

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

**WP2/ D2.2**

**SUPPORT MECHANISMS FOR ENGAGEMENT  
AND SUSTAINABILITY**

**WP5 Leader: HARNO**



**I-HUB4SCHOOLS**





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

D2.2 Support mechanisms for engagement and sustainability, M30

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<b>Author(s)</b>	Pirgit Sillaots, Kerli Požogina, Raquel Coelho, Kairit Tammets, Minna Lakkala, Liisa Ilomäki, Tatia Nakashidze-Makharadze, Valentina Dagienė, Cecilie Hansen, Barbara Wasson
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# Executive summary

## Background and report objectives

iHub4Schools revolves around the establishment of **Regional Innovation Hubs** as vehicles for systematic collaboration among stakeholders, enabling sustained digital innovation in education on local, regional, and national levels and across the countries. This initiative relies on collaborative partnerships among research institutions, teacher training institutions, school teams, and local educational authorities. The primary purpose of the Regional Innovation Hubs is to serve as central hubs for collaboration, fostering innovation, and driving growth. These hubs play a vital role in connecting diverse networks, encompassing those dedicated to designing, implementing, monitoring, and sharing digital innovation practices, as well as those committed to capitalizing on the project's outcomes. By leveraging these interconnected networks, the iHub4School project strives to accelerate and sustain the adoption of digital innovation in education.

The success and sustainability of these hubs rely on stakeholders engagement. It is crucial for stakeholders to derive value from their involvement in order to maintain their commitment. Without this value, stakeholders may disengage, leading to the disintegration of the network. Value creation within the networks can be achieved through various activities and interactions, which result in short or long-term benefits for participants. These benefits include finding solutions to problems, acquiring useful skills, developing social relations, and accessing privileged resources. In the iHub4School project, these activities and interactions are referred to as hub-embedded support mechanisms.

This report introduces the support mechanisms, the *Engagement and Sustainability toolkit* which is a methodology developed collaboratively to provide practical recommendations for establishing and nurturing sustainable connections with key stakeholders, such as teachers and school teams, in digital innovation initiatives. Support mechanisms are designed to enhance primary stakeholder engagement and ensure long-term sustainability. The examples we provide are not exhaustive and are intended to offer other initiatives a range of possibilities to consider.

## Methodology

To derive the **support mechanisms** detailed in this report primarily stem from a study carried out with 26 members of national stakeholder networks in five partner countries. The primary goal of this study was to expand and revise the original support mechanisms proposed in the iHub4School's project, which were principally based on Estonian network examples, such as the ProgeTiiger network, which focuses on knowledge creation and sharing about programming in primary schools. We aimed to widen this perspective, incorporating support mechanisms examples from networks in partner countries. Participants for this study were conveniently sampled across different networks via collaborators in Estonia, Finland, Georgia, Lithuania, and Norway. Data collection occurred either through a structured interview protocol or an open-question survey with equivalent content, both translated into the native language of each participant. The focus was on understanding the perceived value of stakeholder networks and identifying significant network activities, interactions, and structures. All interviews and survey responses were conducted online, recorded, and translated back into English. An initial codebook was developed grounded in Wenger et al.'s (2001) Value Creation Framework, and incorporated anticipated and unanticipated values and support mechanisms. The analysis then underwent a two-step coding process and a thematic analysis

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to highlight the significant support mechanisms. The findings were subsequently shared with collaborators for validation and necessary revisions, ensuring a comprehensive understanding of the support mechanisms within these networks.

## **Key findings**

In the following, there is a brief summary of key findings of the study conducted. Although it is needed to emphasise that the national and local characteristics might restrict, prevent or support these support mechanisms and the key implications for policy and practice proposed in this deliverable.

### *Capacity building opportunities*

Network members **derive substantial value from participating in a variety of events** identified as capacity-building opportunities. Certain characteristics enhance the value of these events, notably in-person interaction and the inclusion of a broad range of expertise and backgrounds. Network members report these events positively impacting their professional lives, providing practical insights and experiences they can apply in their daily work. Crucially, fostering informal interactions among participants fosters deeper understanding, exploration of alternative solutions, and strengthens camaraderie and collaboration within the network.

### *Joint projects*

**Expanding collaboration opportunities via joint projects** beyond formal capacity building contexts can foster deeper and more impactful learning experiences. Interaction with peers from a variety of educational institutions not only broadens the teacher's network but also enhances their understanding of different teaching methodologies, contributing to a more enriched understanding of various instructional practices.

### *Opportunities to expand impact through recognized expertise*

**Professional recognition** is often highlighted as a key benefit derived from participation in national stakeholder networks. Nonetheless, there is significant demand for this recognition to extend beyond accolades, to professional opportunities that empower members to make broader, more influential contributions.

### *Access to personalized support and guidance*

Complementing large-scale capacity-building efforts, **personalized support and guidance** serve as significant aids, especially for educators with limited tech proficiency or those resistant to change.

### *Knowledge sharing platforms*

Local and pan-European online engagement platforms and social media groups offer a vital digital infrastructure that supports collaboration, communication, knowledge sharing, and learning within regional innovation hubs. They empower stakeholders to connect, exchange ideas, access resources, and collectively drive the advancement of digital innovation in education.

### *Access to network-disseminated materials*

Resources distributed through the networks and local online engagement platforms are invaluable. These materials constitute a rich information repository, granting members easy access to vital resources that might otherwise be challenging to obtain.

## **Key implications for policy and practice**

Our findings point to several policy and practice implications to support establishing and nurturing sustainable connections with key stakeholders in digital innovation initiatives to ensure the long-term sustainability of regional innovation hubs. Below is a brief summary of them. Further explanations can be found in the following chapters.

