Basic ICT competencies

Online interaction competencies

Client-oriented digital service competencies

Online guiding competencies

Monitoring competencies

Service design competencies

Improve your Digital Health Care and Social Welfare Competencies 24/7!

Sote 24/7 Peda

Health and social care informatics competencies

Ethical competencies

Knowledge-based management competencies

Interprofessional work in development communities

RDI competencies

Societal competencies

Laurea University of Applied Sciences' separate issue

This is a translation of a report originally published in Finnish. The report has been supplemented by a short article that presents the Finnish context for the international audience. You can access the article directly from here.

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SOTEPEDA 24/7

SotePeda 24/7 (2018–2020) is a project funded by the Finnish Ministry of Education and Culture. 23 Finnish universities have taken part in the project. The vision for the project: "Higher education teachers are multidisciplinary digital and pedagogical experts who work in national open learning environments. Competency descriptions and studies improve university students and professionals' skills and ethical approaches related to the digitalisation of health care and social welfare and its development as well as their skills to develop digital human-oriented health care and social welfare services within interprofessional networks."

The project results have been described in three sections in this report. The project has generated pedagogical products based on the research and development carried out during the project. Underlined words are links.

The digitalisation of health care and social welfare is a process that requires multidisciplinary cooperation. We hope this report will find readers from various fields who are interested in improving their competence regarding the digitalisation of health care and social welfare and its development. These readers can be students, teachers or professionals of health care and social welfare, business or IT. This report will inspire and equip you for your work.

1 RESEARCH AND DEVELOPMENT

2 PEDAGOGICAL PRODUCTS

3 PROJECT INDICATORS

OVERVIEW OF SOTEPEDA

RESEARCH AND DEVELOPMENT

RESEARCH AND DEVELOPMENT TASKS

Change factors impacting the health care and social welfare service system

1. What is expertise related to digital health care and social welfare services?

- Multidisciplinary expertise in the digitalisation of health care and social welfare and its development
- Teacher's multidisciplinary expertise in the digitalisation of health care and social welfare and its development
- Use of service design skills in health care and social welfare.
- Ethical expertise required for digitalisation

2A. What is digi-pedagogical competence?

- Knowledge co-creation in multidisciplinary operating environments of health care and social welfare can be supported with pedagogical models
- Collaborative, digital and flexible learning platforms promote the development of multidisciplinary expertise

2B. What kind of new pedagogical models help one learn digital health care and social welfare skills?

- Micros and MOOCs as teaching and learning methods to improve one's data management skills in health care and social welfare
- Multidisciplinary and flexible learning platforms promote the development of multidisciplinary expertise
- Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-oriented leadership skills
- Service design training, a mentoring camp, that support the development of students and teachers' service design skills
- Learning contents and pedagogical methods for learning how interprofessional development networks work
- Ethical operations model and pedagogy support learning ethics

3. What kind of new health care and social welfare approaches will be common practices in the future?

- Client-oriented and ethical health care and social welfare work
- Tools for future interprofessional development networks
- Process of co-developing an ethical operations model

Sote 24/7 Peda

PEDAGOGICAL PRODUCTS

PROJECT INDICATORS

- Target group
- Publications
- Communications
- Social media

- Micros
- MOOCs
- Service design study module
- Open Badges
- Learning platforms
- Pedagogical instructions and models
- Ethical operations model
- Interprofessional work in development communities toolbox
- Trialogical metaphor of learning outlining pedagogical products

Clicking the logo on each page will bring you back to this overview page

KEY BACKGROUND FACTORS

Change factors impacting the health care and social welfare service system

The Finnish health care and social welfare system is facing substantial structural changes. The aging of the population increases health care and social welfare expenses, while the working age population that funds the public economy by paying taxes is shrinking. [1, 2]

In the future, the population growth in Finland will heavily rely on immigration, and urbanisation will alter the population structure geographically. Without determined actions, inequality between socio-economic groups, genders and geographical areas as well as social exclusion are more likely to increase. [3, 4]

Health care and social welfare services are becoming more digital, which changes the relationship between clients and professionals as well as data management and sharing practices. Human-oriented thinking emphasises the perspectives of all parties. True shared interprofessional work is achieved when all parties are committed to cooperation, respect each other, and dare to approach matters from new angles, take new measures and break customary boundaries. [5]

- **The aging and diversification of the population as well as digitalisation are key reasons why the health care and social welfare system has to change.**
- **The current production-oriented and silo-like structure should be replaced by a client-oriented service system co-built by actors in various social and administrative sectors.**
- **The development of a client-oriented service system requires closer cooperation between actors in the public, private and community sectors and citizens.**
- **Citizens, their close relatives and social networks are seen as equal partners and actors in the service design process.**
- **To develop this service system and services, the current situation has to be assessed and needs for development have to be identified based on comprehensive collection of information. The best practices of client-oriented interprofessional development processes also act as building blocks for this development work.**

RESEARCH AND DEVELOPMENT TASKS

1. What is expertise related to digital health care and social welfare services?

2. A) What is digi-pedagogical competence?
   B) What kind of new pedagogical models help one learn digital health care and social welfare skills?

3. What kind of new health care and social welfare approaches will be common practices in the future?

RESEARCH AND DEVELOPMENT TASK 1

Multidisciplinary expertise in the digitalisation of health care and social welfare and its development

RESEARCH QUESTION 1

Competence has been mainly defined based on the competency descriptions in the HITComp.org database. More than 140 basic level competency descriptions of the database were translated into Finnish. These translations were compared to the source text to ensure equivalence. The HITComp competency descriptions were sorted into ten fields of expertise similar to the sorting used for the US eHealth Work Project [6, 7, 8, 9]. The resulting definition described each competency, its content and related goals.

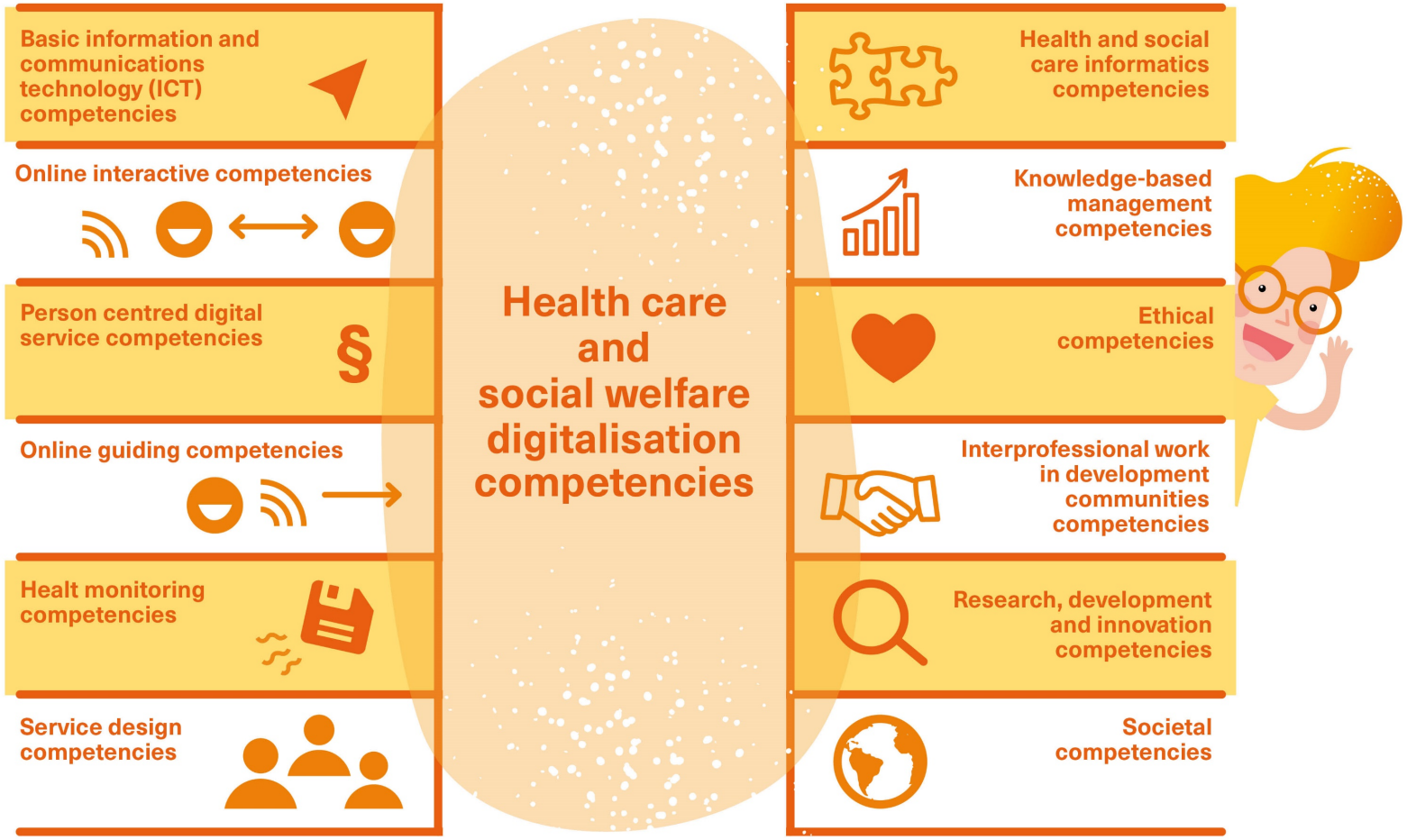
The definition was critically evaluated by actors from different fields (health care, social welfare, business and IT). The definition was made more comprehensive (e.g. 12 fields of expertise) based on this evaluation, previous studies and current national information. Version 1.0. of the definition of digital health care and social welfare expertise was the basis for the open teaching material [10, 11, 12]. This first definition was sent to health care and social welfare professionals for evaluation. Their responses were analysed in a two-step process. As a result, a second definition was created (definition 2.0.), which included 12 fields of expertise as well as escriptions, content and goals.

- Multidisciplinary expertise in the digitalisation of health care and social welfare and its development has been divided into 12 fields of expertise.
- Micros (422) and MOOCs (30) discussing ethical expertise have been produced to be used as open teaching material for teachers, university students and professionals.
- The definition of expertise will be integrated into curricula of universities of applied sciences and further training programmes.
- The definition of expertise was the basis for a specialist training curriculum.
- The definition of expertise is a tool for evaluation and development.
- Students, employees and employers can use this tool to evaluate the need for training.

Multidisciplinary expertise in the digitalisation of health care and social welfare and its development

Figure 1. Process of defining competencies

Multidisciplinary expertise in the digitalisation of health care and social welfare and its development



Health care and social welfare digitalisation competencies (link to the definition)

RESEARCH AND DEVELOPMENT TASK 1

RESEARCH QUESTION 2

Teacher's multidisciplinary expertise in the digitalisation of health care and social welfare and its development

1/2

Teachers' expertise is essential to reinforcing students' and professionals' competence. Teachers' contribution to multidisciplinary cooperation is the silent knowledge generated by their existing professional expertise. The project has drafted a description for health care and social welfare digitalisation skills, which is the foundation for teachers' shared multidisciplinary expertise. This description forms a shared language and makes teachers work towards a common goal of establishing and developing digital health care and social welfare services.

Teachers' digi-pedagogical competence consists of four fields of expertise. In these days, digital pedagogy is a vital part of the regional development of universities of applied sciences. The trialogical metaphor of learning enables improvement by monological, dialogical and trialogical means. It is important to coordinate and establish preconditions for collaborative development in teachers' multidisciplinary educational environments. To help students improve their skills, the fields of expertise must be integrated into curricula systematically and the produced learning materials must be used in teaching.

- **Multidisciplinary cooperation is essential.**
- **Teachers' expertise consists of 12 fields of expertise in the digitalisation of health care and social welfare and 4 digi-pedagogical fields of expertise.**
- **A teacher network (330 members in 10/2020) was established to help teachers start to use the materials created within the project.**
- **The generation of new digi-pedagogical solutions to support joint development varies between fields of study.**

- **Teachers' skills to manage health care and social welfare data need more support.**
- **Competency modules on the digitalisation of health care and social welfare and its development should be included in curricula to improve teachers' skills.**
- **Multidisciplinary cooperation between teachers of different fields reinforces teachers' general digi-pedagogical skills and expertise in joint development.**

Teacher's multidisciplinary expertise in the digitalisation of health care and social welfare and its development

12 areas of digital health care and social welfare expertise

1. Basic information and communications technology (ICT) competencies
2. Online interactive competencies
3. Client-oriented digital service competencies
4. Online guiding competencies
5. Monitoring competencies
6. Service design competencies
7. Health and social care informatics competencies
8. Knowledge-based management competencies
9. Ethical competencies
10. Multiactor service co-development competencies
11. Research, development and innovation competencies
12. Societal competencies

Competence areas of digi-pedagogy

1. Methods of joint development and facilitation
2. Pedagogical competences in digital learning environments
3. Adaption of trialogical learning approach
4. Competences related to Learning platforms

