

INITIAL MENTORING MODEL REPORT M6

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

**WP3 / D3.1 Initial mentoring model
Leader: Tallinn University (TLU)**



I-HUB4SCHOOLS





**iHub4Schools - Accelerating Digital Innovation in Schools through Regional Innovation Hubs
and a Whole-School Mentoring Model**

D3.1 Initial mentoring model, M6

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Executive summary

iHub4Schools is a 30-month long H2020 project with a mission to propose mechanisms to accelerate whole-school digital innovation in and across schools through 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 of establishing and multiplying school-to-school mentoring structures. iHub4Schools will develop and pilot different support mechanisms to enhance the collaboration between digitally advanced and less advanced teachers and schools through a variety of peer learning approaches and engagement structures. iHub4Schools will propose a whole-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 network, for these activities to be carried out on the long term. Regional impact will be sustained by the upskilling of the teachers to implement technologies meaningfully to teaching and school heads to scale and sustain the innovation in and across the schools.

D3.1 aims to provide the initial version of the mentoring model based on the partners experiences, existing models and approaches in collaboration with co-creation teams and the National Stakeholder Networks. This deliverable is mainly designed for the main stakeholders of the project - mentors, teachers and school leaders - and therefore this report gives a brief overview of the basic ideas of the model and the initial version of the model itself is published in our website: Link: <https://www.ihub4schools.eu/mentoring-model/>.

Introduction

Today's educational landscape is expected to address several challenges: a) schools are more equipped with new technologies, which should improve the pedagogical practices; b) students should be prepared for the future by developing their so-called 21. century skills as part of the formal education and c) teachers' and students' digital competences need to be shaped because lack of such skills may increase the digital divide between different groups and harm some students' ability to cope in a knowledge-intensive technology-enriched environment (EU, 2010). In schools, investments in



the technologies have increased rapidly to promote technology-based school innovations, but it is not clear if the change at the system level is happening (OECD, 2010). Policy level decisions have been made and investments in the ICT and professional development programs have been done, but it does not seem to be enough to force the widespread educational change and innovation needed to transform the majority of schools and teachers (Langworthy et al, 2010).

The concept of digitally innovative schools have gained a lot of attention recently politically, practically and as a research trend. There is no clear definition of digital innovation or digitally innovative school, but the well-established understanding of digitally innovative school refers to the practices where schools have systematically integrated technological possibilities into the different levels of practices from pedagogical practices in classrooms with students to the collaborative and leadership practices of the staff. However, across the countries, regions and educational cultures, digital innovation is understood and applied in various ways. While some schools are engaged in systemic, evidence-based improvement activities that follow a well-developed digital strategy, others keep the traditional way of teaching and learning and they do not benefit from the advantages of teaching in a technology-enhanced learning environment. Thus, in many countries the change in education, based on digital possibilities, takes place differently at school and teacher level, even if digitality is taken into the national curricula. Many studies have pointed out that **technology in schools does not necessarily lead to changes in learning outcomes** (Dynarski, 2007). OECD (2010) have brought out three main reasons for that: a) first, access to technology does not mean that teachers will use them or integrate them pedagogically meaningfully in their pedagogical practices; b) research has shown that how the technology is used can determine whether or not it has an impact on students' learning outcomes and c) teachers' practices and strategies are the key factors influencing students' learning outcomes.

Therefore there is a strong need for the approach which emphasizes the mentoring and peer-learning to foster the school level change for more scalable and evidence-informed implementations of digital innovation by the teachers. Lafuente et al. (2018) concluded that successful teaching depends precisely on how teachers integrate technology into their daily relations with students. In this approach the co-creation methodology is crucial to support teachers to integrate technology, pedagogical knowledge and content to learning scenarios in collaborative settings, implement it and



monitor its impact effectiveness with novel learning analytics solutions. Existing evidence-based successes of implementing digital innovation at school are often small-scale (Cuban, 2013), rarely sustainable (Toh, 2016) and often use technology to replicate existing practices in school (Glover et al., 2016) rather than to drive innovation (Genlott et al., 2019). Inquiry oriented practice and data-driven decisions in instructional and school level are considered as central themes of educational improvement (Schildkamp et al., 2017). Therefore, in the iHub4Schools peer-learning mentoring model, teachers' professional learning in collaboration with peers is crucial to foster systematic and scalable digital innovation, and to support teachers' understanding of the value of digital technology and practices to implement technology in a pedagogically meaningful way. However, it is important also to involve the management level to create the culture and practice for evidence-informed implementation of digital innovation.

iHub4Schools Whole-school peer-learning mentoring model

iHub4Schools whole-school mentoring model to foster the adoption of digital innovation, consists of a) a **conceptual model**, which aims to target researchers, school leaders and policy makers to conceptualize digitally innovative school that fosters whole-school level peer-learning and mentoring and b) a **dynamic process model** targeting school leaders teachers, mentors and teacher trainers to provide practical tools and methods to implement and adopt digital innovation in their organisation.

