory-based and still under construction; we will publish it later. Second, the partners developed a process model about the various steps of the changes. Third, we described individual methods to be used during the improvement process; now we have altogether eight methods and there will be some more. Figure 1 below shows the connection of the models and methods.

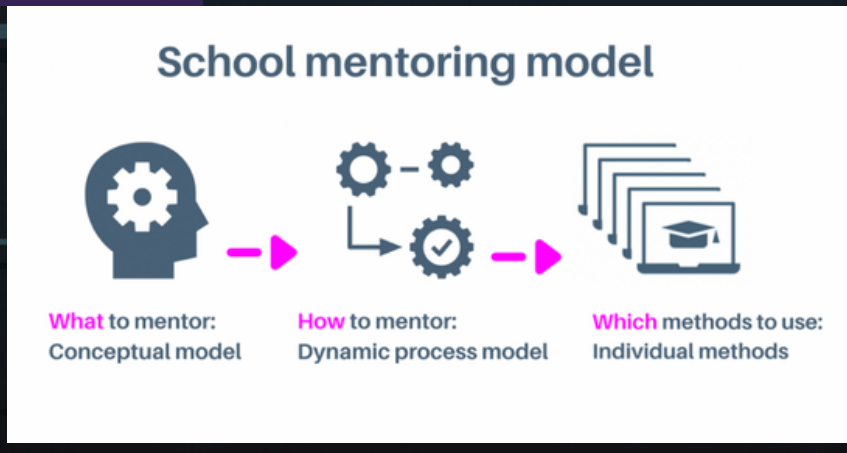


Figure 1. School mentoring model

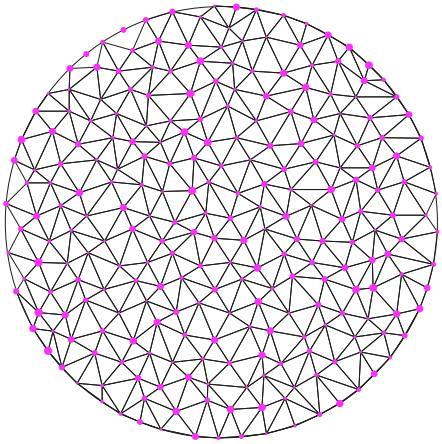
For more information about the models and methods: https://www.ihub4schools.eu/mentoring-model/

School mentoring model for school developers (part 2)

Liisa Ilomäki, University of Helsinki

The Dynamic process model is described in Figure 2. It is based on research and practice. The processes can be long or short, but the model shows the key steps in general. We created the process model based on experiences of school development processes in Estonia, Norway and Finland.

The individual methods are those which will be used during the various phases of the process. Till now we have described eight methods. Some of them are a short and for a certain aim: Digipeda workshop helps to start discussing how to improve the pedagogical use of digital technology in the whole school. It lasts for three hours and will need then other activities to start improving teachers' digital and related pedagogical competencies. Some others, for example Teacher Innovation Laboratory, is a longitudinal process (3-12 months) and it aims to support teachers' adoption and scaling of the educational innovation in classroom settings in school-university partnership. In the process, teachers co-create lesson designs with researchers, pilot them, monitor the process, and reflect on the experiences.



The next steps in the work for the models and methods is to continue testing them in schools and collect feedback about them. The models and methods will then be revised and improved. In addition, we create support and guidance to schools, first during the project and as a result of the experiences, to any school.

For more information about the models and methods: https://www.ihub4schools.eu/mentoring-model/