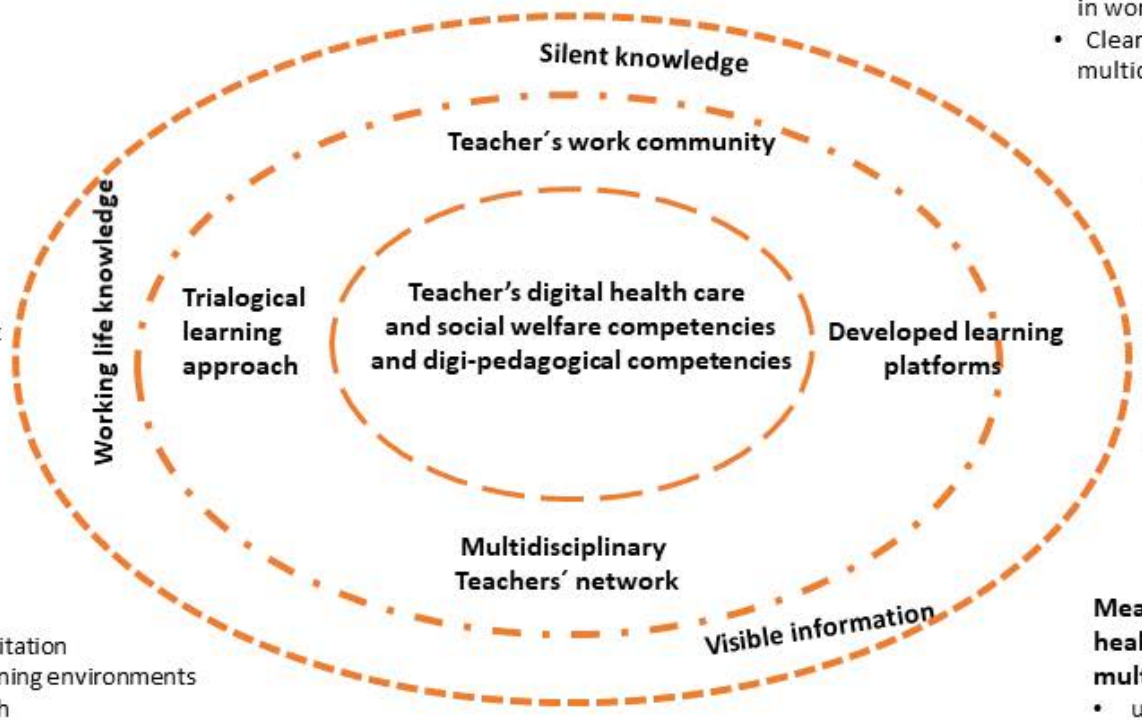
Teachers' existing profession-specific silent knowledge of digital health care and social welfare and digi-pedagogy

Prerequisites for improving one's expertise

- Good substance skills
- Motivation to learn new things
- Development-oriented work approach
- Goal-oriented learner
- Work community's support
- Support from local network partners
- Functional work environment and flow of information

Requirements for multidisciplinary learning environment

- Up-to-datedness of tools in operating/ learning environment
- Investment in leadership and change management skills
- Good, transparent communications
- Securing the continuity of multidisciplinary work
- Collaborative work inside work community
- Sharing expertise in teacher network and learning in work community
- Clear definition of coordination responsibilities in multidisciplinary teaching



Digi-pedagogical skills of teachers working in multidisciplinary environments

- Development- oriented work approach that respects other fields
- Commitment to phenomenon-centric cross-sector joint development
- Ability to lead oneself and change processes
- Management and utilisation of knowledge work tools
- Utilising digital health care and social welfare skills in teaching

12 areas of expertise as part of different curricula

Means of integrating the 12 areas of digital health care and social welfare expertise in multidisciplinary curricula

- using digi-pedagogical methods
- open learning materials, micros

MOOCs, courses, digital living labs, online simulations, escape room

Joint multidisciplinary development of a knowledge base through trialogical interaction between teachers

Figure 3. Teacher's expertise

(In Line with Rajalahti 2014; Paavola and Hakkarainen 2005)

Use of service design skills in health care and social welfare

RESEARCH QUESTION 3

Service design refers to the human-centered development of services and customer experiences through design. This development is based on a more profound understanding of users and the service and its context. Service design helps us create competitive and customer-oriented service experiences through a creative and experimental process.

The starting point of the service design process is a deep understanding of the service and the customer.

The results and proposals for application are based on interviews with service design experts (service design companies) as well as health care and social welfare operators' and higher education teachers' experiences of utilising service design.

Multi-professional service design companies operate in health care and social welfare sectors whose clients include hospital districts, public health care and social welfare as well as service providers operating in the private and community sector.

- **Service design expertise is utilised in health care and social welfare to develop the operations of all three sectors by e.g. making services run smoother, adding to client value and developing new services.**
- **57% of university teachers (N=172, n=93) estimated that service design skills are important for the evolvement of working life.**
- **Teachers have utilised service design in teaching and work-oriented development projects. Service design has also been used as a method to improve theses and final projects as well as develop training programmes.**
- **Service design is based on a deep understanding of users' needs. In this way, service design can make the field more customer-oriented.**
- **Health care and social welfare professionals have positive experiences of service design. This expertise is becoming increasingly prominent in the field.The field has already employed many service designers.**
- **Service design methods support joint development, which allows different actors to meet and improves the dialogue between these actors.**
- **Developers must comprehend the special characteristics of health care and social welfare (legislation, diversity of service providers, evidence-based research) to ensure health care and social welfare services can form entities and smooth service chains.**

Use of service design skills in health care and social welfare

Service design is the development of services that always starts from a deep understanding of the users.
- Mikko Koivisto, Hellon

People are different and it is important to identify the team members whose strengths lie in this job. Motivation to connect with and understand the customer is important.
- Petra Jäntti, NHG-Kaufman

Doing - not talking! Make shitty first drafts.
- Mark Stickdorn

People don't just want to use the service, but live a good life.
- Iikka Lovio, Solita

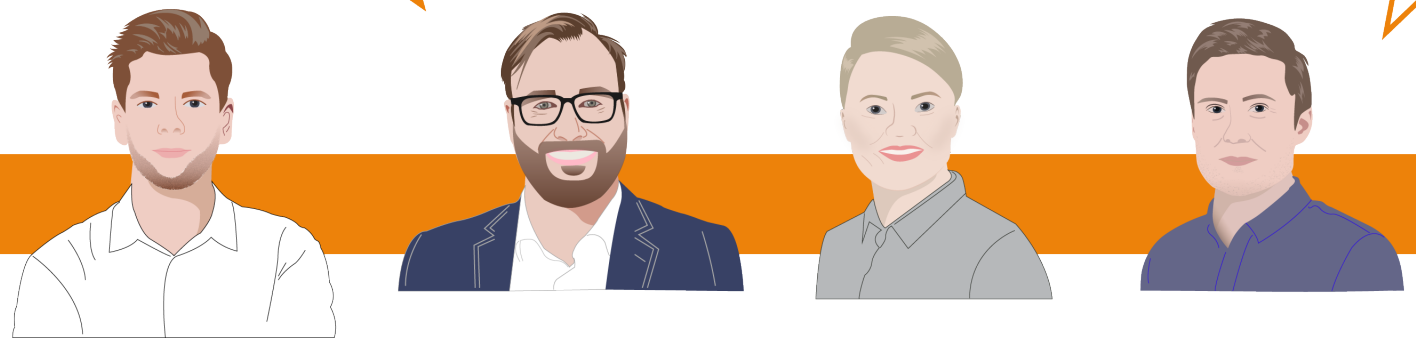


Figure 4. Quotes from service designers

Ethical expertise required for digitalisation

RESEARCH QUESTION 4

The development of technology and utilisation of new systems in health care and social welfare require all actors to understand the change and trends in the field. In addition to the teacher training carried out as part of the project, interprofessional future workshops established a shared understanding of what is considered ethical expertise. The ethical content included in the curricula and implementation plans of nurse and Bachelor of Social Services training was also examined. People shared their experiences and discussed ethical issues and emerging challenges on ethics forums organised by the project.

Ethical expertise in digitalisation is based on one's sensitivity and motivation to identify and assess ethical questions in digital health care and social welfare environments and reflective ability to make ethical decisions and carry them out. Ethical expertise becomes concrete in clients' digital services and their development process. The operations and leadership of the future work community are founded on the appreciation of diversity and shared understanding of the future of health care and social welfare. Successful transition to digital services requires a positive attitude towards digital development and learning, which help develop ethical approaches for the increasingly digital future.

- **A description of ethical expertise required for digitalisation: ethical expertise is divided into nine fields of expertise.**
- **Those who participated in the development process considered ethical expertise an important area of expertise that is constantly evolving in increasingly digital work environments.**
- **Ethical expertise should guide all training and professional activities.**
- **Digitalisation-related ethical expertise can be used to improve needs-oriented ethical expertise and as a foundation for planning ethics training.**
- **Micros and MOOCs discussing ethical expertise were produced to be used as open teaching material for teachers, university students and professionals as well as teacher training.**
- **Ethical skills requirements for successful digitalisation can help assess one's expertise both in training and working life.**
- **The definition of ethical expertise will be integrated in curricula of universities of applied sciences and further training programmes.**

Ethical expertise required for digitalisation

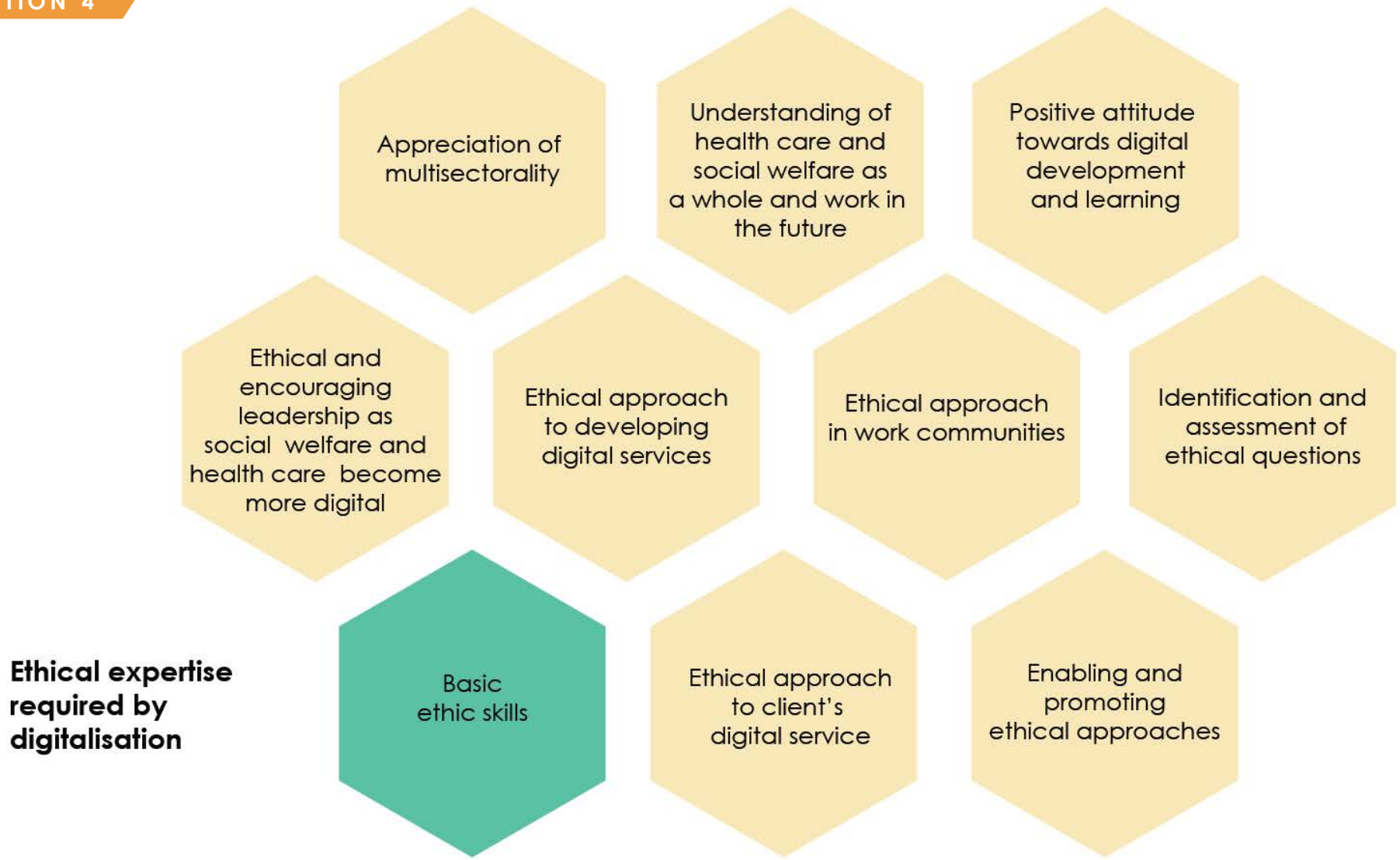


Figure 5. Ethical expertise required for digitalisation (link)

RESEARCH AND DEVELOPMENT TASK 2A

RESEARCH QUESTION 1

Knowledge co-creation in multidisciplinary operating environments of health care and social welfare can be supported with pedagogical models

Collaborative creation of knowledge requires the application of three metaphors of learning. Monological learning helps the learner absorb information about their own field. Dialogical learning helps the learner improve their field-specific skills and practices. Trialogical learning enables creation of new knowledge in a multidisciplinary and collaborative manner.

Collaborative creation of knowledge in health care and social welfare environments refers to the ways actors from different backgrounds cooperate to reach a common goal, e.g. by co-developing future health care and social welfare services. Multidisciplinary development highlights the importance of integration of health care and social welfare services and multidisciplinary work communities. The development of common integrated services requires dialogue between different actors. Digitalisation promotes multidisciplinary cooperation by e.g. making it easier to utilise clients' previous service paths and related information.