- Encourage in-person interaction, diverse participation and extended collaboration opportunities among network members.
- Organize regular workshops and webinars and incorporate hands-on activities and collaborative-problem solving through joint projects that allow members to learn new skills and also apply those into practice.
- Facilitate casual networking opportunities to share best practices, and learn from each other.
- Do not underestimate practical considerations like certification and financial support.
- Create an online platform and/or database and/or train users to adopt already existing ones. Create online communities for connection and expertise sharing.
- Provide ongoing support through mentoring and peer support.

## **Introduction**

The iHub4Schools project brings together various entities, such as research institutions, teacher training institutions, schools teams, and local educational authorities, to implement a comprehensive and adaptable whole-school mentoring model aimed at adopting technology-enhanced learning practices in four European pilot countries. This collaboration is facilitated through the establishment of Regional Innovation Hubs, which serve as central points for fostering collaboration, innovation, and growth. These hubs connect diverse networks within the pilot countries, including co-creation teams (comprising teachers, teacher trainers, researchers, and industry partners, for example), responsible for designing, implementing, monitoring, and sharing digital innovation throughout the project's duration, and national stakeholder networks focusing on disseminating and exploiting project results (involving, for example, researchers, policy bodies, industry, and NGOs). Figure 1 illustrates the starting point we had in the project. We assumed that we have schools in the hubs and they are scaled and additional stakeholders will be involved. Within regional innovation hubs, national stakeholder networks are well positioned to scale up the innovation by leveraging co-creation networks to expand the innovation across various sites.



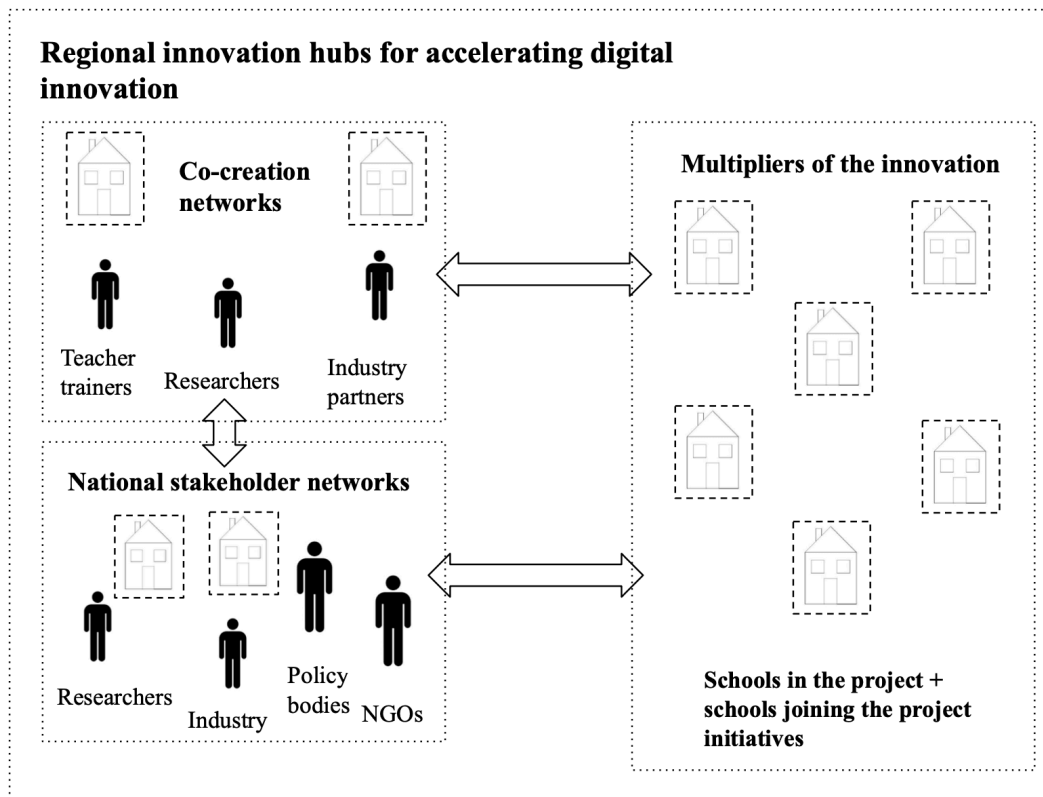


Figure 1. Regional Innovation Hubs in iHub4Schools project

A key feature of the iHub4Schools project is the **collaboration among multiple stakeholders** within partner countries, working together to address a shared, pressing issue. Stakeholder engagement is a vital component of the iHub4Schools project. Stakeholders are individuals or groups who may be affected by, or have an impact on, an effort, initiative, or project. They may also include people who have a strong interest in the project for academic, institutional, professional, or political reasons, even though they are not directly affected by it. One way to characterize stakeholders is by their relationship to the initiative in question. Primary stakeholders are the people or groups that stand to be directly affected, either positively or negatively, by an initiative or the actions of an agency, institution, or organization. In the iHub4Schools project, primary stakeholders are school leaders, teachers, teacher networks, and teacher trainers. Secondary stakeholders are people or groups that are indirectly affected, either positively or negatively, by an initiative or the actions of an agency, institution, or organization. In the iHub4Schools project, secondary stakeholders are educational institutions, professional associations, ICT trainers, educational technology industry partners and local educational authorities, policy makers and national/regional agencies. Their collective involvement contributes to the project's success and its ability to drive meaningful change in educational practices.

The sustainability and success of these networks (or hub, understood as a collection of networks) are heavily dependent on members deriving value from their involvement. Lacking such value, they may become disengaged, leading to the disintegration of the network. Value creation within networks can occur through various activities and interactions, which can result in short or long-term benefits for participants, such as finding solutions to problems, learning useful skills, developing social relations, and getting access to



privileged resources. Ensuring that stakeholders experience meaningful value from their involvement is essential to maintaining robust, cohesive networks that drive lasting, positive change.