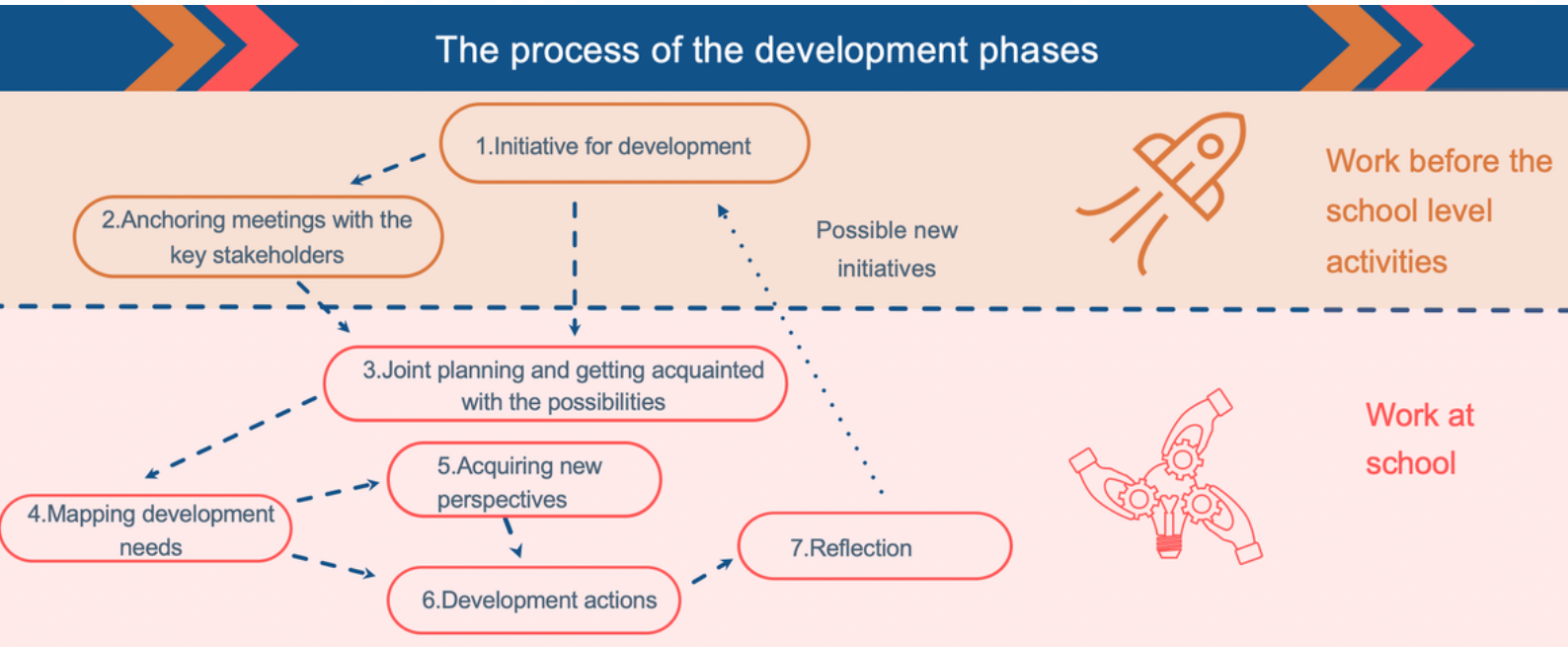
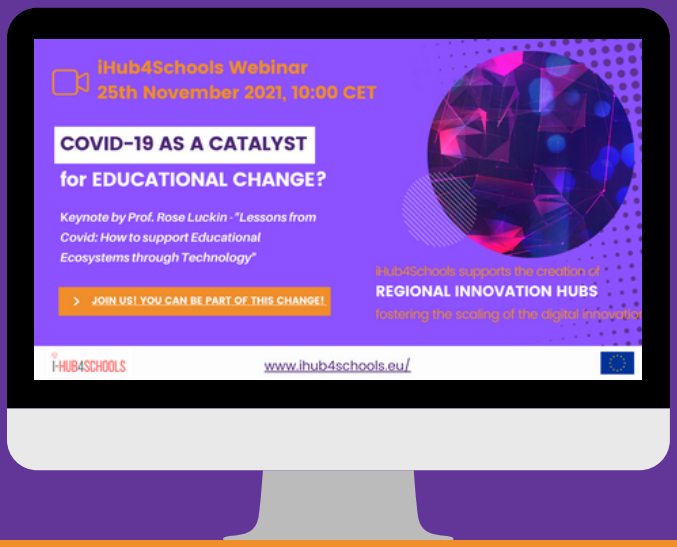


Figure 2. The dynamic process model. For more information about the models and methods: https://www.ihub4schools.eu/mentoring-model/



Covid-19 as a catalyst for educational change?