According to the administrations and chairpersons of universities of a plied sciences, the strategy of enforcing multisectorality has been successful, but there are also many areas in the multidisciplinary working culture and its management that require

- **Monological learning methods include the use of micros and MOOCs (examples in DigiCampus and open learning materials).**
- **Dialogical learning methods include practical training and group exercises.**
- **Trialogical learning methods include learning through multidisciplinary development projects, such as Digital Living Labs.**
- **The execution of multidisciplinary teaching requires leadership, clear roles and responsibilities, courage to break boundaries, and a common language to identify common phenomena.**
- **Different Canvas templates can be utilised in knowledge co-creation.**
- **The Digital Living Lab supports multidisciplinary development where students from different fields tackle authentic problems.**
- **In a virtual "escape room", one can improve their expertise in the digitalisation of health care and social welfare by playing games in a virtual reality.**
- **The quick learning processes of microlearning that are bound to real-life phenomena improve one's chances of obtaining information successfully. Micros are always available and enable learning whenever there is demand for new skills and expertise.**

RESEARCH AND DEVELOPMENT TASK 2A

RESEARCH QUESTION 1

Knowledge co-creation in multidisciplinary operating environments of health care and social welfare can be supported with pedagogical models

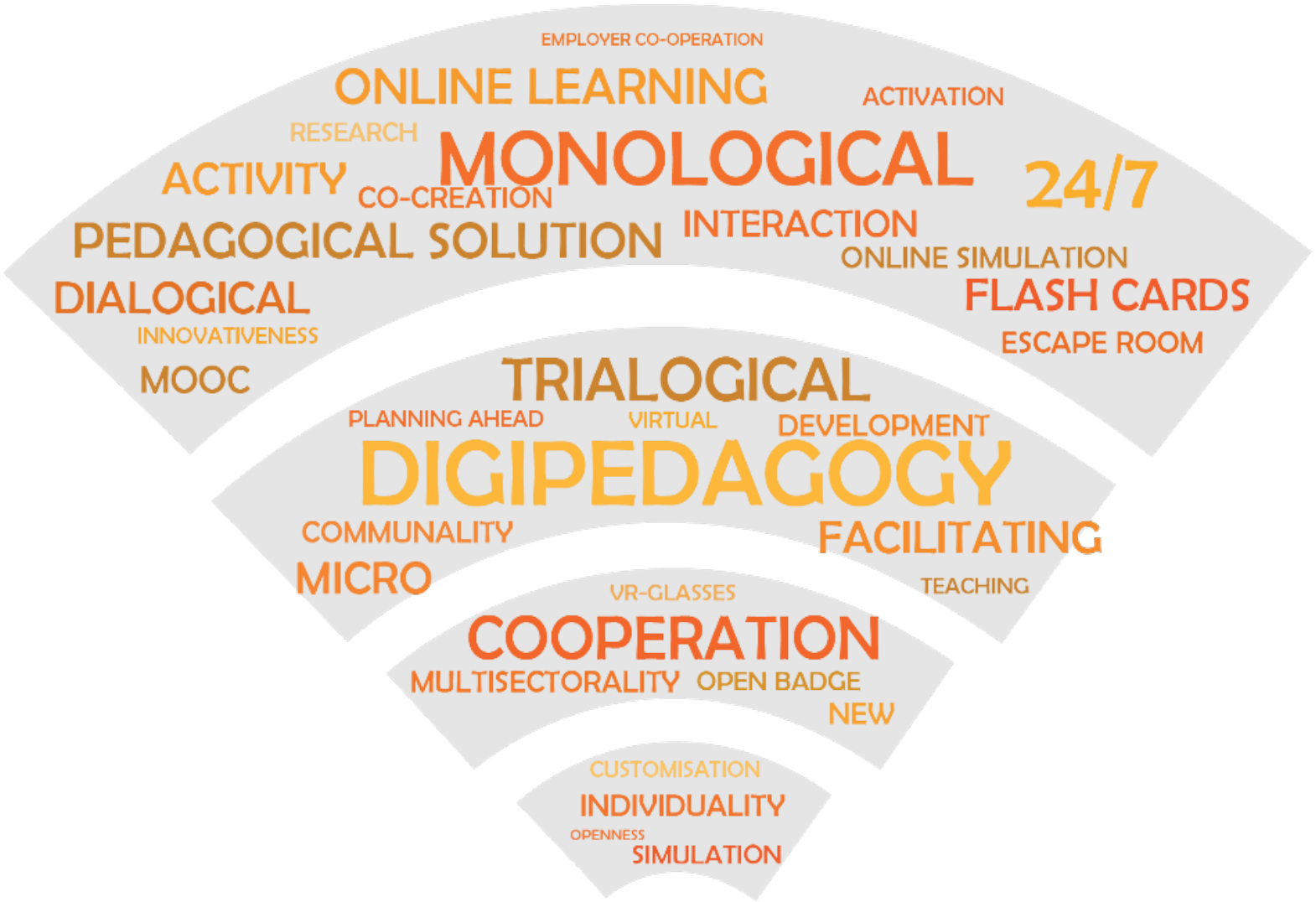


Figure 6. Research results of pedagogical solutions

RESEARCH AND DEVELOPMENT TASK 2A

RESEARCH QUESTION 2

Collaborative, digital and flexible learning platforms promote the development of multidisciplinary expertise

1/2

A learning platform that is shared by students and teachers from different backgrounds requires the establishment of shared understanding as well as dialogue and knowledge generation that transcend the boundaries of different fields of education. Teachers are facilitators of knowledge co-creation and help establish common practices and provide digital tools and platforms for shared use. Multidisciplinary cooperation, learning and development require facilitation that provides structure, work methods and a safe space for all participants.

A facilitator is a neutral enabler who supports cooperation. The actual work and decision-making are on the participants' shoulders. Facilitation helps build trust, openness and common values. Teachers facilitate "cross-fertilisation" between different fields, crossing boundaries between these fields and different practices. Successful facilitation requires teachers to view their own work as interprofessional.

The goal of being a facilitator of cooperation and knowledge co-creation between students of different fields is to reach a level of collaborative knowledge co-creation, where the learning process is the same for everyone regardless of their background.

- **The trialogical approach to learning supports and enables multidisciplinary learning and co-development.**
- **The teacher's role is to facilitate common knowledge co-creation that supports the establishment of a shared understanding and language. The goal is to achieve cross-boundary dialogue and knowledge co-creation.**
- **The teacher selects the digital platforms, tools and work methods to be used.**
- **The best practices include concrete support given by facilitators, cooperation and shared reflection, boundary conditions commonly agreed for activities, and common instructions accessible to all.**

- **Digital pedagogical flash cards and Teacher's Manual.**
- **The Digital Living Lab as a multidisciplinary development and learning platform.**

Collaborative, digital and flexible learning platforms promote the development of multidisciplinary expertise

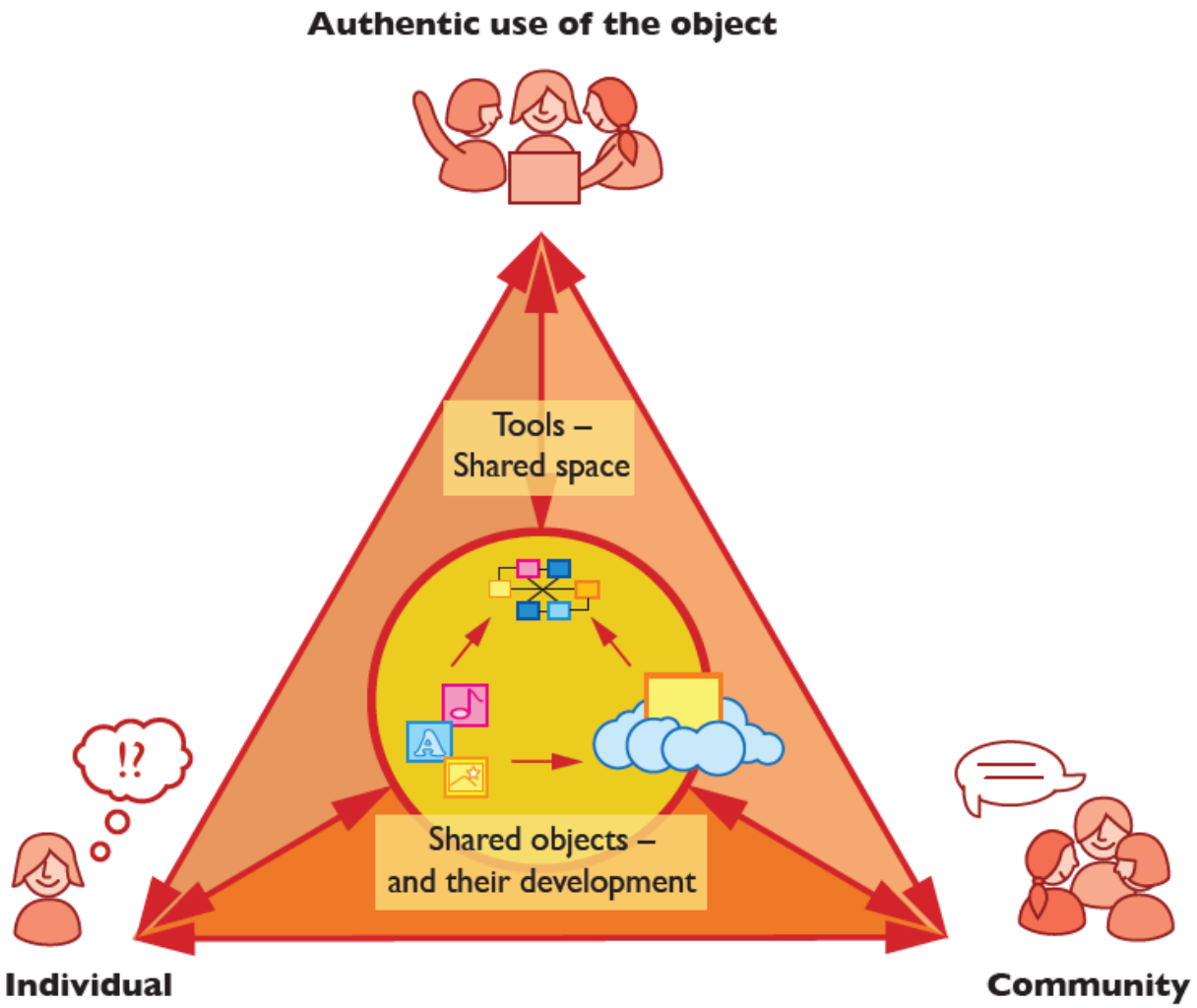


Figure 7. Trialogical learning environment

Micros and MOOCs as teaching and learning methods to improve one's data management skills in health care and social welfare

The project generated new shared (CC BY-SA) pedagogical solutions that are also suitable for on-the-job training. Micros are small modules that contain only one learning goal. The teacher can utilise micros in teaching. Students can use micros to improve their expertise. MOOCs (massive open online courses) are modules that can be completed independently whenever, wherever. These courses are worth 1–3 credits.

Collaborative learning methods (*Digital Living Lab*, *online simulation*) and a VR game called *Puzzle Room* that simulates real-life situations related to the digitalisation and data management of social welfare and health care were developed as part of the project.

MOOCs turned out to be flexible learning platforms and successful tools for improving one's expertise. The project examined the experiences of participants of 20 MOOCs (n=562) regarding MOOCs as expertise development tools. The results have been encouraging and show that MOOCs could play a key role in the development of health care and social welfare students' and professionals' expertise in the future.

- **Students find MOOCs very useful and successful tools for independent learning and improvement.**
- **Shorter courses (1–3 credits) might be better suited for students and professionals who want to develop their skills than longer ones, because it is easier to complete shorter courses while one is also employed.**
- **Establishment of peer interaction in MOOCs might support students' retention skills and independent completion of MOOCs, since MOOCs have less interaction with teachers than usual teaching methods.**
- **MOOCs can be completed whenever and wherever and the students' performances are automatically evaluated. MOOCs can include monological, dialogical and trialogical metaphors of learning.**
- **MOOCs have the potential to become essential tools for developing health care and social welfare students' and professionals' expertise in the future.**
- **Finnish universities have great potential for utilising MOOCs as tools for expanding one's expertise, because digital tools and alternatives are already commonly used in Finland.**
- **In the future, MOOCs could also be utilised in building dialogue and knowledge between health care and social welfare experts and clients.**

Micros and MOOCs as teaching and learning methods to improve one's data management skills in health care and social welfare

Online courses

CampusOnline's MOOCs on digital services

Flexible digital services 2 credits Also in English

Citizen and digital services 1 credit

Data protection and security 2 credits Also in English

Knowledge based management MOOCs on Campus Online

Basics of knowledge based management 3 credits Also in English

Evidence-based knowledge in health care services, 1 credit

Secondary use of knowledge 1 credit

Open Badge: Knowledge based management

Interactive online course Digital future of social welfare and health care services, 5 credits, summer 2019

The courses were co-developed and produced for the national DigiCampus platform and piloted on students of universities of applied sciences through CampusOnline. MOOCs are automatically evaluated courses that can be completed wherever at any time.

Figure 8. Online courses

RESEARCH AND DEVELOPMENT TASK 2B

RESEARCH QUESTION 2

Multidisciplinary and flexible learning platforms promote the development of multidisciplinary expertise

The project developed a learning and development platform called Digital Living Lab for the multidisciplinary co-development of health care and social welfare services. In the Digital Living Lab, user-oriented development takes place in a 24/7 virtual learning environment that resembles working life.

There are descriptions of the development process and operation of the Digital Living Lab as well as how stakeholders can be engaged online. The Digital Living Lab uses different types of software to enable multidisciplinary joint development, engagement of stakeholders and development of multidisciplinary expertise.

This learning and development platform that is shared by students and teachers from different backgrounds requires the establishment of a shared understanding as well as dialogue and knowledge creation that cross the boundaries of different fields of education. Teachers are facilitators of knowledge co-creation and help establish the use of digital tools and common practices and provide students with digital tools and platforms for shared use.

- The trialogical metaphor of learning can be used to support multidisciplinary learning and co-development in the Digital Living Lab.
- The teacher is the facilitator and organiser on the platform. They select the platforms, tools and work methods for common use.
- In the Digital Living Lab, student groups and group members work both independently and together. There are also online review workshops in which all groups, teachers and stakeholders participate.
- Digital Living Lab process: Project planning, understanding the client, brainstorming, concept 1 (service process), concept 2 (user interfaces) and prototyping.
- Digital flash cards and Teacher's Manual.
- The Digital Living Lab is suitable for the development of solutions that tackle interprofessional challenges of health care and social welfare services, particularly digital services. For example, the project designed digital service solutions that help promote and monitor the self-care of home-care patients suffering from heart failure.