Wenger et al.'s (2011) value creation framework offers a valuable perspective for examining the value generated by individuals through their involvement in social learning activities. This framework consists of five cycles that offer insight into how participation in networks contributes to value creation for network members. Network members may find value in one or more cycles as a result of their collaboration and engagement with one another; however, this does not mean that one cycle of value is superior to another. The framework further emphasizes that assessing value creation should involve linking specific activities and interactions to desired outcomes. In the context of the iHub4School's project, we have been referring to these activities and interactions as hub-embedded support mechanisms for engagement and sustainability.

The current document, titled “**Support Mechanisms for Engagement and Sustainability**,” presents an engagement and sustainability methodology developed through a co-construction process initiated at a consortium meeting in January 2022. This methodology has been iteratively revised based on the project's learning experiences and insights from network members across the participating regional hubs. Serving as a toolkit, it provides concrete suggestions for multi-stakeholder networks or hubs focused on digital innovation initiatives, aiming to help build and maintain sustainable connections with stakeholders. In Deliverable D3.3, we provide guidance on how to identify and engage with stakeholders. This includes detailed information on the school mentoring model, which is a key component of the iHub4Schools methodology. The model emphasizes the involvement of all essential stakeholders and suggests a meeting at the outset of the mentoring process to ensure their active participation.

The proposal for engagement and sustainability support mechanism has been significantly revised since the initial versions presented in earlier versions of D2.2, informed by lessons learned from the experiences of the Regional Innovation Hubs, our consortium's reflections, and primarily a study conducted within the iHub4Schools project. The study, drawing on Wenger et al.'s (2011) value creation framework, focused on identifying the support mechanisms, such as activities, interaction, and structures, that stakeholders perceive as significant in helping them generate value from participating in the hubs' networks. To gather insights, we consulted 26 individuals with diverse backgrounds, encompassing teachers, school leaders, mentors, educational technologists, policy makers, and a researcher, who participated in either interviews (n= 14) or surveys (n= 12). This valuable input has greatly influenced the revision of our stakeholder engagement toolkit.

This document is organized into six sections, each focused on a specific support mechanism which we developed based on previously mentioned study and lessons learnt:

1. Capacity building opportunities
2. Joint projects
3. Opportunities to expand impact through recognized expertise
4. Access to personalized support and guidance
5. Knowledge sharing platforms
6. Access to network-disseminated materials

Each section consists of the following components: a) Lessons learned; b) Recommendations and c) Examples from iHub4Schools based on the lessons learnt in the study carried out in this WP. In presenting

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this toolkit with support mechanisms, it is important to note that these mechanisms play a role after networks are ready to initiate the project. Furthermore, our conclusions are not the only or definitive ways to create sustainable connections with stakeholders - there are multiple approaches, and the support mechanisms best suited for regional innovation hubs will vary depending on the topic, schools involved, the local context, and country. It is essential to emphasize that final support mechanisms proposed in this deliverable have been conceptualized through the lived experience of both stakeholders directly involved in the iHub4Schools project as well as those on networks that inspired the project. The examples we provide are not exhaustive and are intended to offer other initiatives a range of possibilities to consider.

## Section 1. Capacity Building Opportunities

### a. Lessons from iHub4Schools' networks

Findings from our study indicate that regional innovation hub network members place great importance on **participating in a variety of events**, such as training, seminars, workshops, regular meetings, conferences, seasonal schools, and networking gatherings. Such events are clustered as capacity building opportunities, and members across two networks in Finland and Estonia shared how these events positively impacted their professional lives: *Through these additional training and meetings, I aim to improve my job performance by bringing new skills to my school. Teaching can often be monotonous and numbing, so these events serve as a lifeline amid daily routines. It's refreshing to meet like-minded individuals and exchange updates from various schools (Teacher, Finland); The training received through the program, as well as seminars and other events involving mentor networks, has been incredibly useful for sharing experiences and acquiring tips and tricks (Mentor, Estonia).* These statements underscore the **diverse benefits of network events**, which include improvements in knowledge and skills, increased motivation, and opportunities to share experiences and insights with fellow professionals.

Network members also highlight the importance of certain characteristics that enhance the value of these events for them. They expressed a preference for **in-person interaction and a diverse mix of expertise and backgrounds**. The benefits of engaging with a diverse pool of stakeholders are evident as follows: *Different people, different schools - I observed others using technology. I gained valuable examples from other schools, seeing how others use it, and adapted those ideas for my own use. If you stay within your own bubble and don't observe others, you won't progress. You may think you know everything, but when you see others, you grow... (Educational technologist, Estonia).* This quote demonstrates how the presence of diverse stakeholders contributes to a richer learner experience, broader perspectives, and enhanced collaboration and innovation. By including participants from different schools and backgrounds, **network members can observe a wide range of practices and ideas**, enabling them to adapt and implement these in their own contexts. Engaging with experts from various levels of education, edtech companies, and municipalities of different sizes offers opportunities for interdisciplinary and collaboration. Additionally, involving **experienced teachers, experts, and government representatives** in network events ensures that each stakeholder's unique perspective is considered, promoting a more comprehensive understanding of the issues at hand.

Additionally, members highlighted the importance of **hands-on activities** such as homework assignments as well as opportunities for experience sharing and collective problem-solving during events. By

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incorporating these various elements into the events, members can gain practical insights and experience that directly support their everyday work. One Estonian school leader shared the value of participating in such activities during network events: *Participating in training sessions and engaging with activities such as homeworks between training sessions have been significant events for me (School leader, Estonia)*. This quote suggests that practical, hands-on experiences can enhance the learning process and make events more meaningful for participants.