The webinar "Covid-19 as a catalyst for educational change?", the 1st stakeholder engaging event was held on 25th November 2021. The organisation of the event was coordinated by HARNO and STePS.

iHub4Schools event aroused interest among 83 registered stakeholders was attended by more than 50 participants from all over the world, especially from Estonia, Finland, Norway, the UK, Georgia, Lithuania and other countries.
This event aimed to bring together different stakeholders (researchers, policy partners, school leaders and teachers) to discuss the lessons learnt from the Covid19 distance learning situation, which could be seen as a catalyst for change to scale up digital innovation in schools.

The webinar was moderated by Andra Siiba. It was structured in two sessions: plenary and working group discussions. The keynote of Prof. Rose Luckin inaugurated the plenary session, which was followed by contributions from country perspectives. This session was meant to bring up good experiences, innovative solutions that were helpful for schools during COVID, and also to point out how much variety there is to solve similar problems. Click to watch the presentations:

- Estonia: Collaborative school culture, leadership - presented by Prof. Eve Eisenschmidt, Tallinn University (0:01-8:38 min)
- Finland: A study of Finnish tutor teachers' experiences of COVID-19 in schools - Minna Lakkala, University of Helsinki (9:42-15:17 min)
- Norway: Lessons learned from a digital school - Ingvild Vikingsen Skogestad at Knappskog school (15:19-25:15 min)
- Georgia: University practice and school practice - Tamar Siradze, Batumi Shota Rustaveli State University (25:20-34:53 min)
- Lithuania: How Lithuanian schools survive COVID-19 situation: between challenges and new opportunities - Vaidas Bacys, Dubysos school (35:05-43:10 min).

Keynote: "Lessons from Covid: How to support Educational Ecosystems through Technology"

Rose Luckin, Professor of Learner Centred Design, UCL Knowledge Lab

Click to watch the whole inspiring speech of Prof. Rose Luckin presenting UK research findings and analysis of the lesson learned from the COVID pandemic.

Which opportunities and challenges do different stakeholders who are part of educational ecosystem experience during the pandemic?

Data presented by Prof. Rose showed that:

- *Technology helped educators to make sure that the teaching and learning continues to happen.*
- *Parents who felt that communication from school leadership was clear were ten times more likely to feel confident about their school's handling of the disruption than those parents who did not feel communication from school leadership.*
- *Educators, their leaders and partners were all engaged in trying new technologies. 74% of education leaders, 81% of teachers and 68% of parents reported using or recommending technologies they had not used before.*

What are teachers' professional learning needs for scaling up technology-enhanced learning?

Main findings from the iHub4School webinar "Covid-19 as a catalyst for educational change?", working group moderated by Minna Lakkala, University of Helsinki, Finland

It is essential to take care of teachers' competence if we want to develop schools and teaching through digital technology. The question addressed to this group 3 focussed on tackling that challenge and discussing teachers' learning needs.

Understandably the discussion in the group started with the challenges and difficulties related to remote teaching caused by the COVID-19 pandemic. Problems like invisible students or safety issues and data protection were mentioned. The participants thought that teachers have to change their teaching methods for online teaching like how to manage student groups, how to engage students in online sessions, or how to find a balance between technology and social activities. Therefore, new ways of working with students should be developed, for example using student-centred and engaging approaches, co-creational activities, or balancing between group work and individual work. One recommendation was to make explicit agreements about what to do and what not to do with teachers who teach online. It was also argued that digital tools are not yet advanced enough for online teaching and learning; they should simulate a natural classroom better, e.g., through the use of avatars.

Gradually the discussion moved from online teaching to more general challenges relating to teachers' technical competence and teaching with technology: teachers are overwhelmed with too many available tools and some teachers are still against technology use at school. Recommendations to tackle this challenge mostly related to methods including teacher collaboration and peer learning, such as mentoring or peer-observation inside the school, sharing of best practices, networking through social media, and encouragement of teachers' co-creational activities to innovate new technology-enhanced learning methods. Teamwork between teachers and students was also mentioned as well as collaboration with parents. In addition, supporting teachers' professional development was argued to be a responsibility of the whole school, and they should have a plan for all about implementing technology in teaching and learning.

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How do we scale and sustain innovation across schools?

