



Digivisio 2030: Finland as a model country for flexible learning

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Abstract

Digivisio 2030, a joint programme between Finnish universities and universities of applied sciences, will bring greater opportunities for all learners to learn flexibly. The aim is to restructure Finland's higher education over the next decade by means of digitalization and collaboration and to make Finland a model country for flexible learning.

The project will develop common procedures for higher education institutions and create a shared digital service platform. Other key areas for development include digital pedagogy and guidance based on the learner's path and shared data.

The aim is that degree students, lifelong learners and those without a student place can study flexibly, selecting courses from all Finnish higher education institutions irrespective of organizational boundaries and geographical location. By implementing the vision, Finnish higher education institutions can create a robust international competitive edge for Finland as a society and for every citizen as a learner.

1 Background to Digivisio 2030

The Finnish Ministry of Education and Culture's Vision for Higher Education and Research in Finland 2030 inspired the Finnish higher education institutions to discuss education's future challenges and joint solutions. The need for long-term collaboration, national and scalable digital solutions and more effective development measures was recognized. Digitalization was identified as one of the most significant upcoming challenges. It is an important dynamic in the society and a driver of change in the institutions' modes of operation, providing education and content.

In order to provide the prerequisites for and to carry on the reform, the Digivisio 2030 initiative, to which all higher education institutions in Finland are committed to, was founded. The goal is to reshape

Finnish higher education by means of digitalization and to make Finland a model country for flexible learning in the next ten years.

Every Finnish higher education institute is committed to this long-term program. There is a joint management and decision model for the programme where all the higher education institutions are represented. The planning and preparation work were funded by the higher education institutions and funding for the programme (2021-2024) was granted in the end of 2020 by the Ministry of Education and Culture. The implementation phase was started in the beginning of 2021. In the beginning, a joint target scenario planning was an important part of the work, as well as recognizing opportunities, threats and hindrances on the way to the target scenario. Only after this the more specific plans were accepted by the higher education institutions. The programme is a change programme, including significant ICT-development. However, to achieve the target scenario, changes need to be made several levels: the level of legislation, the level of joint operating models and service concepts of higher education institutions as well as on the level of architecture, ICT-solutions and infrastructure.

2 Digivisio 2030 objectives

The objective of Digivisio 2030 is to create, as mutual and stakeholder cooperation:

1. A national digital service platform that
 - a) enables the compatibility of digital services between higher education institutions,
 - b) provides a “my data” service for the learner and integrates the accumulation of the learner’s competence before and after the higher education in the learning and career path, and
 - c) improves the compatibility of the actors’ IT services and lowers the threshold for utilizing national solutions.
2. Guidance based on digital pedagogics, the learner’s path and shared data, which
 - a) supports studies and student well-being regardless of time and place and in an accessible way,
 - b) introduces AI solutions to aid the guidance, and
 - c) places the learner’s benefit at the center of development.
3. Support for change management for higher education institutions, so that we can
 - a) introduce the national digital service platform,
 - b) digitize student administration processes and admission to higher education institutions,
 - c) support the evolution of higher education institutions into open communities managed by information, and
 - d) make data available for individuals and the society.