In addition to more formal opportunities, the members stressed the value of creating **dedicated spaces for casual networking during these events**. One teacher in Finland explained: *While lectures and lessons learned at events were important, informal table discussions during coffee breaks and lunch hours were even more significant. Although attending meetings or training sessions after a busy day can be challenging, I often return home full of enthusiasm and eager to try new things. These casual interactions have helped clarify my thoughts, provide alternative solutions to problems or challenges, and allowed me to share tips or ideas to problems or challenges, and allowed me to share tips or ideas on how I've addressed issues myself (Teacher, Finland)*. This reflection demonstrates the importance of providing opportunities for informal interactions among participants, as these exchanges can lead to deeper insights, the discovery of alternative solutions, and a stronger sense of camaraderie and collaboration among network members.

Finally, the significance of **practical aspects** in enhancing the value derived from network members' participation in these events is evident in their responses. Aspects such as obtaining certifications, receiving financial support, having events scheduled during their work hours, and providing longer learning opportunities were highlighted by the participants. One teacher from Estonia expressed appreciation for the **certification** aspect: *I value obtaining new knowledge and skills, as well as having certificates to validate that new knowledge (Teacher, Estonia)*. Additionally, a mentor from Estonia shared the importance of **financial support**: *The financial aspect, such as receiving extra money, is valuable to me (Mentor, Estonia)*. These quotes suggest that these practical considerations are important factors that need to be addressed in order to maximize the benefits of participating in these events. These considerations work alongside the other key dimensions previously highlighted, including in-person events, diverse stakeholder involvement, opportunities for sharing and problem-solving, observation of best practices, and experimentation with innovations. Additionally, creating spaces for casual networking allows participants to freely exchange ideas and experiences, contributing to collective learning and stronger connections between members. Collectively, these various elements work together to create an environment that supports the generation of immediate and potential value for network members.

## **b. Recommendations**

Based on the findings from the study, we recommend the following:

- Organize **diverse capacity building events**: Plan various events, such as training, seminars, workshops, regular meetings, conferences, seasonal schools, and networking gatherings, to address the diverse needs and preferences of network members. Reserve enough time for informal discussions as well.
- Encourage **in-person interaction and diverse participation**: Encourage in-person engagement and include participants with a wide range of expertise and backgrounds at events to foster a richer learning experience, broader perspectives, and enhance collaboration and innovation.

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- Incorporate **hands-on activities and collaborative-problem solving**: Integrate hands-on activities, experience sharing, and collective problem-solving into events to provide practical insights and direct support for participants' everyday work.
- Facilitate **casual networking opportunities**: Create dedicated spaces for informal networking during events, allowing participants to freely exchange ideas and experiences, contribute to collective learning, and strengthen connections between members.
- Address the **motivation and incentives**: Consider the importance of practical considerations, such as certifications, financial support, event scheduling, and longer learning opportunities to maximize the benefits of participation for network members. Regard also the non-financial rewards such as the possibility to participate in conferences.

### C. Example from the iHub4Schools

#### **ENHANCING TEACHERS DIGITAL COMPETENCES BY COMBINED TRAININGS AND PEER LEARNING**

A practical example of Regional innovation hubs has been successfully implemented in Georgia aimed at improving the digital skills of teachers, enhancing collaboration in and between schools, developing sharing of good practice of applying digital tools among teachers. Program covered 5 schools of region and 100 teachers.

The one year program commenced by the approach/method **Measuring Teachers' Digital Competence** using Self-assessment tool **SELFIEforTEACHERS**, which gave valuable insights about teachers' needs. After identifying the major needs workshops and trainings were held where innovative digital tools and teaching practices applying those tools were introduced. These sessions aimed to equip teachers with the necessary knowledge and tools to effectively incorporate technology into their teaching practices. We started sessions from the **training on introducing general available platforms** in Georgia. The rest of the workshops and training sessions were specifically designed to enhance teachers' digital skills in applying digital tools and platforms in their teaching practices. Padlet, Mentimeter, Worldwall, Kahoot, Bookcreator, Blooket, Cueprompter, Socrative, Polleverywhere and many other platforms were introduced to teachers. The teachers actively participated in these trainings, engaging in hands-on activities and discussions to deepen their understanding of digital tools and their applications in the classroom.

At the second stage of the mentoring program at schools commenced that was called **Combined Trainings and Peer Learning**. Mentors, researchers from university, were assigned to each school. Groups were created from the teachers who participated in above mentioned trainings and the teachers who did not to reach out to more teacher community and cover whole school. Both individual and group meetings were held. At the meetings the obstacles and good practices were shared. Trained teachers shared, supported and assisted the rest of the teachers in applying different digital tools. Teachers conveyed that they observed the benefit of the program in their work when they applied the techniques and tools introduced at the trainings in their classroom and that all this enhanced students involvement. To conclude the program, **a joint seminar** was held, bringing together all participating schools. This meeting provided an opportunity for teachers to showcase how they had successfully integrated new digital tools into their teaching methodologies. They presented their experiences and the outcomes of using these tools through informative presentations. The teachers' presentations served as a platform for sharing their innovative approaches with other schools. They demonstrated how the newly acquired digital skills positively impacted student engagement and learning outcomes. The exchange of ideas and experiences fostered collaboration and inspiration among the participants, promoting a culture of continuous improvement in digital teaching practices.

The experience gained within the program and the results achieved determine its sustainability. Although the program has ended, the schools have agreed to continue working together to share experiences and hold regular meetings. In addition to continuous cooperation with the mentoring team and using the acquired experience in the educational process, five public schools of the region will constantly support each other with digital technologies and innovative approaches in order to provide a rich teaching-learning process.