Main findings from the iHub4School webinar "Covid-19 as a catalyst for educational change?", working group moderated by Heli Aru-Chabilan, The Education and Youth Board Harno, Estonia

Achieving scales requires flexible adoption across a wide variety of contexts and learners. Important pointers to look after were named such as:

- leading with the problem, not with a preconceived solution. An example here is that under the COVID-19 the value of technology became very quickly clear also to those school teams who had been more passive in their technology use before.
- establishing a winning coalition of diverse actors from across the system to drive the change process forward.
- strengthen the adaptive capacity of different actors by having good quality data available for decision-making on different levels
- creating a learning community to enable peer-to-peer exchange.

COVID-19 has been a good learning experience for school communities as it has pushed school teams to explore many new themes like digital or distributed leadership, explore fields where the use of technology is easier or where it is more difficult (more practically oriented fields like medicine, art, music). We found in our short discussion that the funding system has a significant impact on whether the use of technology in learning is supported (level of infrastructure in schools, whether training is available for teachers, what is the quality of the learning materials and whether they are set up as an interoperable ecosystem etc). Also, whether teachers and schools have enough autonomy to implement their solutions flexibly. Some new developments, for example, could significantly limit teachers' autonomy (e.g. the choice of school owners for e-solutions and the application of GDPR requirements).

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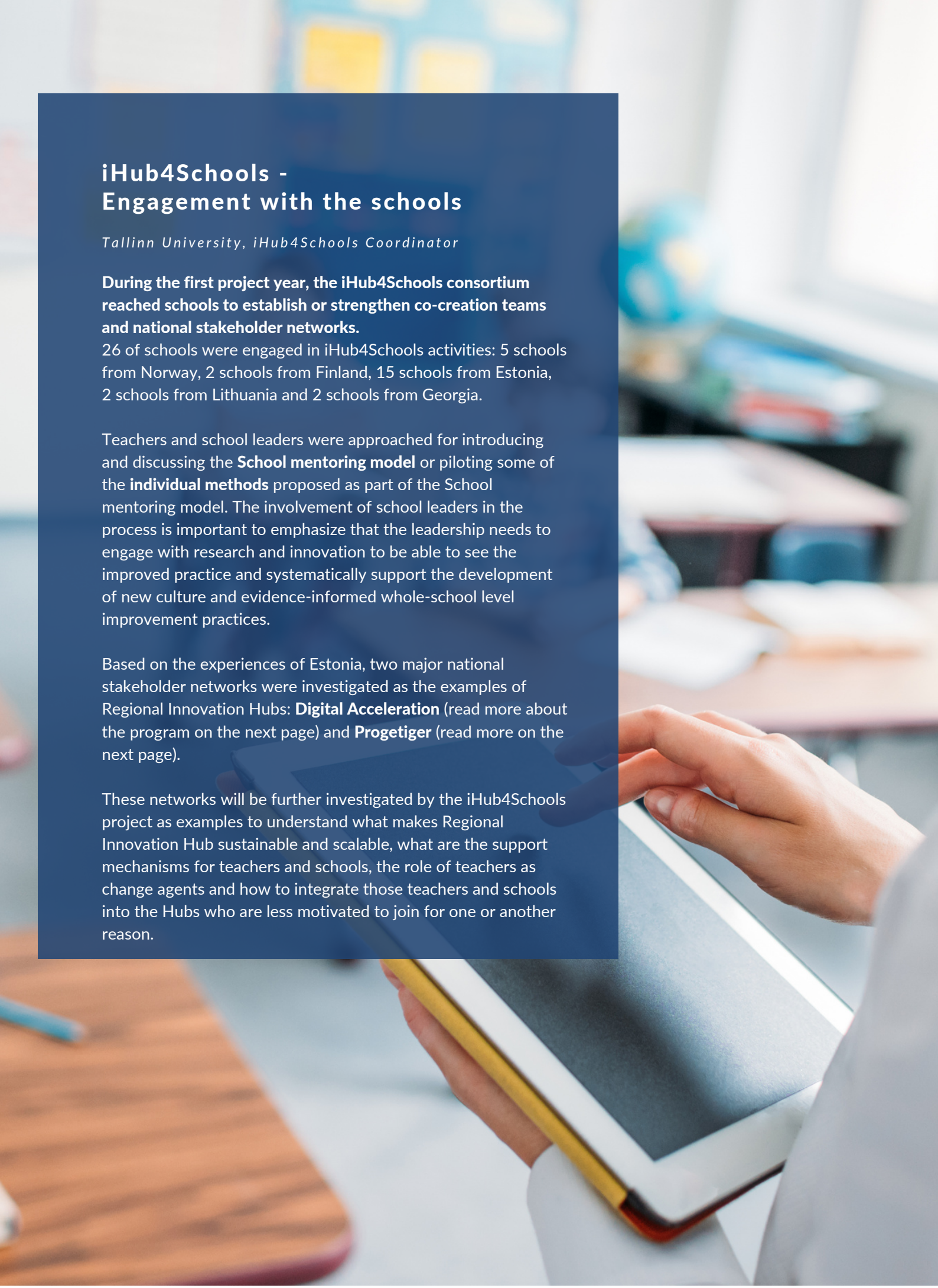