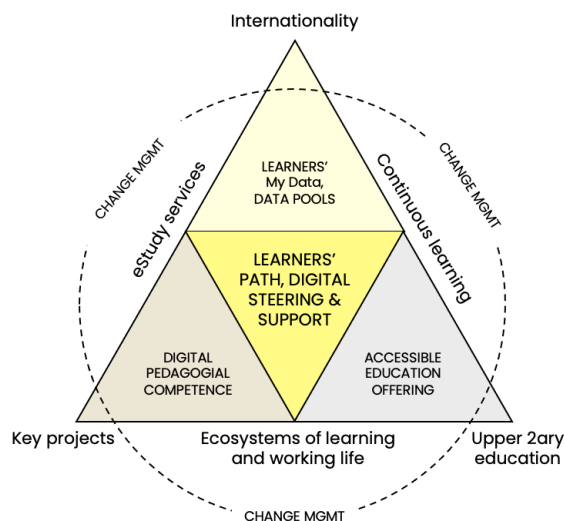


Figure 1: Digivisio 2030 framework

3 Present state and challenges ahead

Various development projects of higher education institutions in Finland have succeeded in bringing together common solutions that are available to a wide range of users, and funding for these solutions has been secured. However, the development of digital services in higher education institutions has moved forward based on the work of particular higher education institutions operating either alone or as a consortium. This has enabled a rapid culture of experimentation, but the lack of both unified data platforms and a national data pool has impeded the realization of the Digivisio objectives.

The challenge is to integrate fragmented and differentiated service models and operating models and tackle the lack of systematic development, common concepts and standards. Harmonization and management of data requires developing and maintaining multiple interfaces and data transfer systems. This is not economically or functionally feasible, which leads to solutions that are good and effective from the learner's point of view not achieving widespread use. The solutions may even disappear once the project is over, as individual higher education institutions may not have the funding for their upkeep.

The challenge posed by existing information systems can be seen by comparing the current situation of the learning focus area with the Digivisio 2030 target. Higher education institutions currently use at least 1404 different information systems, of which 376 are teaching and study administration information systems. In the absence of significant structural changes, data transfer and system interoperability issues are using up an increasing amount of resources. Digivisio's goal of shared information and platforms enables rapid and cost-effective development of services, while higher education institutions' use of harmonized information models enables solutions to be used by all

learners wherever and whenever. In the medium term, these developments would lead to a decrease in the number of systems in use and an improvement in the services used by the learner as resources are transferred from maintenance to ongoing development.

In the higher education sector, shared platforms are no longer perceived as a challenge to the identity of any individual higher education institution. Quite to the contrary, it is understood that higher education institutions can develop and build services and the identity they support while at the same time ensuring the transferability and compatibility of knowledge throughout the education system. This same change has taken place in other solutions developed for the platform economy, such as the development of the banking sector in the 1990s or travel-related services in the 2010s.

Making the data as mobile as the students themselves demands compatible platform solutions that make accessible to a larger number of students a wide range of services, including those related to guidance, data mining or student well-being. This focuses the development inputs for the entire higher education sector and reduces the interface costs resulting from data mobility.

3.1 Digital pedagogy, guidance and well-being

The aim of the project is to create a ‘My Data’ portal for the learner which supports – and also requires – the joint development of national competence assessment and student well-being in order to promote high-quality learning. Digital environments enable the development of high-quality competence assessment and demonstration – alongside traditional entrance examinations, assignments and demonstrations – using high-quality pedagogical methods such as peer- and self-assessment methods that utilize artificial intelligence. The coronavirus crisis has highlighted the need to create commonly approved time- and place-independent ways of demonstrating competence. Making these ways available nationwide will also improve equality of access to higher education and study opportunities.

Finland has seen a deterioration in the well-being of students and a resulting increase in the risk of exclusion. The coronavirus crisis has further aggravated this situation. Poor well-being during studies weakens study progress, quality of learning and acquisition of lifelong learning skills. Indeed, there is a great need to support the well-being of students in higher education institutions, helping them acquire the skills for developing their own study skills and well-being. The digital environment enables support for students’ well-being skills by providing them with research-based support for their well-being and study skills through applying different practices and exercises. Artificial intelligence can be utilized in efforts to identify different groups of learners who need different kinds of guidance and support for their studies in general, and for study planning and implementation in particular. The effectiveness of these efforts is particularly enhanced by the use of preventive operating models.

Currently, the availability of welfare services varies nationwide and is focused on individual services. The aim is to develop a model for identifying at an early stage those students that are at risk of social exclusion and then assisting them in obtaining appropriate support. This will thus also serve as a model for early support and provide timely support to students at risk. At the same time, this also develops cooperation with the public health services. In the long term, the goal is to help students towards a healthy and sustainable working life.