Multidisciplinary and flexible learning platforms promote the development of multidisciplinary expertise

Digital Living Lab

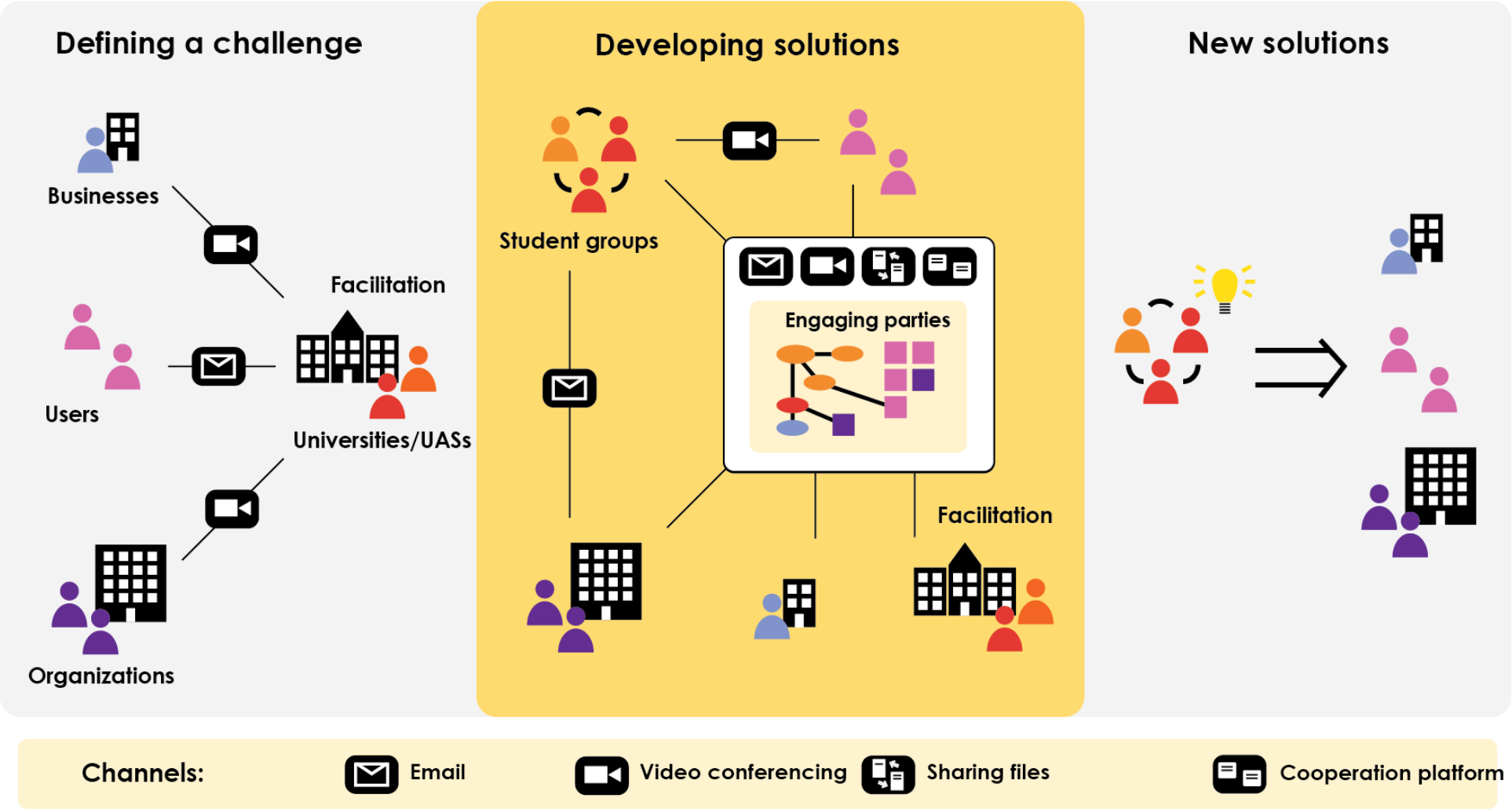


Figure 9. Digital Living Lab

Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-oriented leadership skills

The 5-credit online course *Digital future of health care and social welfare services* was co-produced by multiple universities of applied sciences for the national open online learning platform DigiCampus. This course was available for students in universities of applied sciences and professionals in summer 2019. Students responded to a survey on the development of their expertise before and after the online course.

Six MOOC courses for 1–3 credits were co-developed on the topics of digital health care and social welfare services and knowledge-based leadership. In MOOCs, all assignments have been automated. Teachers plan the courses, inform the students, handle the enrolment process, answer questions and register evaluations.

In summer 2020, students enrolled on MOOCs organised by LAB University of Applied Sciences via the CampusOnline portal. The course coordinator entered completed study units to the study register. Students can then request the completed study units to be included in their personal study plan (PSP) in their own university. Finally, students gave feedback on the course. The feedback was used for developing the study module.

- **Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-oriented leadership skills.**
- **On the online course *Digital future of health care and social welfare services*, students expanded their expertise in a collaborative manner.**
- **Six MOOC courses on the topics of digital services and knowledge-based leadership were organised. These courses could be completed wherever at any time and developed students' expertise in an individual manner.**
- **The Open Badge for knowledge-oriented leadership is a way to prove one's expertise in knowledge-oriented leadership.**
- **Those who participated in the online course evaluated their competence higher in all three areas of the course after completing the course.**
- **The online courses on digital health care and social welfare services and knowledge-based leadership are also suitable for professionals who want to expand their expertise.**
- **The results indicate that MOOC courses are suitable for improving university students' expertise in the digitalisation of health care and social welfare services.**

Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-based management competencies

Figure 10. Knowledge-based management

Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-based management competencies. What did the students think?

"A clear brief course on digital services"

"A clear and well-organised module"

"The course was quick to complete, but I still learned more than I expected."

"Everything went smoothly"

Figure 11. Students' feelings about independently completed online courses

Service design training, a mentoring camp, that supports the development of students and teachers' service design skills

At the first stage of development, a service design study module was created and piloted by teachers in the development universities. After the pilot, two identical mentoring camps on service design were held for involved teachers (n=80). These mentoring camps utilised the new service design study module and the Instructor's Manual compiled for the module. The camps took a workshop-like, trialogical approach to pedagogy and highlighted challenges of working life. After the camps, the teachers piloted the created learning material on their own courses. The involved teachers tackled challenges of working life together with representatives of working life.

Teachers who completed the mentoring camp acted as mentors of service design in their own universities. Their goal was to integrate what they had learned about service design into curricula and teaching.

The results and examples of use are based on evaluations made by teachers who participated in the camps and student feedback collected after the pilots.

- **Both students and teachers were happy with the service design training and learning material.**
- **Teachers were slightly more pleased with the study module and its utilisation than students.**
- **Both students (average 4.25) and teachers (average 4.41) thought that the training helped them develop their service design skills. (scale 5 = very much – 1 = not at all).**
- **The majority of teachers thought (average 4.50) that they will be able to use the training material in future. The students agreed slightly less (average 3.75).**
- **After the pilot period, the service design training has been included in the health care and social welfare curricula of many universities of applied sciences as well as in university of applied sciences and master's degree programmes.**
- **The study module concentrates on addressing authentic development challenges of working life as well as cooperation with working life. This spreads information and expertise from training environments to the health care and social welfare sector.**
- **The course *Introduction to service design* has been completed by approximately 100 students. The course has increased students' understanding of service design's role in the development of health care and social welfare.**

Service design training in the form of a mentoring camp supports the development of students' and teachers' service design skills

Figure 12. Service design camp

Learning contents and pedagogical methods for learning how interprofessional development networks work

The development of electronic health care and social welfare services requires solid expertise in interprofessional cooperation with different social sectors. These future competence needs were determined together with citizens, representatives of working life, teachers, and students.

The key aspects of interprofessional work skills include the understanding of various actors and roles in the service system, client-oriented and interprofessional design and development of services, application of interprofessional development approaches and methods and identification of digital opportunities to develop health care and social welfare services. The development of interprofessional work skills underlines cooperation and joint learning.

Versatile learning material was created to help people develop their interprofessional work skills. This material enables both independent and group learning and interprofessional development of services. In addition, the self-evaluation tool helps identify one's interprofessional work skills.

- **The tools of interprofessional work help determine which actors should be involved in development and what are their roles in the development process and knowledge production.**
- **New tools of interprofessional development were introduced without hesitation. They were used for completing assignments in authentic learning environments.**
- **Master's degree students who used learning material developed as part of the project said that their skills have improved across all objectives of interprofessional work expertise.**

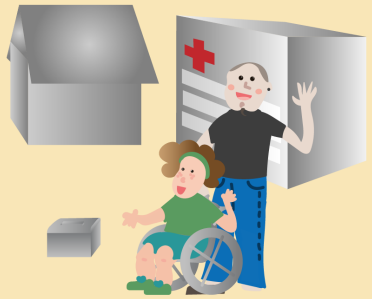
- **Course contents can be used in the planning of new development projects or cross-sector approaches.**
- **Curriculum design in universities**
- **Course contents can be used as teaching material in universities and further professional training.**
- **Course content and pedagogical methods can be used for interprofessional development.**
- **The tool for self-evaluating one's interprofessional work skills works for actors who develop health care and social welfare services and processes interprofessionally.**

Learning contents and pedagogical methods for learning how interprofessional development networks work

INTERPROFESSIONAL WORK IN **DEVELOPMENT COMMUNITIES**

An interprofessional development community refers to the joint service development by public, private and community sector actors and citizens.

DEVELOPMENT OF INTERPROFESSIONAL WORK SKILLS



With other people in authentic operating environments.

DEVELOPMENT OF THE SERVICE SYSTEM

Use digital services and tools. Identify different actors, duties and roles within the service system

ENABLING INCLUSION

Equal active actors.

READ MORE: SOTEPEDA247.FI

Figure 13. Interprofessional work in development communities

RESEARCH AND DEVELOPMENT TASK 2B

RESEARCH QUESTION 6

Ethical operations model and pedagogy support learning ethics

1/2

The results arise from the development process of an ethical operations model and publications created during the process. The starting point for this development was taking a socio-constructive approach to learning. At the core of the ethical operations model has been a reflective process of ethical approaches that combines experiential and theoretical knowledge. The process is based on trialogical metaphors of learning that help people learn ethics. Trialogical learning is founded on metaphors of learning: acquisition of information, participation and generation of new information.

In terms of learning ethics, it is essential that the trialogical approach is supported by the components of James Rest's [13] moral code of conduct: moral sensitivity, moral judgement, moral motivation and moral character.

The reflective process of ethical approaches and its stages have been utilised in the planning and execution of MOOCs (3) and micros on ethics as well as future workshops. Teaching staff's capacity to teach ethics has been strengthened with an online study module and the teacher network.

- **The reflective process of ethical approaches supports learning of ethics and development of skills.**
- **Publication: *Eettinen toimintamalli – osaamista tulevaisuuden koulutuksiin ja sote-alan työhön* contains articles that discuss learning of ethics and continuous improvement of ethical expertise.**
- **The reflective process has been utilised in the preparation of ethics training and learning material (MOOCs and micros) as well as in the planning of future workshops and teacher training.**
- **The reflective process can be utilised in multidisciplinary teaching of ethics.**
- **The reflective process can be used in training and working life to develop one's ethical expertise.**
- **The reflective process can be used by organisations to prepare ethical guidelines for digitalisation.**
- **The reflective process can also be utilised in working life to identify ethical questions and challenges, co-reflect on them and produce solutions for them.**

Ethical operations model and pedagogy support learning ethics

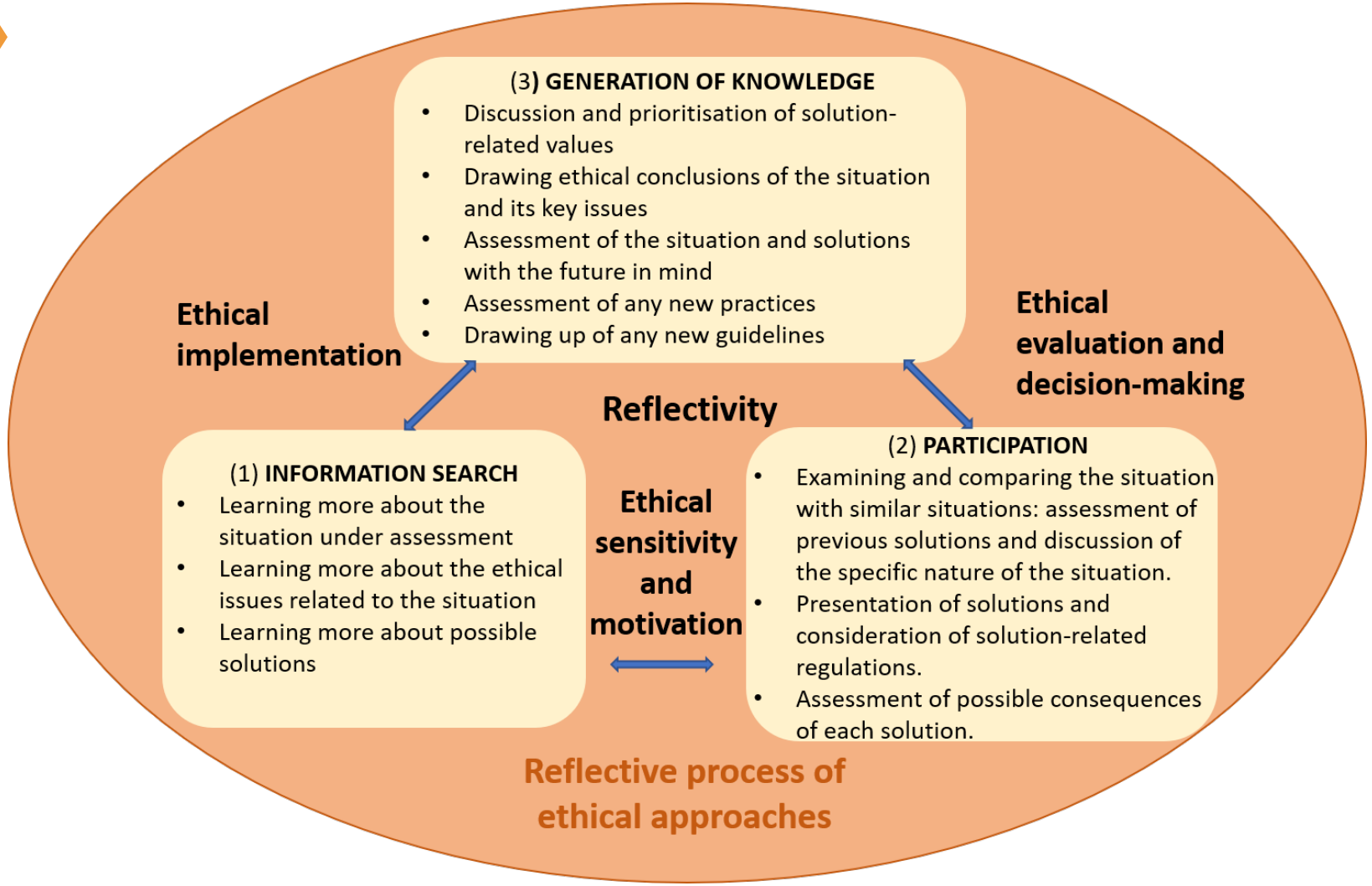


Figure 14. The reflective process of ethical approaches supports the learning of ethics.