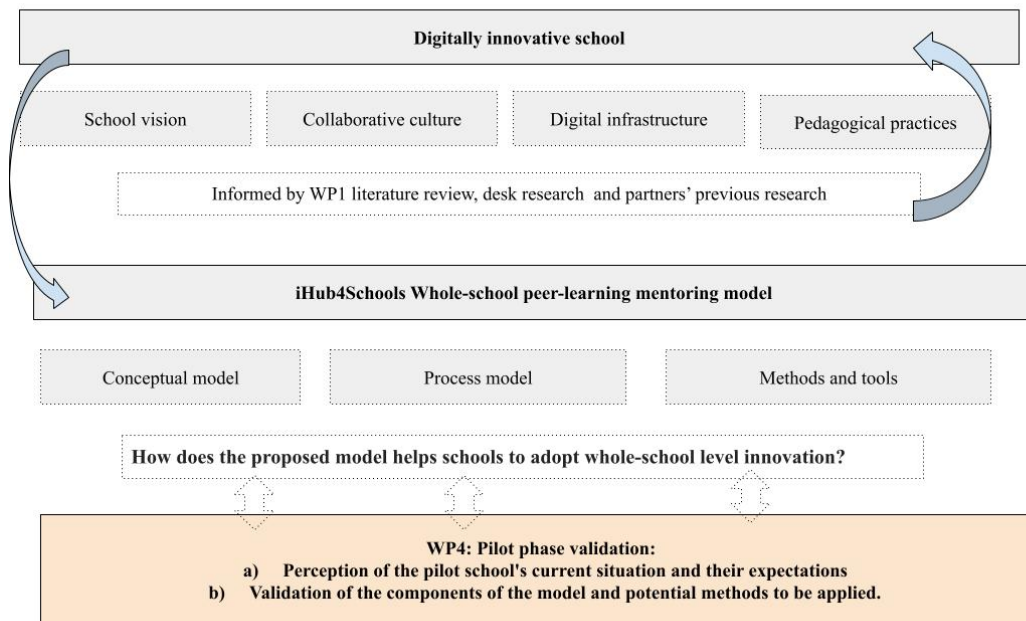


Figure 1: The process of developing iHub4schools whole-school mentoring model to foster the adoption of digital innovation

The process of developing the iHub4Schools mentoring model is iterative and closely intertwined with the activities of other work packages (see Figure 1). Both the **conceptual model** and the **dynamic process model** are built on the research of the iHub4Schools consortium partners and will be further developed based on the research carried out in WP1 and improved after the piloting phases of the project. Design process relies heavily on involving the end-users to the design process (national stakeholder networks as defined in WP2). Initial model will be iteratively reviewed based on the research planned in WP4 and the final model will be proposed at the end of the project in WP3.

Initial conceptual model

The aim of the conceptual model is to clarify the focus and principles of the whole-school mentoring model, the various elements and their mutual connections. It supports the stakeholders to understand what is needed to mentor and scale up digital innovations in the schools. Conceptual model of the general mentoring model is built on the previous research of the project partners?, will be further developed based on the main outcomes of the literature overview proposed in WP1 and will be



iteratively validated with the stakeholders in five partner countries of the iHub4School project. The main stakeholders of the conceptual model are researchers, school leaders and policy makers to conceptualize a digitally innovative school that fosters whole-school level peer-learning and mentoring. Such a conceptual model provides the main building blocks which are needed to address in organisational level for sustainable adoption of digital innovation. Defining the building blocks is needed to provide possibilities for evaluating schools and planning school development activities nationally and regionally. Finally, it can be used as a tool for the school teams for collective reflection and strategy planning.

In the initial conceptual model of the mentoring model we aimed to define the main components defining digitally innovative schools fostering whole-school level adoption of innovation. Two models previously developed by the project partners were used for this purpose: **The innovative digital school model** proposed by Iломäki and Lakkala (2018) and **Schools' Digital Maturity framework** introduced by Pata, Tammets, Väljataga et al (2021):

Innovative digital school model offers a research-based and practice-oriented model for schools to reflect on, understand and improve their own practices to achieve sustainable pedagogical improvements with the help of digital technologies (Iломäki & Lakkala, 2018). The model consists of six major components: a) *Vision of the school* (regarding vision using technologies and orientation for development; b) *Leadership* (e.g., shared leadership); c) *Practices of the teaching community* (pedagogical collaboration, development of collaborative practice); d) *Pedagogical practices* (the perceptions and practices of using digital technologies in teaching); e) *School-level knowledge practices* (school-level networking, involvement of students to the activities, common knowledge practices using technologies) and f) *Digital resources* (infrastructure, support, resources, digital competences).