The growing importance of digital pedagogy and support for well-being in the learning process requires new kinds of skills from teachers, tutors and education planners. The project builds networks

for developing and harmonizing the skills needed to take full advantage of the benefits of digitalization and to use the data owned by the learner to develop guidance and student well-being. The networks also serve to make international benchmarking and the continuous and systematic development of the quality of teaching and studies a part of the everyday work of all Finnish higher education institutions.

Improving the digital pedagogical skills of teaching staff and other staff requires more intensive use of methods for co-development, peer support and sharing of common knowledge as well as strengthening of communality. The siloing of guidance personnel is reduced using online guidance tools such as eHOPS, ePortfolio and Digiohjaus.

The Digivisio project builds functions for strengthening the learner's digital attachment to learning and the learning community and the use of the 'My Data' service for shaping the learner's path. Attachment to the community and the building of learning communities is supported through new methods of digital interaction. Digital guidance services are accessible and they support the inclusion and equality of the learner. These ensure that learners progress in their studies.

In the renewed higher education pedagogy approach to pedagogical management and practices, pedagogy includes not only teaching activities within the higher education institution but also pedagogical practices, cooperation and partnerships that are connected and networked in the wider social context. It is based on research- and development-based pedagogical development in line with the roadmap for the Vision for Higher Education and Research in Finland 2030.

The similarly diversifying student body also presents a challenge to the traditional model of guidance and pedagogy. In the future, there will be an increasingly heterogeneous group of learners within each learning offering, as competence will continue to be maintained and developed throughout their life. In addition, there is a need to develop education for groups with heterogeneous linguistic competence and cultural backgrounds. Further competence is also needed in the education of diverse groups with special needs due to factors such as the rise in numbers of international students that has resulted from demographic development.

Developing the effectiveness and functionality of digital pedagogy, learning guidance, studying, and student well-being requires both research and international cooperation. The 'My Data' service, shared by the entire higher education field and data owned by the learner, will provide for both research and development purposes the world's best platform and services for learners in both Finland's official languages and English.

4 Operational target state for 2030

Nationally shared and refined knowledge of learners, competencies, learning and learning content will comprise a unique success factor. Figure 2 presents the importance of shared information to the different actors in the Digivisio 2030 project. The learner has one identity through which they own their own learning path for the full duration of their life. Organizations that are part of the learning ecosystem have access to the shared data and a set of digital services that enable the matching of education supply and demand in a user-friendly and efficient manner and in accordance with the competence needs of the business sphere. Ecosystem services operate at the international, national and organizational level and can also be developed in an innovative way by commercial operators. The educational offering can

be expanded competitively to international target groups, and competent workers can be trained to meet the needs of the society.

Modifications to the timetable and prioritization of tasks are to be expected in such a significant programme. It is also clear that the practical benefits of the Digivisio 2030 solutions depend significantly on their integration into each higher education institution's own processes. This is why the operational benefits brought by the new solutions and the accessibility of the new services will be realized at different times across the country, depending on the decisions made by each higher education institution.

DIGIVISIO

Digivisio 2030: National learning data reserves for use by individuals and society