The reflective process of ethical approaches utilises the following: 1) Ethical operations model (Koivisto et al., 2019, Tekoäly viranomaistoiminnassa - eettiset kysymykset ja yhteiskunnallinen hyväksyttävyys) [14], 2) trialogical metaphor of learning (Paavola & Hakkarainen, 2005 [15]; Paavola, 2012 [16]) and 3) James Rest's components of moral code of conduct (Rest, 1994 [13]; Finnish edition Juujärvi, Myyry & Pesso, 2007 [17]).

RESEARCH AND DEVELOPMENT TASK 3

RESEARCH QUESTION 1

Client-oriented and ethical health care and social welfare work

The client-oriented and ethical work approach of future health care and social welfare services was examined through a descriptive literary survey. This literary survey strived to define what client-oriented and ethical work in health care and social welfare services will be like in the future, as digital services are becoming increasingly common. The survey also examined what kind of ethical expertise such work will require. The source material was analysed using an inductive content analysis. The central themes of this analysis were:

- Health care and social welfare professionals must have initiative in processes of change and design of new services to ensure clients are heavily included in the development of future services.
- Different user groups should be included in the activity planning process to guarantee genuine user-friendliness.
- All planning of activities should always involve ethical evaluation to generate better results through multidisciplinary networking. The constant changes to digital environment guidelines and legislation pose challenges to keeping one's expertise up to date.
- Ethical questions, both in traditional and digital services, are often culturally biased. More expertise is required regarding this issue.

Staff members have to actively guide processes of change.

Networking should be utilised in activity planning and ethical evaluation at the planning stage.

The results of the literary review were used to prepare the ethical operations model and micro learning materials on ethics.

Clients should be included in the development process at the planning stage.

Continuous updating of one's expertise is necessary due to changes to guidelines and legislation.

Cultural expertise is essential to ethical decision-making.

Terms must be continued to be defined actively in various cooperation forums.

Responsibilities and obligations must be continued to be determined actively on various cooperation forums.

Client-oriented and ethical health care and social welfare work 2/2

Challenges and solutions
Challenges for defining the concepts
Professionals' active role in the development
Inclusion of citizens in the planning process
Challenges for defining responsibilities and obligations
Expanded expertise with research data
Privacy protection challenges
Risks of social exclusion
Multidisciplinary networking
International skills

Figure 15. Challenges and solutions of client-oriented and ethical work in future health care and social welfare.

Tools for future interprofessional development networks

Several social changes have led to a situation where extensive cooperation and various networks are necessary for the development and production of health care and social welfare.

Interprofessional cooperation means cooperation, its development and study in a way that includes citizens in the service process and service development and research process.

The purpose of the tools is to identify different actors and their duties and roles within the service system, design services in a client-oriented and interprofessional manner, and use the models and methods of interprofessional co-development.

The digital *Interprofessional work in development communities toolbox* describes the tools and provides instructions and ideas for their use. The tools are available as digital and printable Canvas templates.

- **Health care and social welfare development networks must work interprofessionally.**
- **Interprofessional development can be executed with various tools.**
- **The tools of interprofessional development networks help design services in a client-oriented and interprofessional manner.**
- **The Interprofessional Map helps identify different actors and their roles in the service system.**
- **The My Client-Oriented Thinking test makes health care and social welfare actors aware of their client-oriented thinking.**
- **The tools for assessing the current state and future of the service system help describe services that require interprofessional cooperation.**
- **The service development process tool gives an overview of the development of a service and what contributes to it.**
- **The tool for assessing one's interprofessional competence helps one identify their expertise within interprofessional development communities.**

Tools for future interprofessional development networks

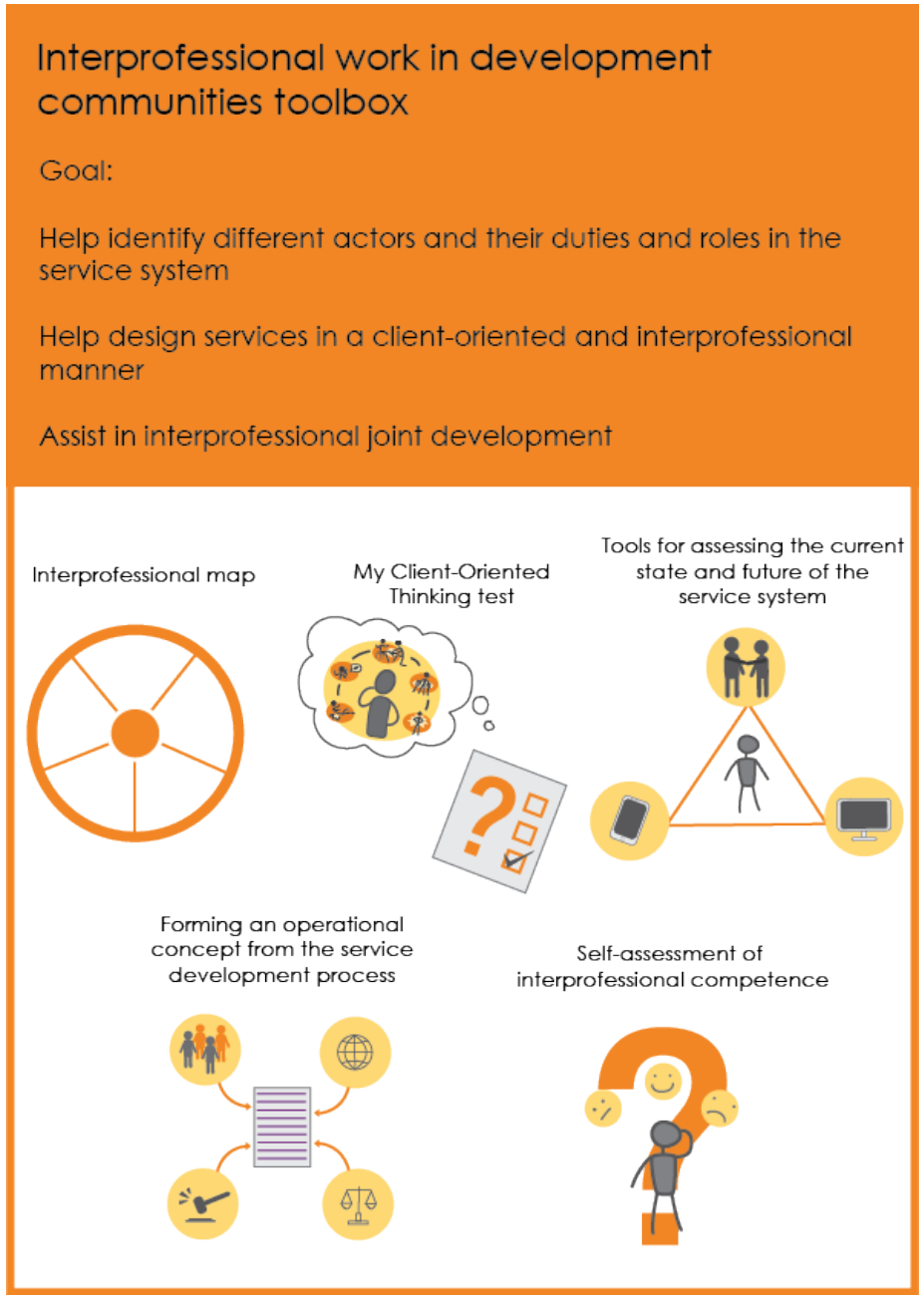


Figure 16. Interprofessional work in development communities Tool box (link)

Process of co-developing an ethical operations model

RESEARCH QUESTION 3

The development of an ethical operations model has been a result of joint development that utilises activity analyses in its approach. The development has been multidisciplinary, as professionals from different health care and social welfare organisations (public, private, community sectors), experts from national expert organisations (e.g. Finnish Institute for Health and Welfare, VTT, SoteDigi Oy, NRF, National Advisory Board on Social Welfare and Health Care Ethics, SOSTE), citizens as well as university and upper secondary school teachers and students have participated in the project. In total, 321 people contributed to the development process.

The process has taken place in five cities in the form of future workshops (12). In addition, two virtual forums on ethics were also organised. A key aspect of the work was multi-perspective and collaborative knowledge co-creation as a reflective process that utilised foreknowledge produced with a literary survey.

The project identified future ethical questions of the increasingly digital health care and social welfare sector, ethical expertise related to digitalisation, needs for ethics training, and needs for and content of an ethical operations model as well as factors that should be considered in the introduction of such a model.

- **Interprofessionalism was emphasised in the joint development process. An ethical operations model that includes approaches to digitalisation is necessary for both training and working life.**
- **The use of virtual ethical forums in discussing ethical questions was considered meaningful and participants want to attend such forums also in the future.**
- **Facilitation is needed in the navigation of the joint development process.**
- **Themes of digitalisation should be examined as comprehensively as possible, which was acknowledged in the planning process of the model.**

- **The joint development process and its methods can be utilised in all kinds of development work.**
- **Virtual forums can be used to work on and discuss various themes in a collaborative and multidisciplinary manner.**
- **Citizens' participation in health care and social welfare development can be promoted with methods of joint development.**

Process of co-developing an ethical operations model

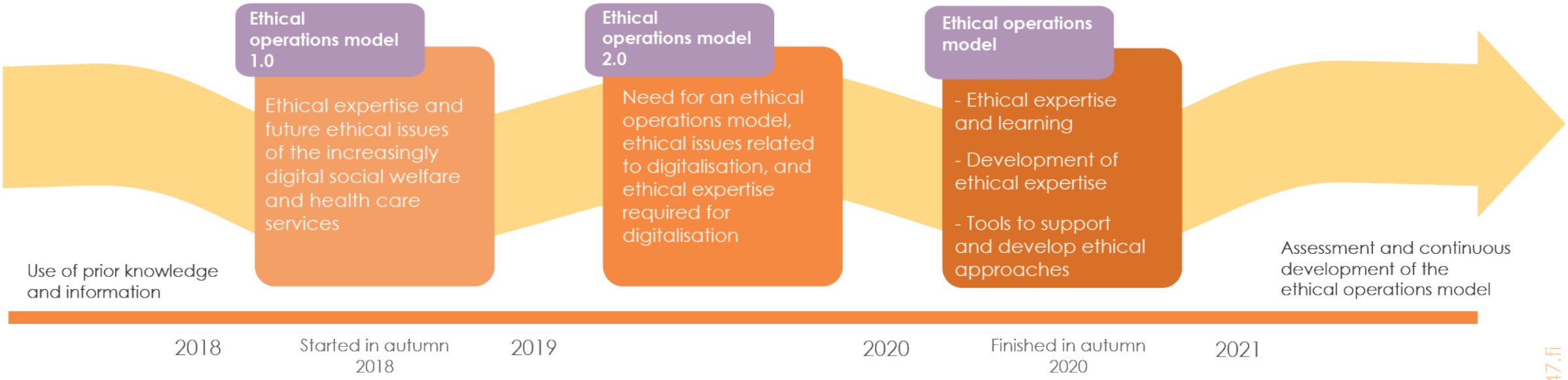


Figure 17. Development process of the ethical operations model

OVERVIEW OF SOTEPEDA

RESEARCH AND DEVELOPMENT

RESEARCH AND DEVELOPMENT TASKS

Change factors impacting the health care and social welfare service system

1. What is expertise related to digital health care and social welfare services?

- Multidisciplinary expertise in the digitalisation of health care and social welfare and its development
- Teacher's multidisciplinary expertise in the digitalisation of health care and social welfare and its development
- Use of service design skills in health care and social welfare care
- Ethical expertise required for digitalisation

3. What kind of new health care and social welfare approaches will be common practices in the future?

- Client-oriented and ethical health care and social welfare work
- Tools for future interprofessional development networks
- Process of co-developing an ethical operations model

2A. What is digi-pedagogical competence?

- Knowledge co-creation in multidisciplinary operating environments of health care and social welfare can be supported with pedagogical models
- Collaborative, digital and flexible learning platforms promote the development of multidisciplinary expertise

2B. What kind of new pedagogical models help one learn digital health care and social welfare skills?