Digital Mirror is a self-assessment framework (Pata, Tammets et al., 2021) that was designed to guide schools in self-assessment of their digital maturity on the organisational level. The Digital Maturity framework was inspired by ideas of Fullan (2001), who claims that knowledge from three domains (technology, pedagogy and change management) should be combined for successful whole-school policy on digital innovation. Pedagogical innovation indicators of Digital Mirror were drawn



from The Estonian Lifelong Learning Strategy 2020¹. Digital Maturity model of Digital Mirror has 15 indicators in total, distributed between 3 domains: (1) pedagogical innovation, (2) change management and (3) digital infrastructure.

For sustainable adoption of whole-school level digital innovation, both frameworks emphasize the importance of school-level vision, leadership, collaborative culture (including knowledge sharing and knowledge practices), digital infrastructure and pedagogical practices (see Figure 2).

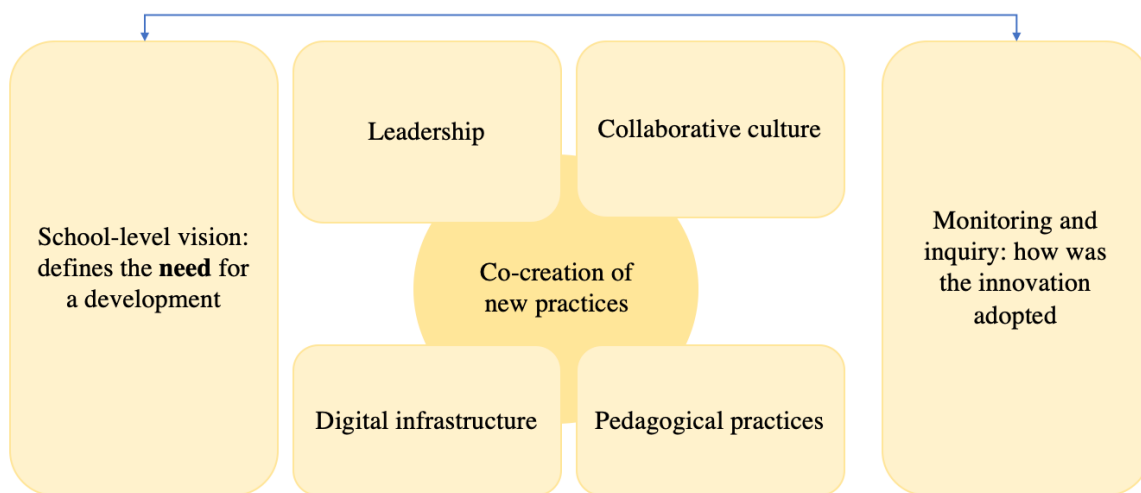


Figure 2: The main building blocks of iHub4Schools model of digitally innovative school

Both frameworks emphasize less directly the need for monitoring and inquiry practices and also the collaboration with multi-stakeholder networks (researchers, teacher trainer) which are used as an extension of frameworks in the initial model development phase.

The dynamic process model

The aim of the dynamic process model is to offer practical guidelines, steps, tools and methods for the practitioners - mentors, teachers, teacher trainers, school leaders on **how to mentor schools** to school teams and teachers to adopt and scale-up digital innovation in their practice. The dynamic

¹ https://www.hm.ee/sites/default/files/estonian_lifelong_strategy.pdf



process model can be seen as a method for working in schools, together with the staff, emphasising co-creation between different stakeholders and enhancing evidence-based school improvement development.

A proposed initial dynamic process model is adaptive and does not follow the ‘one size fits all’ approach. On one hand the aspects like national policy-level differences, size of the school, level of the school (primary, lower secondary, upper secondary) should be taken into consideration while planning the methods for implementing digital innovation. On the other hand, iHub4Schools approach emphasizes the schools’ autonomy to plan changes based on the school vision and needs as well as with the resources available. The mentoring model is offering tools to guide teams to identify the needs, plan the development actions, enhance the peer learning and foster the understanding of the impact of the innovation to school practice. Phases of the dynamic process model are described in Figure 3.