iHub4Schools - Engagement with the schools

Tallinn University, iHub4Schools Coordinator

During the first project year, the iHub4Schools consortium reached schools to establish or strengthen co-creation teams and national stakeholder networks.
26 of schools were engaged in iHub4Schools activities: 5 schools from Norway, 2 schools from Finland, 15 schools from Estonia, 2 schools from Lithuania and 2 schools from Georgia.

Teachers and school leaders were approached for introducing and discussing the **School mentoring model** or piloting some of the **individual methods** proposed as part of the School mentoring model. The involvement of school leaders in the process is important to emphasize that the leadership needs to engage with research and innovation to be able to see the improved practice and systematically support the development of new culture and evidence-informed whole-school level improvement practices.

Based on the experiences of Estonia, two major national stakeholder networks were investigated as the examples of Regional Innovation Hubs: **Digital Acceleration** (read more about the program on the next page) and **Progetiger** (read more on the next page).

These networks will be further investigated by the iHub4Schools project as examples to understand what makes Regional Innovation Hub sustainable and scalable, what are the support mechanisms for teachers and schools, the role of teachers as change agents and how to integrate those teachers and schools into the Hubs who are less motivated to join for one or another reason.

Digital Acceleration Program

Estonian case of school-level network

71 Estonian schools have participated in the **Digital Accelerator programme** from 2018 to 2021. The programme is funded by the Estonian Ministry of Education and Research and implemented by the Education and Youth Board, who is a partner of the iHub4Schools project.

Lessons to share with the others

The experiences of the schools participating in the Digital Accelerator development programme have been compiled into the **Digital Accelerator Collection** so that other colleagues will learn from their lessons learned in the future. The collection provides an overview of the topics to pay attention to when developing the digital competences of students and teachers: How to map school needs? How to plan digital learning and introduce changes in learning and teaching? What to look for in digital infrastructure and how to ensure digital security? The collection focuses on all these topics from a headteacher, an educational technologist, and a teacher perspective.

Digital Accelerator programme (DigiKiirendi) is a development program for the entire school team, the aim of which is to encourage and encourage the use of digital technology in teaching. The program develops teachers' digital competences and helps to introduce new approaches and teaching methods into teaching.

During the six-month program, teachers can receive either basic or tailor-made training, supported by an educational technology advisor assigned to the school. In basic training, teachers gain an overview of the basic skills and knowledge needed to apply digital technology. Tailor training focuses on topics that have been tailored to the capabilities and needs of a particular school.

Kerli Požogina, the programme manager of the Digital Accelerator (Estonian Digikiirendi) believes that the schools participating in the programme have received significant encouragement to use digital technology. “We all know how difficult the beginning is. And this is where we want to support our schools. The result is already visible: many schools that participated in the programme are much better prepared for digital learning.”

Source: Teachers improve their digital competence in Digital Accelerator, 23.12.2021: https://www.educationestonia.org/teachers-improve-digital-competence/
Read more: https://harno-ee.translate.goog/digikiirendi?_x_tr_sl=et&_x_tr_tl=en&_x_tr_hl=it

How peer learning happens in the network? Presentation of the Progetiger program

Technology and innovation in Estonian schools

Estonia has a national cross-curricular theme called “Technology and Innovation,” requiring all teachers to implement technology in their teaching in primary education. That means that teachers have to integrate technology in their subjects in different fields.
In 2012 Estonia launched the ProgeTiger programme to create interest in technology and improve technological literacy and digital competence of teachers and students. Various courses and training have been undertaken to this end, including programming, robotics and 3D technology, which have proved to be very popular.