- Micros and MOOCs as teaching and learning methods to improve one's data management skills in health care and social welfare
- Multidisciplinary and flexible learning platforms promote the development of multidisciplinary expertise
- Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-oriented leadership skills
- Service design training, a mentoring camp, that support the development of students and teachers' service design skills.
- Learning contents and pedagogical methods for learning how interprofessional development networks work
- Ethical operations model and pedagogy support learning ethics

PEDAGOGICAL PRODUCTS

01 Micros

02 MOOCs

03 Service design study module

04 Open Badges

05 Learning platforms

06 Pedagogical instructions and models

07 Ethical operations model

08 Interprofessional work in development communities - Toolbox

09 Trialogical metaphor of learning outlining pedagogical products

MICROS

Micros were developed based on the objectives and content of the 12 fields of expertise. This development process took into account the variety of learning. The development process was led by people appointed to be in charge of each field of expertise. Every team had representatives from different universities of applied sciences.

Micros activate different kinds of learners and approach the topic from multiple angles while using various teaching methods. Licenses and accessibility were taken into account in the usability of micros. Micros contain instructions for both teachers and students.

The micros were piloted in spring 2020. On the basis of these pilots, the micros were further developed by e.g. writing more clear instructions for their use.

The micros are available at aoe.fi.

- **A micro is a quick-to-complete, pedagogically meaningful module that usually contains only one learning objective.**
- **For example, a micro can be a document, presentation, video, podcast, image, assignment or any combination of them.**
- **There are 422 micros and some of them are also available in other languages (Swedish, English).**
- **Teachers can use micros in multiple ways as part of teaching.**
- **One can use only one micro or combine several micros into a larger study module.**
- **A course can consist of micros of different fields of expertise.**
- **Micros have been licensed under CC BY-SA 4.0 They are available for use free of charge.**

MICROS

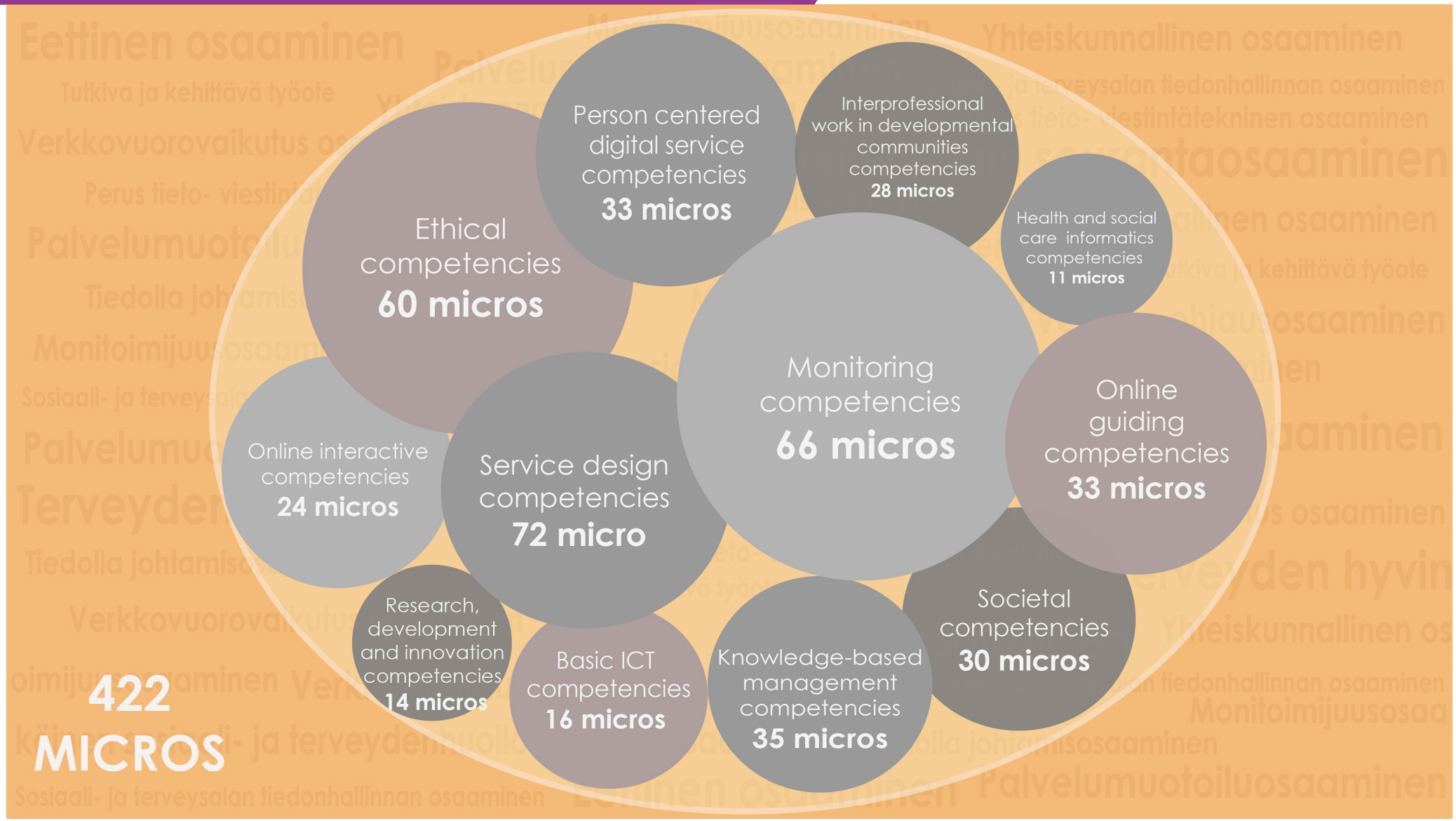


Figure 18. Micros (situation on 18 November 2020)

MOOCS

MOOCs (massive open online course) are open online courses that can be completed independently. They form thematically limited and/or time-limited modules. MOOC learning environments and content are digital. There are many kinds of MOOCs. Some of them emphasise dialogical and trialogical metaphors of learning and strive to support students' interactions and joint knowledge co-creation. Other MOOCs stress monological learning and support students' independent learning through digital learning material.

The project has developed 30 MOOCs (1–3 credits) that cover all 12 fields of expertise. The development of MOOCs combined content, pedagogical and technical expertise. This multidisciplinary joint development project was realised by sharing personal expertise with others, developing new shared content and expanding horizons regarding the possibilities of online learning. The produced MOOCs have been licensed under the open sharing license CC BY-SA 4.0 and are available on the DigiCampus learning platform. In future, these MOOCs will be offered as courses in universities of applied sciences and as an opportunity for further training for health care and social welfare professionals.

MOOCs (massive open online course) are open online courses that can be completed independently wherever at any time.

They cover the 12 fields of digital health care and social welfare expertise.

30 MOOCs on digital health care and social welfare expertise (1–3 credits) have already been developed.

The development of an MOOC requires strong content, pedagogical and technical expertise, multidisciplinary cooperation, comprehensive understanding of open sharing licenses, copyrights and accessibility as well as the ability to combine knowledge and skills.

MOOCs are offered to Finnish university students via the CampusOnline portal.

MOOCs are offered to health care and social welfare professionals who are interested in the development of digital services and want to expand their knowledge.

MOOCS

MOOCs in each area of competence	
Online interactive competencies	🇫🇮
Ethical competencies	🇫🇮 🇫🇮 🇬🇧
Online guiding competencies	🇫🇮
Monitoring competencies	🇫🇮 🇫🇮 🇸🇪 🇬🇧
Healt and social care informatics competencies	🇫🇮 🇫🇮
Interprofessional work in development comptencies	🇫🇮
Client-oriented digital service competencies	🇫🇮 🇫🇮 🇫🇮 🇫🇮 🇫🇮 🇬🇧
Service design competencies	🇫🇮 🇸🇪
Knowledge-based management competencies	🇫🇮 🇫🇮 🇫🇮 🇫🇮 🇫🇮 🇫🇮 🇬🇧 🇬🇧 🇬🇧
Societal competencies	🇫🇮
TOTAL	30

Figure 19. MOOCs

SERVICE DESIGN MODULE

Service design learning material/micros and the Instructor's Manual were prepared for the service design training/mentoring camp.

The learning material was based on a generally used service design model with three steps: understanding (the client), conceptualisation and prototyping.

This study module is supported by the *Introduction to service design* module that goes through the basics and background of service design and the service design model. The material includes videos, PowerPoint presentations and a few assignments that relate to authentic challenges of working life.

The *Introduction to service design* is a one-credit MOOC that was available in the CampusOnline portal in spring, summer and autumn 2020.

The study module of service design includes:
- A 3-step service design process (understanding, conceptualisation, prototyping) that utilises methods and tools that are typical in service design as learning material.

Introduction to service design, 1 credit, MOOC

Instructor's Manual to support teachers in teaching service design

Introduction to service design (1 credit) and Service design expert basic level Open Badge

Service design expert (5 credits), further training

This study module can be utilised in both online and blended learning.

The micros in this study module can be utilised on courses and further training for professionals.

Service design expertise can be transferred to working-life-oriented development.

Mentoring Camp and Instructor's Manual

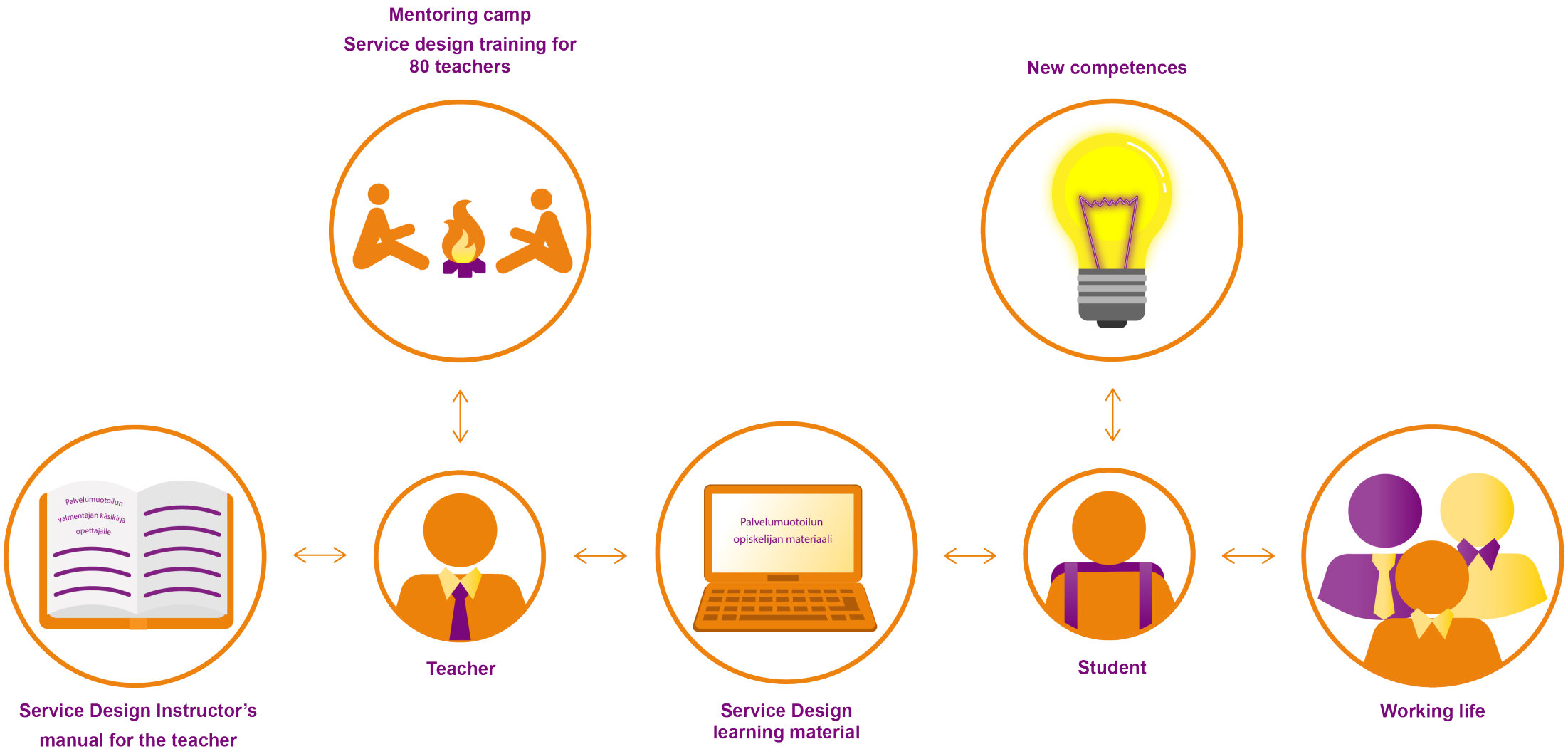


Figure 20. Mentoring Camp and Instructor's Manual

OPEN BADGES

Open Badges are digital and visual documents that prove that someone has acquired expertise on certain subjects. When creating an Open Badge, the following questions should be considered:

- what is the subject/course one can earn the Open Badge for (learning outcomes)?
- what skills/knowledge does the Open Badge contain?
- how can one prove what they know?
- what are the evaluation criteria for granting the Open Badge?

The competency modules must be expressed in a concrete and clear manner, so that students, job-seekers and employers understand them easily. Open Badges can be granted for a certain period of time or for the time being.

Organisations can create and grant Open Badges via the Open Badge Passport (OBP) service, for example. The recipient of Open Badges uses OBP to store their Open Badges and manage who sees their Badges as well as share them on social media (e.g. LinkedIn, Twitter, visual CV).

11 Open Badges for various future fields of expertise

A process description for creating and granting Open Badges

Open Badges can be created for different study modules.

Open Badges prove one's expertise and are a form of self-branding.