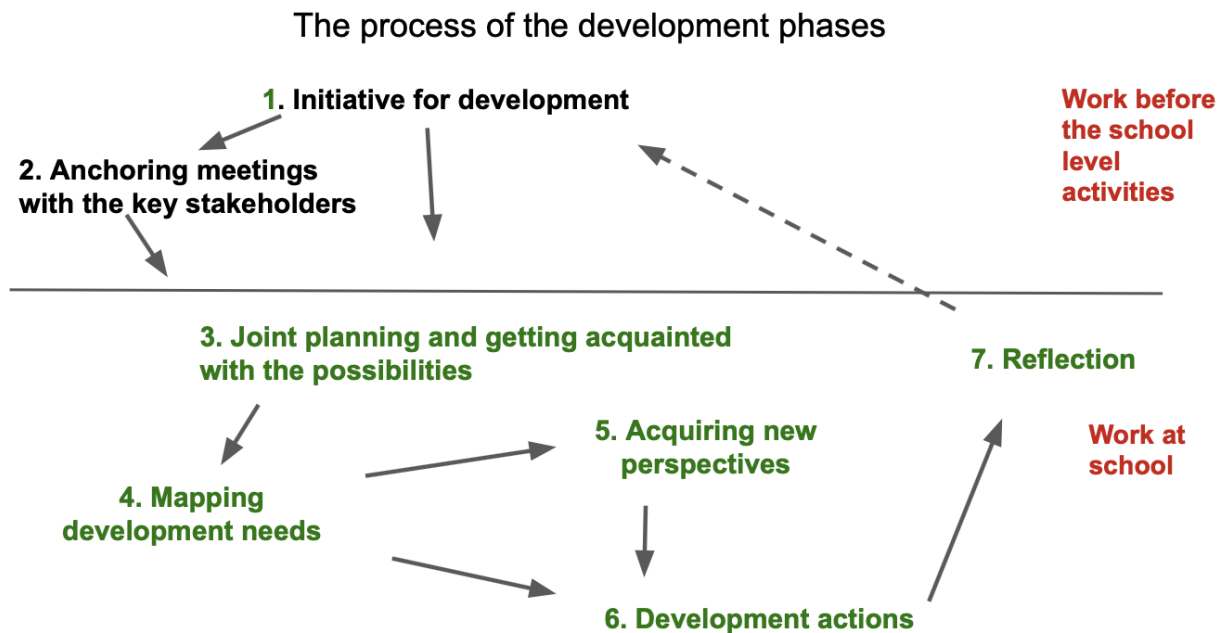


Figure 3: The dynamic process model of iHub4Schools whole-school level peer learning model

Figure 3 illustrates that some of the planned actions proposed in the dynamic process model will take place before the school level activities (e.g., initiative for development and anchoring meetings with the key stakeholders). On such meetings, usually researchers, trainers, mentors or other similar



professionals are involved. Activities (happening) which take place at (in the) school (within) by the teams include joint planning of the activities, mapping development needs, acquiring of new perspectives, development actions and finally reflection which takes the school teams back to the first phase of the process. The phases of the model for the mentors, school leaders and teachers are described in more detail in our web-page developed for the end users: <https://www.ihub4schools.eu/mentoring-model>

Initial methods for enhancing whole-school level peer learning

Method is defined in iHub4Schools as any tool, framework, program, or workshop format that supports the mentoring of schools to implement whole-school level digital innovation through peer learning. Choice of any of the methods is a joint activity of the mentors and school staff, as presented in the Dynamic process model. Methods can be used as toolbox tools from which school chooses the appropriate approaches based on their needs and goals. Proposed methods have been documented for this deliverable by the consortium members of the iHub4Schools project based on previous experiences. During the project, we will create and collect other methods and they all will be validated in different settings during the project lifetime.

In this deliverable, the first three methods for initial model are proposed from three different angles on school level to teacher level: *Future School* - a program for supporting evidence-informed whole-school level improvement designed for the school teams; *Digipeda* - a workshop format for schools to reflect on their practices to use digital technology in teaching; *Teacher Inquiry into Student Learning* (TISL) - a program for the teachers to improve awareness of teachers' professional development through systematic, intentional, self-critical, planned investigations of own teaching practice. Methods as tools for the mentors, school leaders and teachers are described in more detail in our webpage created for the end-users: <https://www.ihub4schools.eu/mentoring-model>

Conclusion

D3.1 aims to provide the initial version of the mentoring model for the schools to foster the adoption of digital innovation through whole-school level peer learning. This deliverable is mainly designed for the main stakeholders of the project - mentors, teachers and school leaders - and therefore this report gives a brief overview of the basic ideas of the model and the initial version of the model itself



is published in our website.

The model will be piloted in the autumn 2021 and further developed based on the piloting experience and research carried out in WP1. Based on the evaluation interventions, the final mentoring model will be developed till the end of the project and it will consist of the modified conceptual model, the dynamic process model and the individual methods. Improved version of the model will be proposed in M12.

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