## Section 2. Joint projects

### a. Lessons from iHub4Schools' networks

Our study also revealed that while capacity building opportunities, such as workshops, conferences, were acknowledged by network members as highly valuable to their professional growth and expanding their professional network, they also pointed out that **extended opportunities for collaboration** can augment these experiences, leading to more meaningful learning. The following quote from a teacher in Finland offers insights into the benefits of extended collaborative opportunities for network members: *The most influential experiences for me have involved collaboration with digital pedagogy development with teachers from other schools in planning and implementing various tasks. Through these interactions, I've become acquainted with teachers in almost every school in my municipality and have had the opportunity to observe diverse practices across many different schools (Teacher, Finland)*. This quote demonstrates that collaboration with peers from different schools not only expands the teacher's network but also enriches their understanding of various teaching and learning practices.

### b. Recommendations

Based on the findings from the study, we recommend the following:

- Encourage **extended collaboration opportunities** among network members to complement capacity building events and add depth to learning experiences. This could be achieved, for example, by providing a platform or framework that facilitates joint project development and implementation.
- Support **joint projects** within a school and between schools that allow members to apply their skills and knowledge into practice, share best practices, and learn from each other in a more hands-on way.
- Promote **joint activities** with students within a school and between schools. That allows teachers to see what is being done with students and how to integrate different activities also in their teaching.
- Foster and **encourage ongoing dialogue** among network members by establishing regular communication channels and providing opportunities for members to connect and share their experiences which can initiate new joint projects. Also, continuous exchange of ideas and experiences can help build a strong, collaborative community that drives innovation and growth.

### c. Example from the iHub4Schools

#### **THE DIGITAL PATH IMPLEMENTATION IN FINLAND. JOINT PROJECT BETWEEN TWO SCHOOLS**

An illustrative case of a joint project focused on the implementation of a digital skills curriculum for elementary school students in Finland. The project brought together principals and teachers from two different schools, to work together and to create teaching and learning material for using digital technology based on the “DigiPath”, a digital skills curriculum created by the local school administration.

The joint project spanned over a period of two years, allowing for more sustainable relationships to develop among teachers. All teachers participated in the process. From both schools, two teachers with digital responsibilities lead the work in their own school and formed a joint coordination team together. They had regular meetings with two mentors who were from the University of Helsinki. Principals participated often in the meetings. The mentors worked mainly with the coordination team, but they also participated as experts in some teacher meetings and workshops which they organised with the coordination teams.

The mentoring followed the phases of the School Mentoring Model. During the mentoring process, the aims took shape little by little, and besides increasing collaboration between schools, coordination team and teachers, the coordination team decided to concentrate on creating teaching and learning material for using digital technology for “DigiPath”, a service which the local school administration had created at the same time that the mentoring started in the schools. The reason for this was that by this way teachers got familiar with the requirements of digital technology at all grade levels and by creating material together with other teachers they also got engaged in using the materials. Furthermore, because teachers from two schools worked in class level teams, not language groups, they learned to know each other in a natural way.

The mentors met the coordination team 13 times, about an hour at a time, during the two years. The coordination team and the mentors organised two joint workshops for all teachers from both schools. In addition, the mentors gave a short presentation about the mentoring process in two teacher meetings in both schools. The collaboration between the schools was appreciated and the outcomes, scenarios about digital technology in learning practices were shared, also through the “DigiPath” repository of the local school administration.

## **Section 3. Opportunities to expand impact through recognized expertise**

### **a. Lessons from iHub4Schools’ networks**

In national networks, **achieving professional prominence** is often cited as a crucial motivation and

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incentive for participation. Many network members emphasized the importance of this aspect; however, they also stressed the equally significant need for expertise recognition through opportunities to make a broader impact. This recognition can manifest in various forms, such as being invited to speak at a range of events, collaborating for the benefit of fellow educators, offering consultations for different schools, and conducting workshops to share valuable experiences. For example: *As an expert, recognition and consultation opportunities naturally follow. You will be invited to various workshops to conduct sessions and share experiences (Educational technologist, Estonia); While recognition of excellence in mentoring is not very important to me, invitations to participate in various events may serve as evidence of my expertise (Mentor, Lithuania).*

These quotes reveal that network members appreciate both garnering recognition and having their expertise recognized. Recognition through invitations and opportunities not only validates their skills but also allows them to contribute to the broader educational community. Invitations and opportunities to showcase expertise may play a vital role as support mechanisms in multi-stakeholder networks. These opportunities not only generate value for individual network members but also foster the overall development of the network itself.

## **b. Recommendations**

Based on the findings from the study, we recommend the following:

- Bring together experienced network members with newcomers through mentorship programs.
- Organize regular workshops and webinars where network members can act as experts. Regulate practical activities led by network members to share their expertise on specific topics or techniques.
- Establish **online engagement platforms** for members to connect with individuals outside of their network and share and create knowledge and expertise on specific topics and challenges. For instance, sharing the lesson plans and tasks for the ViLLe platform to enhance students' problem-solving skills.
- **Establish partnerships** with other networks or organizations to provide members with opportunities to collaborate on projects or initiatives outside of their immediate network.

### **C. Example from the iHub4Schools**

#### **OPPORTUNITIES TO EXPAND IMPACT THROUGH RECOGNIZED EXPERTISE**

One example of a regional innovation hub that effectively utilizes opportunities to expand impact through recognized expertise is the „Co-Creation Program as a Research Accelerator for Scaling up the Educational Innovation“ from Estonia. The goal of the program has been to accelerate educational innovation. It has implemented a mentorship program that pairs experienced network members with newcomers. This means that there have been qualified research mentors from academia, mature EdTech mentors and experienced practitioners from educational institutions joined in teams with newcomers in the EdTech field.