Open Badges can also be utilised by job-seekers.

Open Badges give employers an impression of their employees' expertise and need for further training.

OPEN BADGES

Figure 21. Open Badges

LEARNING PLATFORMS

Engaging learning events based on guided reflection can be organised using online simulation. These events are not tied to physical locations. Online simulation is a great way to practise online interactions and guidance as well as clinical decision-making, for example. Special attention should be paid to the user instructions and guidance given to participants at the start of the simulation.

A virtual puzzle room is a VR learning environment where students study the digitalisation of health care and social welfare. It works like an escape room where your assignment is to solve all kinds of problems as quickly as possible.

The Digital Living Lab is a learning and development platform where students can cooperate with companies and communities to engage in user-centred research, development and innovation activities in an environment that imitates working life. It supports the involvement of students of different fields in development. The participants brainstorm, plan and test solutions to identified multidisciplinary health care and social welfare problems in digital environments (e.g. Moodle, Zoom, Padlet and Miro).

- **Online simulation**
- **Online simulation design model**
- **Digital Living Lab**
- **Opportunities to practise online interactions in a safe environment**
- **Trialogical learning methods can (concept cards) make simulation learning more effective.**
- **Opportunity to play a VR puzzle room using Oculus Quest glasses or by installing the game on a computer.**
- **The Digital Living Lab is a great environment for solving multidisciplinary health care and social welfare service development problems online by creating concept descriptions/prototypes of digital services.**
- **The Digital Living Lab can be used on courses and for development tasks of working life.**

PEDAGOGICAL INSTRUCTIONS AND MODELS

The teacher's pedagogical flash cards and the related Teacher's Manual provide pedagogical tools, instructions and models for planning courses and help the teacher build study modules. The objective is to create classes that consist of monological, dialogical and trialogical metaphors of learning and various pedagogical solutions. Different approaches and solutions help students learn new information and different skills. The variation of methods also maintains students' interest in the topic. The Digital Living Lab allows multidisciplinary learners, professionals and teachers to learn together in a digital learning environment. Because everything is in digital format, participation in collaborative development of new knowledge, skills and understanding is very easy. Participants can effortlessly share facts and professional practices of their own field as well as improve their multidisciplinary expertise in an interprofessional group. The teacher facilitates the process and uses many kinds of pedagogical approaches to support students with different backgrounds.

The digital flash cards and the Teacher's Manual provide tools for planning courses.

Digital learning environments offer new pedagogical opportunities. Online learning can also be interactive, e.g. joint development in the Digital Living Lab.

Flash Hack is a process where participants co-develop something quickly online. The objective is to create innovative and fast solutions based on an assignment.

Digital inclusion engages and activates individuals and groups to develop e.g. services using digital tools.

PEDAGOGICAL INSTRUCTIONS AND MODELS

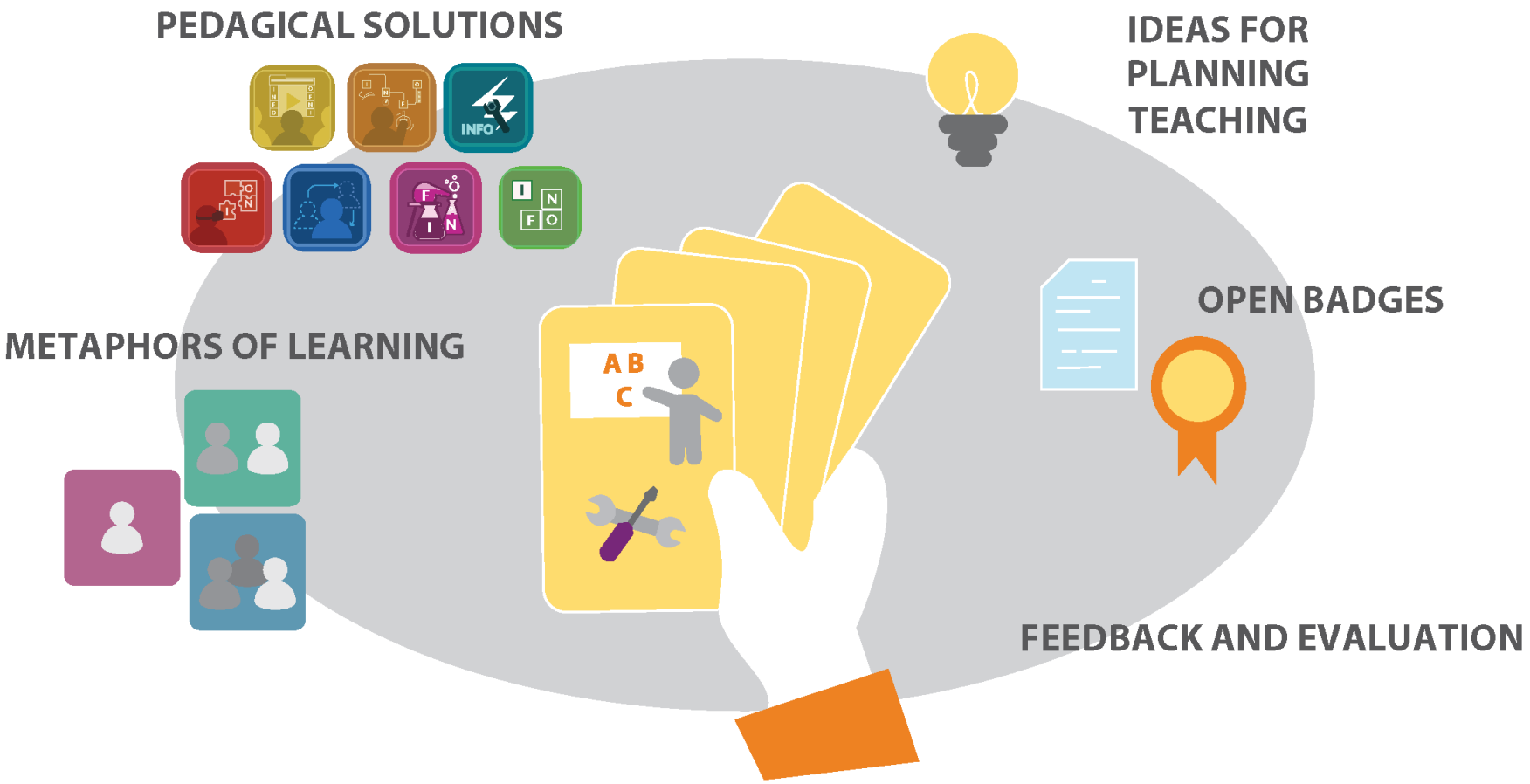


Figure 22. Teacher's pedagogical flash cards (the image is a link to the flash cards)

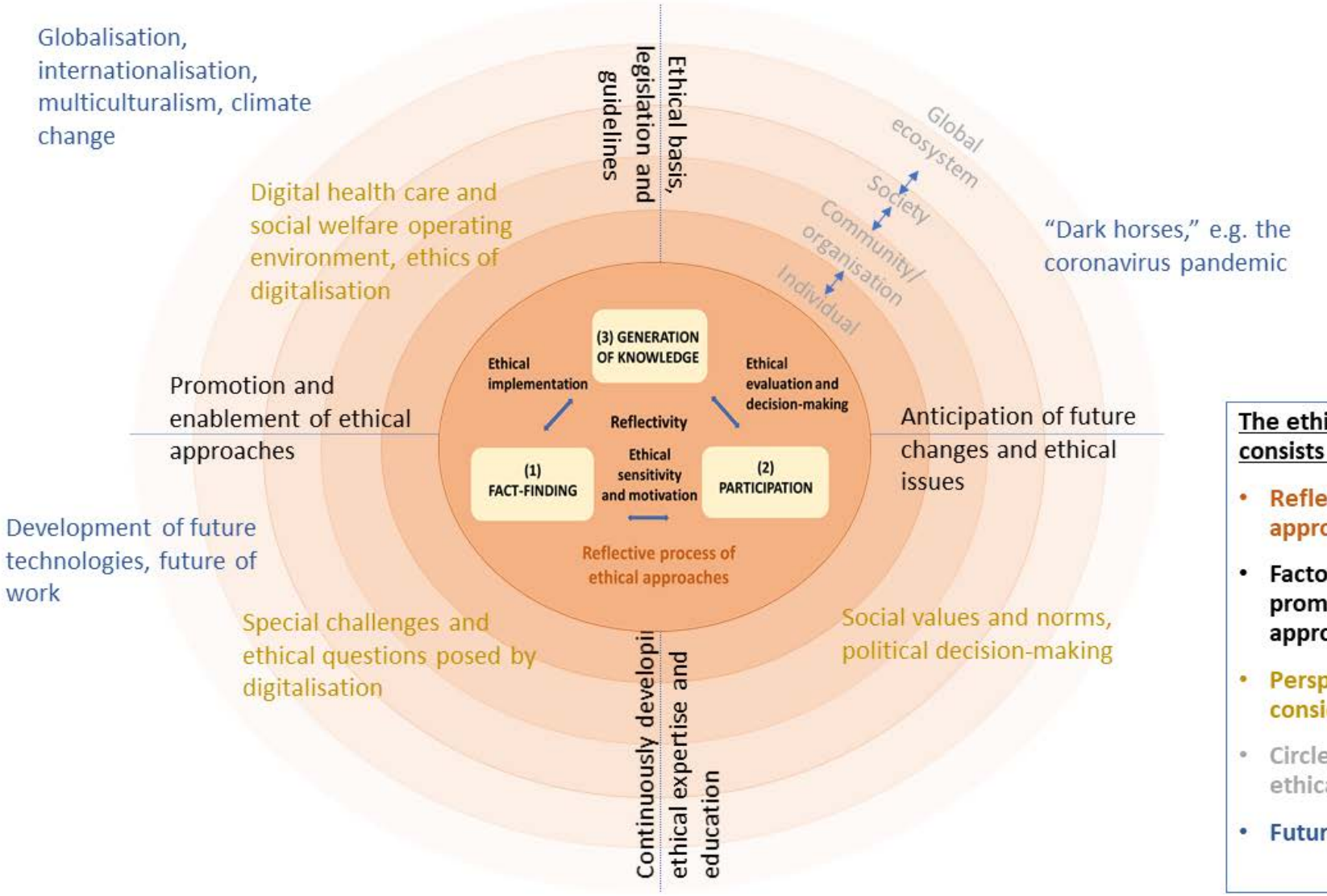
ETHICAL OPERATIONS MODEL

The ethical operations model is a great tool for identifying ethical issues related to digitalisation, ethical evaluation and decision-making, and ethical approaches. The model can be used in training and work in health care and social welfare.

The ethical operations model module consists of five parts that are in constant interaction with each other (see figure 23): reflective process, factors that guide and promote ethical approaches, perspectives to be considered in digitalisation, circles interacting with ethical approaches (individuals, communities, societies and global ecosystem) and future scenarios. Ethical approaches are viewed as a combination of actions (reflective process) and contributory factors. The model shows what kinds of things and skills are connected to ethical problem solving and approaches in an increasingly digital operating environment. The model includes various tools, such as a checklist for the identification and evaluation of ethical issues of digitalisation.

- **The ethical operations model supports learning of ethics and ethical approaches in training and working life (Ethics publication).**
- **Ethical operations model instructions**
- **Three MOOCs: Ethics in health care and social welfare services (1 credit), Ethical operations model (2 credits) and Ethics in telerehabilitation (1 credit).**
- **The ethical operations model is a great tool for identifying ethical issues and challenges, ethical evaluation and decision-making, and ethical approaches in the increasingly digital operating environment and training of health care and social welfare.**
- **The model can be used by individuals and student groups/work communities to reflect on new digi-ethical questions.**
- **The model can be used in the development of curricula to design a progress path for ethical expertise.**
- **The model can be used to plan, organise, produce and evaluate services and to define and implement technologies that support these services.**
- **The model can also be utilised by organisations to execute ethical digitalisation and more.**

ETHICAL OPERATIONS MODEL



The ethical operations model consists of:

- Reflective process of ethical approaches
- Factors guiding and promoting ethical approaches
- Perspectives to be considered in digitalisation
- Circles interacting with ethical approaches
- Future scenarios

Figure 23. Ethical operations model

INTERPROFESSIONAL WORK IN DEVELOPMENT COMMUNITIES TOOLBOX

The *Interprofessional work in development communities* toolbox contains five tools. These tools enable cooperation in service and process development.

The purpose of the tools is to identify different actors and their duties and roles within the service system, design services in a client-oriented and interprofessional manner, and use the models and methods of interprofessional co-development.

The digital *Interprofessional work in development communities* toolbox contains tool descriptions, instructions and examples of use. The tools are available as digital and printable Canvas templates.

TOOLS:

1. Interprofessional Map
2. My Client-Oriented Thinking test
3. Tools for assessing the current state and future of the service system
4. Forming an operational concept from the service development process
5. Self-assessment of interprofessional competence

The tools of interprofessional development networks help design services in a client-oriented and interprofessional manner.

The toolbox contains five tools for interprofessional development.

The toolbox contains instructions on the use of the tools and examples of their use.

The Interprofessional Map helps identify different actors and their roles in the service system.

The My Client-Oriented Thinking test makes health care and social welfare actors aware of their client-oriented thinking.

The tools for assessing the current state and future of the service system help describe services that require interprofessional cooperation.

The service development process tool gives an overview of the development of a service and what contributes to it.

The tool for assessing one's interprofessional competence helps one identify their expertise within interprofessional development communities.