Source: https://www.educationestonia.org/progetiger/

A network of tigers. ProgeTigers

The greatest value of ProgeTiger is the **network of enthusiastic leaders** – there are so-called **progetigers – technology-interested teachers** who offer exciting opportunities for children and inspire new colleagues to get involved – in every Estonian county. It is with their help that Estonia has now achieved results that we would not have dared to dream of in 2012. Today, in one way or another, almost all Estonian kindergartens and schools have become more or less involved in the activities of the ProgeTiger program.

iHub4Schools Stakeholders Engagement Strategy

iHub4Schools Regional Innovation Hubs and engagement platform

This iHub4Schools activity aims to design and create a framework and a platform to engage stakeholder communities around school level adoption of digital innovation and to create sustainable participatory approaches and concepts.

During the 1st project implementation year, the iHub4Schools consortium identified the characteristics of national stakeholder networks based on existing partnerships and a pool of **engagement events for different stakeholders**.
The next period of the project will empirically validate the stakeholder engagement framework to propose final recommendations for sustainable Regional Innovation Hubs. Additionally, the pool of engagement events will be further elaborated in collaboration with the stakeholders and integrated into the framework.

iHub4Schools - stakeholder events for the researchers and policymakers to create a larger impact and open the discussion on how to scale up digital innovation in multi-stakeholder networks

Joint online seminar with the researchers in collaboration with the Twinning project SEIS

Event organised on 22.09.2021 to find synergies between two projects for developing multi-stakeholder networks to scale up digital innovation. Seminar provided input for developing the concept of Regional Innovation Hub. Read MORE

Co-Creation Program to foster the design of Educational Technology Innovation

Tallinn University, in collaboration with HarNo launched in spring 2021 a program for the educational technology industry sector and school teachers to jointly co-create educational technology innovation. Read MORE

Introducing the School mentoring model for future digital tutors and change agents

In Finland, Minna Lakkala, who is a researcher at the University of Helsinki and the member of the iHub4Schools project, had an opportunity to introduce the School mentoring model in the closing ceremony of the 5th DigiErko training group in the University of Turku. Read MORE

The role of technology in teaching and learning in 2021

As part of the event of '25 years of educational technology in Estonia' researchers (TLU), teachers, policymakers (HarNo) and industry partners (NetGrupp OÜ) discussed the role of technology in teaching and learning and future trends. Questions like what fundamentals technology has brought to education, what key processes have changed and where gaps remain. Read more

Co-creation of educational innovation in school-university-industry partnerships

Tallinn University in collaboration with HarNo and StartUp Estonia run a program for co-creating educational innovation in partnership with school teachers, educational technology StartUps and universities. 6 teams consisting of 2 teachers, industry and university mentors co-created over the 6 months educational technology innovations, piloted them at school practice and improved the products. The process was built on the EDUCATE model developed by iHub4Schools partner University College London (UCL), which was adapted to Estonian needs. More

Engaging Stakeholders

Introducing digital innovations in schools of Adjara Autonomous Republic

Batumi Shota Rustaveli State University staff involved in the project iHub4Schools met with the Minister of Education, Culture and Sports of the Adjara Autonomous Republic and the heads of educational resource centres. The meeting aimed detailed introduction of the project objectives, expected outcomes and establishment of cooperation.

The present-day educational system faces new challenges: schools are relatively better equipped with new technologies. However, technology in schools does not necessarily lead to changes in learning outcomes. Policy level decisions, investments in the ICT and professional programs do not seem to be enough to force the widespread educational change. Schools need methodological assistance based on research that can propose mechanisms to satisfy a strong need for the emphasis of mentoring and peer-learning processes. It can accelerate the whole-school digital innovation in and across schools through the establishment of hubs. The participants agreed that the project will play an important role in introducing digital innovations in schools. Criteria and deadlines for selecting pilot schools were agreed upon with the heads of the educational resource centres.

Graphic design: STePS, Italy
Pictures: Canva Pro

iHub4Schools supports the creation of

Regional innovation Hubs

fostering the scaling of the digital innovation

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