The main idea is to support the development of evidence-based thinking and to foster collaboration between the parties to create EdTech innovations that meet the needs of schools. The program is divided into co-creation and mentoring sessions, reflection sessions, workshops and individual work time. As during the program, teams meet regularly with schools as well, they have an opportunity to involve students in the development process.

The program has had 3 iterations and has been mentoring all together 16 EdTech teams over those seasons.

EdTech representative A phrased the experience as following: „Positivity! I met many exemplary and helpful people. I got richer by the experience and I see it as a great benefit for self-development. I identified my weak points that I still need to work on. I gained more confidence to speak publicly about my idea. I saw how others solve problems and work together. I got good knowledge and tools to consider in product development“.

## **Section 4. Access to Personalized Support and Guidance**

### **a. Lessons from iHub4Schools' networks**

Members from national stakeholder networks also emphasized the significance of personalized approaches, such as one-on-one mentoring, that complement capacity building opportunities targeted at a larger group of teachers. This is particularly important for teachers who may be less proficient with technology or resistant to change. One mentor highlighted the benefits of customized training and the importance of establishing a more personal connection with teachers, stating: *I feel differently about consulting and mentoring. I think it is important to listen to people and be there for them as a person. For those who are not highly skilled or are resistant to change, training alone may not be effective. Instead, a more personalized approach through mentoring and or consulting can be more meaningful for these individuals (Mentor, Estonia).*

This perspective suggests that a one-size-fits all approach to professional development in these networks might not be sufficient for addressing the diverse needs and backgrounds of teachers. By incorporating

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personalized approaches, such as mentoring and consulting, educational stakeholders can better support teachers with varying levels of technology proficiency and openness to change.

## **b. Recommendations**

Based on the findings from the study, we recommend the following:

- Establish mentoring programs that provide one-on-one support to teachers who may need additional assistance or guidance with integrating technology into their teaching practice.
- Create opportunities for teachers to connect with peers who share similar challenges or interests, providing a support network for ongoing learning and growth.
- Provide ongoing support and follow-up to ensure that teachers are able to implement new skills and knowledge effectively.

## **c. Example from the iHub4Schools**

### **ACCESS TO PERSONALIZED SUPPORT AND GUIDANCE SPOTLIGHT**

The Digital Accelerator Program established by the Estonian regional innovation hub is an excellent illustration of how personalized assistance and guidance can be effectively utilized. This initiative focuses on enhancing digital proficiency among school teams, enabling them to seamlessly integrate digital technology into their everyday teaching practices. The program achieves this by providing professional mentors to support and guide the teams throughout their journey.

The program's framework entailed a two-fold mentoring approach for the participating schools, initially encompassing both individual and group sessions. The mentors first gauged the digital competency level of the staff, subsequently sorting them into two training groups: basic and advanced. This assessment was followed by core mentoring sessions - either one-on-one or in group settings - tailored specifically to address the pedagogical staff's unique needs.

During a six-month period, the program managed to deliver a remarkable total of 305 academic hours of educational technology mentoring. Each participating school was allocated a dedicated mentor, who was carefully selected based on the school's specific needs.

Notably, these mentoring sessions were incorporated seamlessly into the regular school schedule, conducted during the school day and within the school premises. Two educators from the Estonian hub's pilot schools applauded the convenience of this arrangement.

Teacher A conveyed, "Very good contact with mentors. Could ask for help at any time.."

## Section 5. Knowledge sharing platforms to engage stakeholders

### a. Lessons from iHub4Schools' networks

An engagement platform concept in educational Regional Innovation Hubs refers to an online platform designed to foster collaboration, interaction, and engagement among various stakeholders within the network. These platforms aim to facilitate communication, knowledge sharing, and networking among mentors, teachers, leaders, researchers, teacher trainers, industry professionals, and community members.

Many network members noted the use of social media groups and chat platforms as key mechanisms for information sharing and receiving support from other members. These digital communication tools act as local engagement platforms and **offer a range of benefits, including ease of use and time-saving possibilities, allowing members to access needed information at their own pace and engage stakeholders into knowledge sharing and creation process.** A teacher from an Estonia network noted: *Facebook groups remain an effective and neutral platform for our generation. Information posted on the group's wall offers flexibility - if I have time today, I can check for updates; if not, I can choose not to visit the page and read the content. Additionally, we used a Messenger chat group among the teachers to discuss problems and support one another* (Teacher, Estonia).

Participants also suggested that digital communication channels provide an opportunity for network members to engage in meaningful discussions, share information, and remain connected during or after more formal network activities. This added layer of support enables members to receive ongoing support beyond the time-limited interactions during formal events.

### b. Recommendations

Based on the findings from the study, we recommend the following:

- Establish **online social media groups** to promote the communication between the members of the networks to share knowledge and good practices, engage in discussions, and seek support from others.
- Create a **centralized platform** for storing and sharing resources, including best practices, lesson plans, and other relevant information.
- Encourage **active participation in digital communication channels** through incentives or recognition programs, such as highlighting contributions or offering opportunities for members to lead discussion or share their expertise.
- Provide **training and support** for members to effectively use digital communication tools and platforms.

### **C. Example from the iHub4Schools**

#### **KNOWLEDGE SHARING PLATFORMS SPOTLIGHT**

In Georgia, teachers have observed and appreciated the utilization of social media groups and chat platforms as essential means for exchanging information. These digital communication tools were very useful mainly in terms of time-efficient possibilities. Furthermore, it encouraged teachers active participation in online or offline meetings and discussions. Also, they allow members to access the required information at their own convenience. Moreover, these networks have greatly facilitated the sharing of information regarding various online teaching tools. The convenience of digital platforms has ensured that everyone, being online and having access to computers, could readily participate in the dissemination and exploration of different online teaching tools and resources that enabled educators to enhance their teaching methodology and incorporate new teaching strategies, tools and approaches into their classrooms effectively.