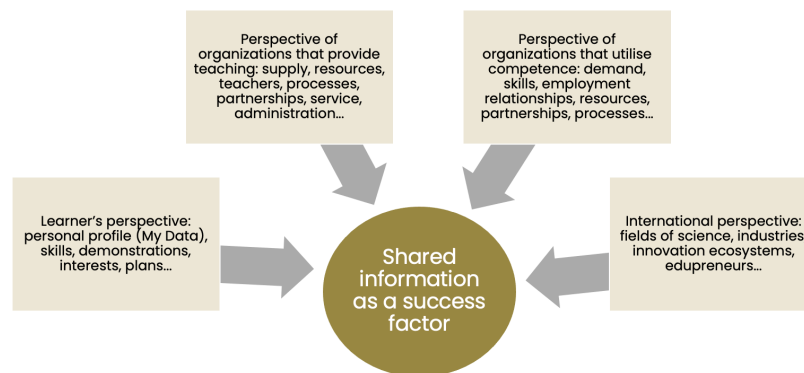


Figure 2: The importance of shared information to the different factors

4.1 The learner

The learner has one national and school-independent identity in the 'My Data' portal through which they own their own learning path for the full duration of their life. Using this national identity, the learner can identify themselves in the educational system regardless of their level of education, labor market status or higher education institution. The learner needs to enter their details into the portal only once. This data forms the foundation for guidance, counseling, competence recognition, and, if desired, job applications. 'My Data' is supplemented by the competence that has already been acquired on the path to higher education. This strong digital identity also supports the arrangements for digital entrance examinations. Higher education institutions' portfolio solutions, feedback solutions and other types of solutions that support competence development during studies can be integrated seamlessly into the platform.

Through the portal, learners are offered the best and most flexible learning opportunities in the world. The 'My Data' portal brings together the data generated during the learner's educational history

for their own use and helps strengthen the learning experiences, systematic processes and smooth learning throughout their career and at all levels of education.

The shared data pools and data models contained in the portal enable private and public operators to produce services directly for use by learners. Flexible consent management of personal data gives the learner the power to permit the use of their data for research purposes, or, for example, to market their own learner brand in social media channels.

The learner can take advantage of the open and easily accessible e-learning offerings of all higher education institutions. Comprehensive and smart learning offerings make it easier to develop labor market-oriented competence and to maintain competence levels according to their own personal needs. Competence assessments and analyses enable learners to update their competence to meet both present and future demands. Throughout the learner's entire learning path, they receive AI-based, individualized guidance services that support the learner through different life events. A school-independent and more coherent learning and service experience is in the interests of all learners.

The greatest benefit of Digivisio for the learner is the opportunity to develop their human capital flexibly in different life situations throughout their life. The studies offered are modular and combinable, and digitalization does not bind the studies to a particular time or place. In addition, clear processes for applying and registering for education make it easier to make education-related decisions, and prior learning is more smoothly identified and integrated into the studies. The learner's identity also serves as an effective identity for future scientific or artistic work, as it can be integrated with international researcher identities, confirming and supporting the researcher's career development.

4.2 Higher education institutions

In 2030, higher education institutions together comprise a knowledge-led, open, flexible and networked community. They have a shared national digital operating environment that is also open to actors in other countries. Within this environment, individual higher education institutions cooperate and profile their areas of strength. This joint work by higher education institutions serves the entire learning system, as the data- and learner-related needs and requirements are the same throughout the education system and working life. Higher education institutions around Finland offer high-quality, standardized and shared statutory basic services, thus improving the learners' service experience. Having shared basic services harmonizes the interpretations of the regulations governing education and training.

The benefits gained by the learner are central to the development work. Educational institutions are moving from administrative and system-oriented thinking to meeting different learning needs from the perspective of the individual, the business sphere and society, and in terms of national and international impact. The planning of education offerings and teaching, study processes and student guidance is based on continuous analysis of competence needs, identification of effective operating methods and rapid application of the data obtained.

Access to education and training improves because studying is not fixed to a set time and place nor to a particular higher education institution. Higher education institutions continue to play an important role as communities and shapers of the identity of learners and school personnel. The objectives and operating models of higher education institutions encourage teachers and learners to collaborate in a networked way, to continuously develop research- and work-based pedagogical development and to

produce communal learning material. This cooperation encourages co-development, which at its best leads to better learning outcomes and innovation.

4.3 The business sphere and the partners of higher education institutions

At the national level, Digivisio 2030 enables comprehensive identification of the education and competence needs of the society and companies as well as efficient designing of and access to the needed education provision for learners. Digivisio makes Finland a more attractive environment for knowledge-intensive sectors because employees are integrated into a comprehensive and flexible ecosystem of continuous learning. This assists in meeting the society's competence needs and raises the nation's level of education and competence.