Additionally, through Facebook groups and chat platforms, teachers were able to receive information quickly, allowing them to stay informed about the trainings, webinars and workshops and other relevant news.

In conclusion, the use of social media groups and chat platforms in Georgia has not only facilitated knowledge sharing and support among network users but has also empowered teachers by giving them instant access to useful updates and events.

## **Section 6. Access to Network-disseminated materials**

### **a. Lessons from our regional innovation hubs' networks**

Network-disseminated materials within educational Regional Innovation Hubs encompass resources that are developed, implemented, and exchanged during network activities. These materials possess significant potential to enhance the professional activities of network members even beyond their active participation in the network, extending to other realms of their work. To facilitate the dissemination of these materials, local engagement platforms should be established to support their sharing among network participants.

Findings from our study indicate that materials and resources disseminated via the networks play a fundamental role in generating value for its members: *It is through the associations that I have access to documents and sources of information that I would hardly have found otherwise (Teacher, Finland)*. This quote demonstrates the tangible utility of network resources in the participant's daily professional activities, underscoring the network's role in providing relevant and directly applicable materials. Similarly, teacher from Finland, echoed these sentiments, saying, *Yes, more materials, and some are such that I have access only through the network. I have used them in my daily work (Teacher, Finland)*. This statement suggests that the network's resources serve as an invaluable repository of otherwise hard-to-find information. Finally, a participant from Georgia noted: *Has given us access to new tools, methods, and new sources of information that were not previously available to us (Teacher, Georgia)*, pointing to the network's role in expanding the participant's professional toolkit, providing new strategies and knowledge that can invigorate

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their practice and spur professional growth. E.g. in the Finnish cases, teachers provided scenarios to a local platform, which was created by the local admin.

## **b. Recommendations**

Based on the findings from the study, we recommend the following:

- Establish an effective system that guarantees the efficient documentation and organization of all resources in a reliable manner.
- Leverage the flexibility and convenience of social media and other digital platforms for the broad dissemination of resources, updates, and other relevant information, allowing members to access needed information at their own pace and convenience.
- Encourage members to create and share learning and teaching resources (lesson plans, exercises, assignments etc) they have found helpful in their work and discuss their experiences with using these resources.
- Ensure that the resources remain accessible on an ongoing basis, even after formal network activities or events.
- Regularly organize training sessions to equip members with the necessary skills to effectively navigate, create materials and utilize the platforms through which resources are disseminated.
- Highlight the contributions of members and offer opportunities for them to share their expertise as a way of motivating active participation and resource sharing within the network. Recognition programs or incentives could be implemented to this effect.

### c. Example from the iHub4Schools

#### ACCESS TO NETWORK-DISSEMINATED MATERIALS

The usage of the Virtual Learning Environment (ViLLE) is an example of how access to network-disseminated materials can be effectively utilized. ViLLE is a **collaborative learning platform** that was developed by the Centre of Learning Analytics at the University of Turku, Finland. It provides students and teachers with detailed information about their learning process through immediate feedback and learning analytics. **Teachers can create their own exercises or utilize materials created by others.** Most exercises are automatically assessed, allowing teachers to dedicate more time to supporting their students.

ViLLE offers a **vast array of learning resources** for various school subjects. In iHub4schools project we focused on **development of computational thinking**, which includes areas such as information processing, data literacy, and problem-solving. **Thousands of exercises** on computational thinking for students ranging from primary to secondary school **were created** during last year. These exercises are complemented by didactical materials and explanation for teachers. Lithuanian schools participating in the iHub4schools project have started using the ViLLE platform in their lessons, enhancing their digital competencies. Teachers have expressed great satisfaction in observing how much their students enjoy solving problems on ViLLE and how they can easily monitor their students' progress using the platform's learning analytics.

This initiative **aims to enhance digital proficiency among school teams**, enabling them to seamlessly integrate digital technology into their everyday teaching practices. The initiative achieves this by providing professional mentors who support and guide the teams in using ViLLE materials and creating their own lessons. The initiative follows a two-fold mentoring approach: firstly, a general workshop is organized for newly joining teams, and then each participating school receives individual consultations, primarily conducted online but occasionally supplemented by detailed workshops held at the schools to address the unique needs of the pedagogical staff. Over the course of a year, the team from Vilnius University has delivered approximately 80 hours of face-to-face workshops in 12 schools and over 100 academic hours of online educational technology consultations. Importantly, these mentoring sessions have been seamlessly incorporated into the regular school schedule, taking place during the school day and within the school premises.

## CONCLUSION

In this document, we unveil a refined methodology purpose-built to enhance engagement and drive sustainability, a cornerstone of the iHub4Schools project. This methodology, shaped through an iterative refinement process, incorporates valuable insights from network members across various regional hubs, as well as lessons gleaned from the progression of the project.

A critical pillar of this methodology is a study undertaken during the project's life cycle, steered by the **value creation framework** articulated by Wenger et al. (2011). This study has been instrumental in identifying vital support mechanisms - activities, interactions, and structures - perceived by stakeholders as

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valuable in their engagement with diverse networks. To gather this comprehensive understanding, we consulted with 26 stakeholders of varying backgrounds, including teachers, school leaders, mentors, educational technologists, policy makers, and a researcher from iHub4Schools project partner countries. They offered their unique insights and perspectives through participation in interviews and surveys. Findings illuminate how members with varying perspectives and levels of expertise co-construct new forms of meaning and understanding while participating in multi-stakeholder networks in ways that are individually and collectively valuable. We found evidence, et the members of multi-stakeholder networks perceive that networks can provide immediate and potential value to teachers through their engagement with colleagues in a community and gaining new knowledge and members particularly appreciated opportunities to interact with “the experts. In the future studies we can elaborate more on how to support the network members to also realize and reframe value, which could lead to more sustainable and scalable adoption of innovation.

As a result of this deliverable to sum up our experiences, we present **a toolkit with support mechanisms for multi-stakeholder networks** or hubs centered on digital innovation initiatives, which are summarized in the figure below (see Figure 2).

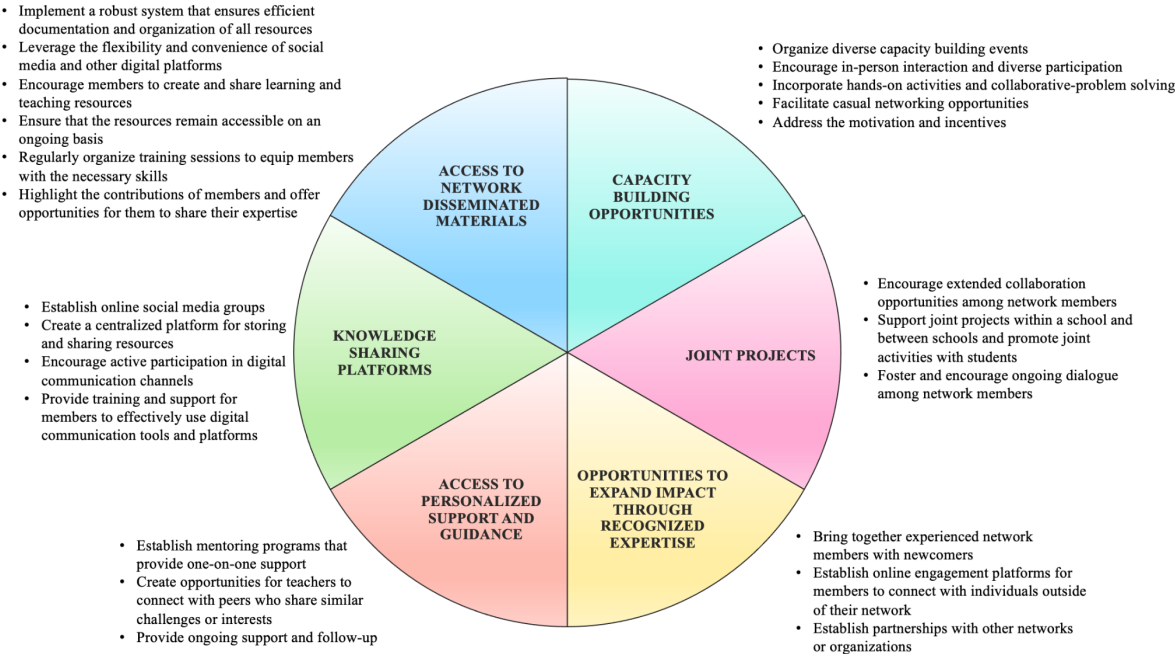


Figure 2. Support mechanisms and recommendations for hubs

The primary objective of these tips is to support the creation and fortification of enduring stakeholder relationships, thereby contributing to the sustainability of these networks. To enhance the adaptability of our findings to various contexts, we deliver suggestions specifically segmented for distinct stakeholder groups as following:

To **Leading Digital Innovation Initiatives**, consider **creating a diverse ecosystem** of digital innovation through capacity building events and regular support. Use online engagement platforms for knowledge exchange and collaboration, ensure resources are efficiently documented and accessible.

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To **Local Educational Authorities**, support your schools through **diverse capacity-building events**, encourage the participation in mentorship programs and collaborative projects. Make sure resources and platforms for information exchange are accessible and understandable.

To **Research Institutions**, provide a diverse and **rich learning experience** through capacity-building events, **support joint projects and collaborations**. Utilize online communities for knowledge exchange and support.

To **Teacher Training Institutions**, develop **mentoring programs** and provide ongoing support through workshops and other stakeholder events. Create online communities where members can engage in discussions and seek support, and ensure resources are centralized, accessible, and effectively utilized.

To **School Teams**, actively **participate in capacity-building events** for hands-on learning, use online platforms for information sharing, and get involved in mentorship programs. Ensure all available resources are being used effectively.

To **Mentors**, **engage in diverse capacity-building events, contribute to joint projects** and online communities, and **encourage active participation** in digital communication channels. Make sure resources are well-documented and organized.

The results of this deliverable describe the individual level focus on support mechanisms in multi-stakeholder networks. The path forward from here involves implementing these recommendations and extending the lessons to Regional Innovation Hubs and continuously refining the engagement and sustainability methodology. By doing so, we can support digital innovation initiatives, facilitate stakeholder networking, and ensure that networks maintain their value for members in the long term.

As we put forth this toolkit, it is crucial to underscore that the highlighted support mechanisms come into effect after networks are poised to launch their respective projects. Furthermore, our recommendations do not constitute an exhaustive or final set of strategies for building sustainable stakeholder connections; there exists a multitude of viable approaches. The most fitting support mechanisms for regional innovation hubs will hinge on various factors such as the specific topic, the schools participating, the local context, and the country.

It is also imperative to stress that the ultimate support mechanisms proposed in this deliverable have been shaped by the first-hand experiences of stakeholders intimately involved in the iHub4Schools project, as well as those within networks that informed the project's inception. The examples we include here are illustrative rather than comprehensive, designed to present a spectrum of possibilities for other initiatives to draw upon.



TWITTER

@IHub4schools



FACEBOOK

@iHub4schools



WEBSITE

[ihub4schools.eu/](http://ihub4schools.eu/)



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