Opening up data pools supports the transparency of science and research and effective data utilization. Data acquired on learning and the labor market is used for research, targeting of education and administration development. Operators and suppliers can build their services on top of this shared data foundation: efforts are made to publish data-pool-related outputs and solutions under public licenses and as open-source code that national and international operators can use in their own service development. The new learning ecosystems strengthened through the Digivisio project are dynamic entities that link higher education institutions, working life and learners and serve to promote the development of working life practices and learner competence.

By making national data pools available to individuals and the society, a globally unique learning ecosystem is created that brings an internationally competitive edge both to Finland as a society and to individual learners. Through the construction of this ecosystem, the business sphere also gains opportunities to create better value-added services and innovations. The interoperability of the ecosystem also reduces the duplication of effort among operators, thus boosting operational efficiency and enabling new investments or savings.

4.4 Finland (international perspective)

The Digivisio-based platform, with the support of digital services, enables Finland's educational offering to be opened up to international target groups in a broad and significantly more competitive way. This supports efforts such as the digital and sustainable mobility models being developed through EU-level educational cooperation. Experts trained in Finland are in demand as employees and partners irrespective of national borders. Digivisio supports the role of higher education institutions in the development of continuous learning in cooperation with government ministries, such as the Ministry of Economic Affairs and Employment, Ministry of Finance and Ministry of Social Affairs and Health. This boosts the attractiveness of Finland for human-capital-intensive companies and for international acquisition of expertise for science, research, and business activities. In this way, Digivisio also contributes to innovation development, export opportunities and economic growth.

5 Timeline

The development work in Digivisio 2030 programme is carried out using agile, iterative methods. More specific plans are agreed until the end of 2024 leaving room for discussion, changes and updates for the target state. A central part of the program are pilots, where the operating models, service concepts and digital solutions are tested with users in pilot higher education institutions. Some parts of the work, changes in legislation will take longer.

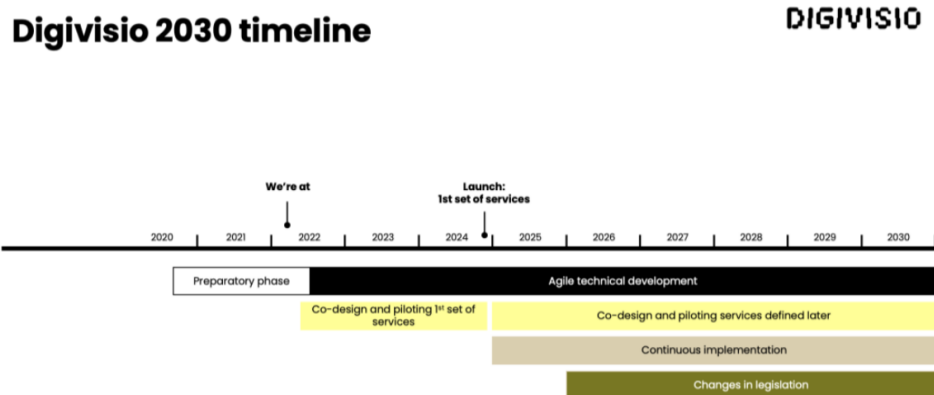


Figure 3: Digivisio 2030 timeline

6 Author biographies



Hanna Nordlund works as a Programme Director of Digivisio 2030. She has 10+ years of experience in leading digitalization programmes in education and also in healthcare and social services sectors. She has also led the development of national digital services in both sectors. Hanna Nordlund has also experience from portfolio and project management and managing organizational change projects as well and managing process development projects in both private and public sector companies. She has worked as a researcher focusing on leadership and innovation management. Hanna Nordlund has PhD in business administration. In her dissertation she studied customer understanding in early phases of innovation process.



Jonna Piironen works as a Programme and Communications Manager in Digivisio 2030. She has 10+ years of experience of different digital transformation programs and in different roles in communications, both in Finland and abroad. For the last years she has worked in the public sector, in digital transformation programmes in education and in healthcare and social services. Before she worked as a strategic consultant mainly in the private sector in the telecommunications industry. Jonna Piironen has M.Sc. Econ in business administration.