INTERPROFESSIONAL WORK IN DEVELOPMENT COMMUNITIES TOOLBOX

Interprofessional work in development communities toolbox

Goal:

Help identify different actors and their duties and roles in the service system

Help design services in a client-oriented and interprofessional manner

Assist in interprofessional joint development

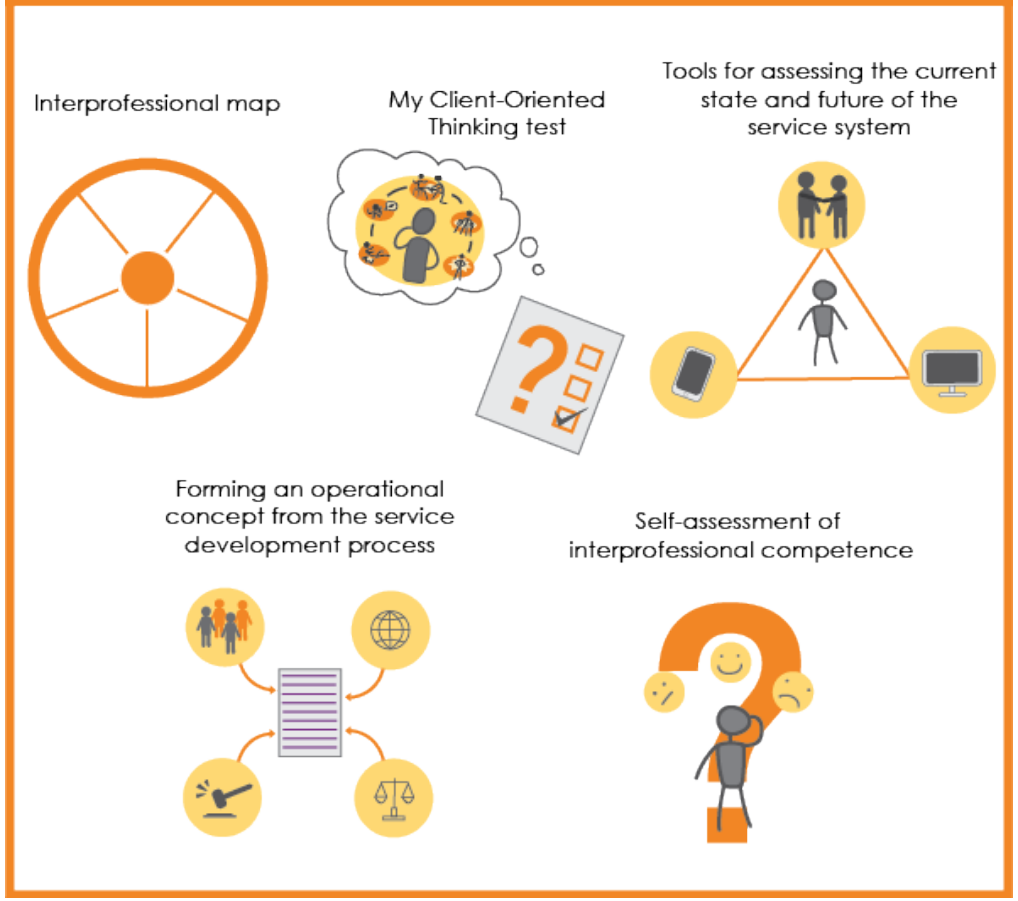


Figure 24. Interprofessional work in development Communities toolbox

TRIALOGICAL METAPHOR OF LEARNING OUTLINING PEDAGOGICAL PRODUCTS

TRIALOGICAL METAPHOR OF LEARNING AND DESIGN PRINCIPLES

The metaphor of trialogical learning underlines the importance of collaborative knowledge co-creation in the generation of new knowledge. At the heart of all this is a concrete object of development. The participants work on this object together using digital tools. The objective is to move from individualistic thinking to more collaborative work approaches.

Design principles (Paavola, S., 2012)

1. Collaborative organisation of activities around shared objects of development
2. Integration of personal and social levels
3. Long-term work processes – working life orientation
4. Interaction and reflection of different forms of knowledge
5. "Cross-fertilisation" of information practices – multisectorality
6. Flexible use of digital tools

The design principles are followed in a flexible manner to ensure all activities are appropriate and support learning.

The trialogical metaphor of learning has guided the development of pedagogical products in this project. Tips for using these products are available in the Teacher's Manual and pedagogical flash cards.

***Basics of trialogical learning* presentation (webinar), Concept Card model**

Collaborative knowledge co-creation supports the process of simulation learning. Concept Cards as objects of collaborative development.

An interprofessional learning project where the goal is to jointly develop a health coaching plan for clients.

Canvas templates can be used to support joint development in trialogical learning.

TRIALOGICAL METAPHOR OF LEARNING OUTLINING PEDAGOGICAL PRODUCTS

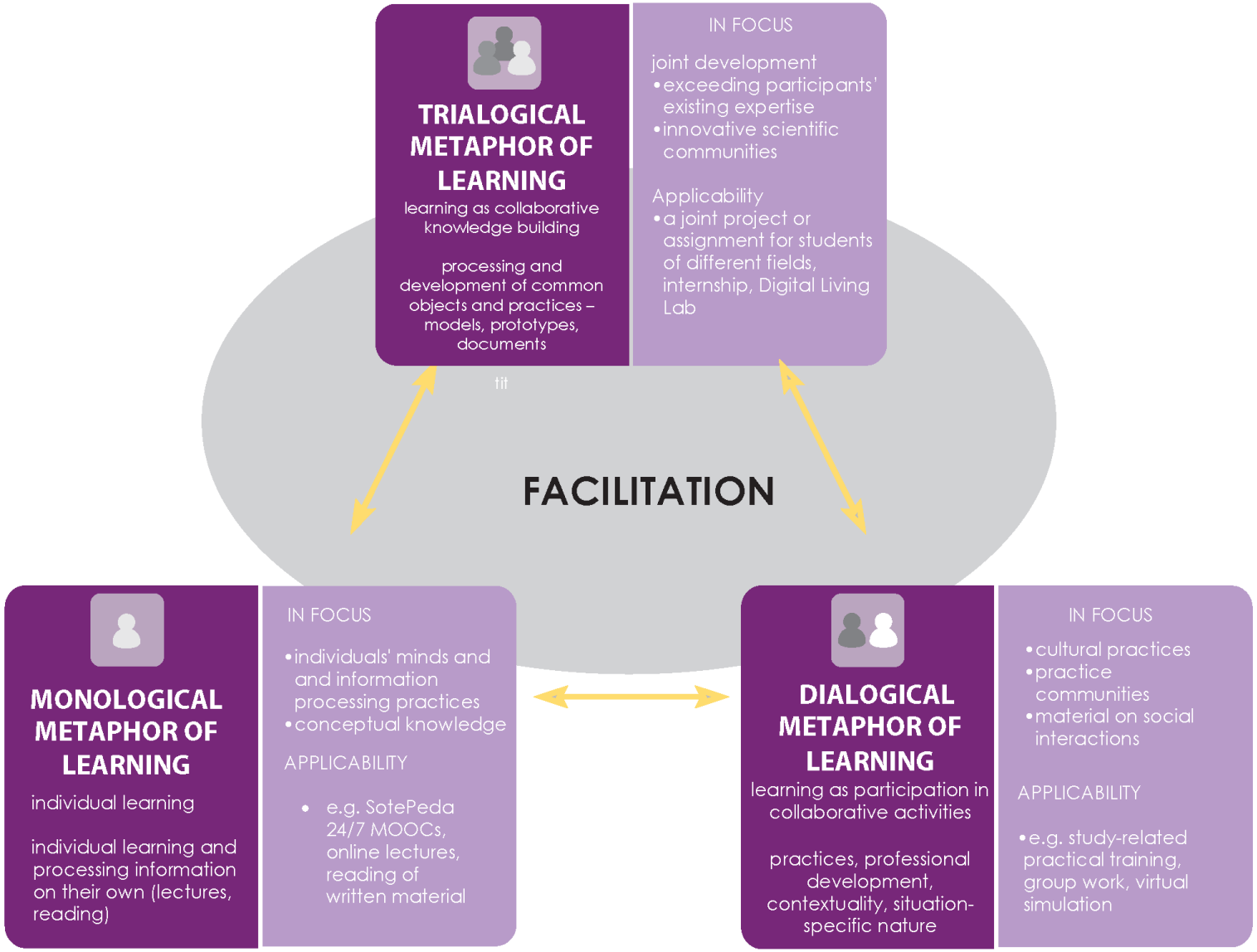


Figure 25. Trialogical metaphor of learning

OVERVIEW OF SOTEPEDA

RESEARCH AND DEVELOPMENT

RESEARCH AND DEVELOPMENT TASKS

Change factors impacting the health care and social welfare service system

1. What is expertise related to digital health care and social welfare services?

- Multidisciplinary expertise in the digitalisation of health care and social welfare and its development
- Teacher's multidisciplinary expertise in the digitalisation of health care and social welfare and its development
- Use of service design skills in health care and social welfare
- Ethical expertise required for digitalisation

3. What kind of new health care and social welfare approaches will be common practices in the future?

- Client-oriented and ethical health care and social welfare work
- Tools for future interprofessional development networks
- Process of co-developing an ethical operations model

2A. What is digi-pedagogical competence?

- Knowledge co-creation in multidisciplinary operating environments of health care and social welfare can be supported with pedagogical models
- Collaborative, digital and flexible learning platforms promote the development of multidisciplinary expertise

2B. What kind of new pedagogical models help one learn digital health care and social welfare skills?

- Micros and MOOCs as teaching and learning methods to improve one's data management skills in health care and social welfare
- Multidisciplinary and flexible learning platforms promote the development of multidisciplinary expertise
- Independent online studies can develop one's capacity to use digital health care and social welfare services and practise knowledge-oriented leadership skills
- Service design training, a mentoring camp, that support the development of students and teachers' service design skills.
- Learning contents and pedagogical methods for learning how interprofessional development networks work
- Ethical operations model and pedagogy support learning ethics

PEDAGOGICAL PRODUCTS

- Micros
- MOOCs
- Service design study module
- Open Badges
- Learning platforms
- Pedagogical instructions and models
- Ethical operations model
- Interprofessional work in development communities toolbox
- Trialogical metaphor of learning outlining pedagogical products

PROJECT INDICATORS

1 Target group

2 Publications

3 Communications

4 Social media

Target group

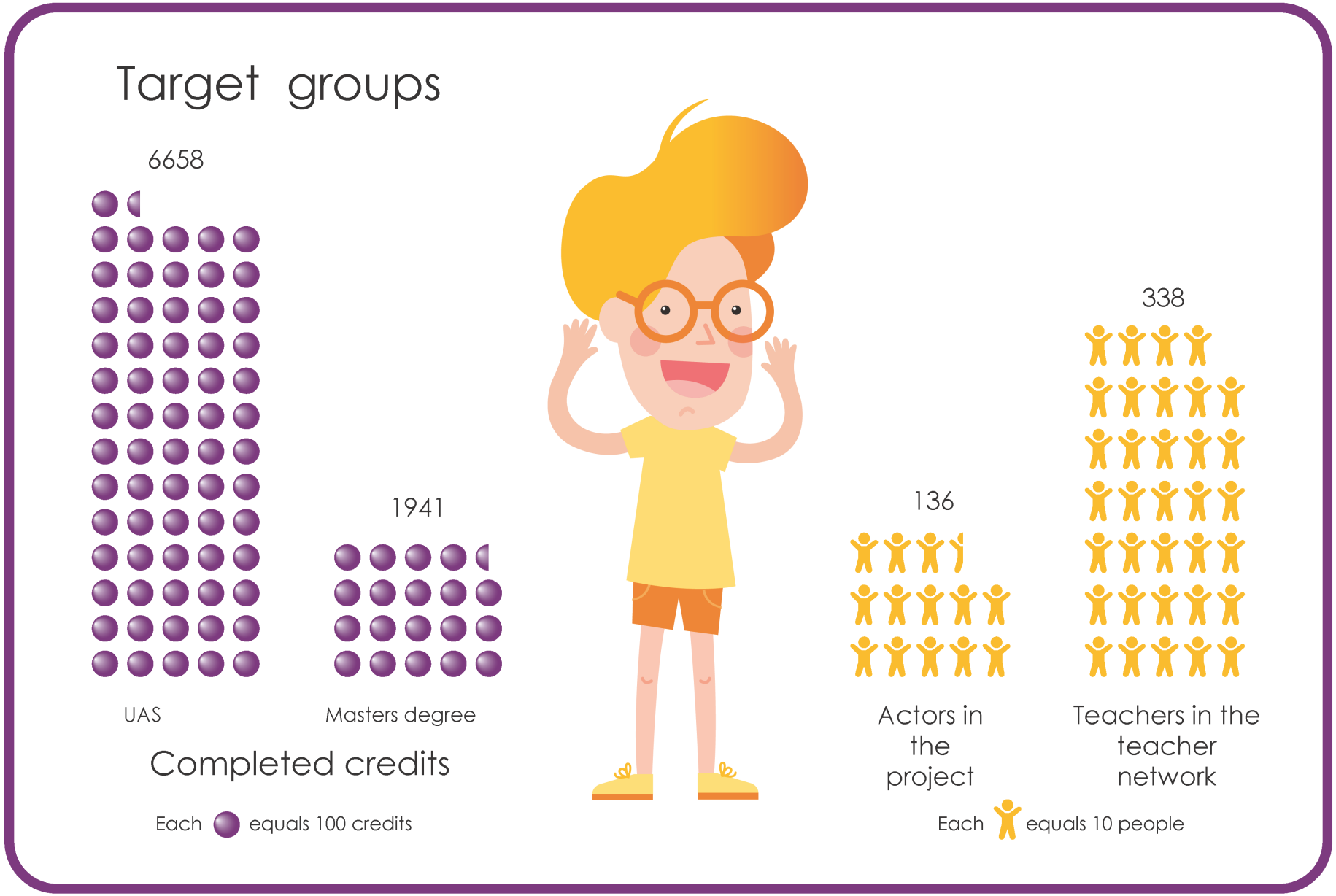


Figure 26. Project target groups

Publications

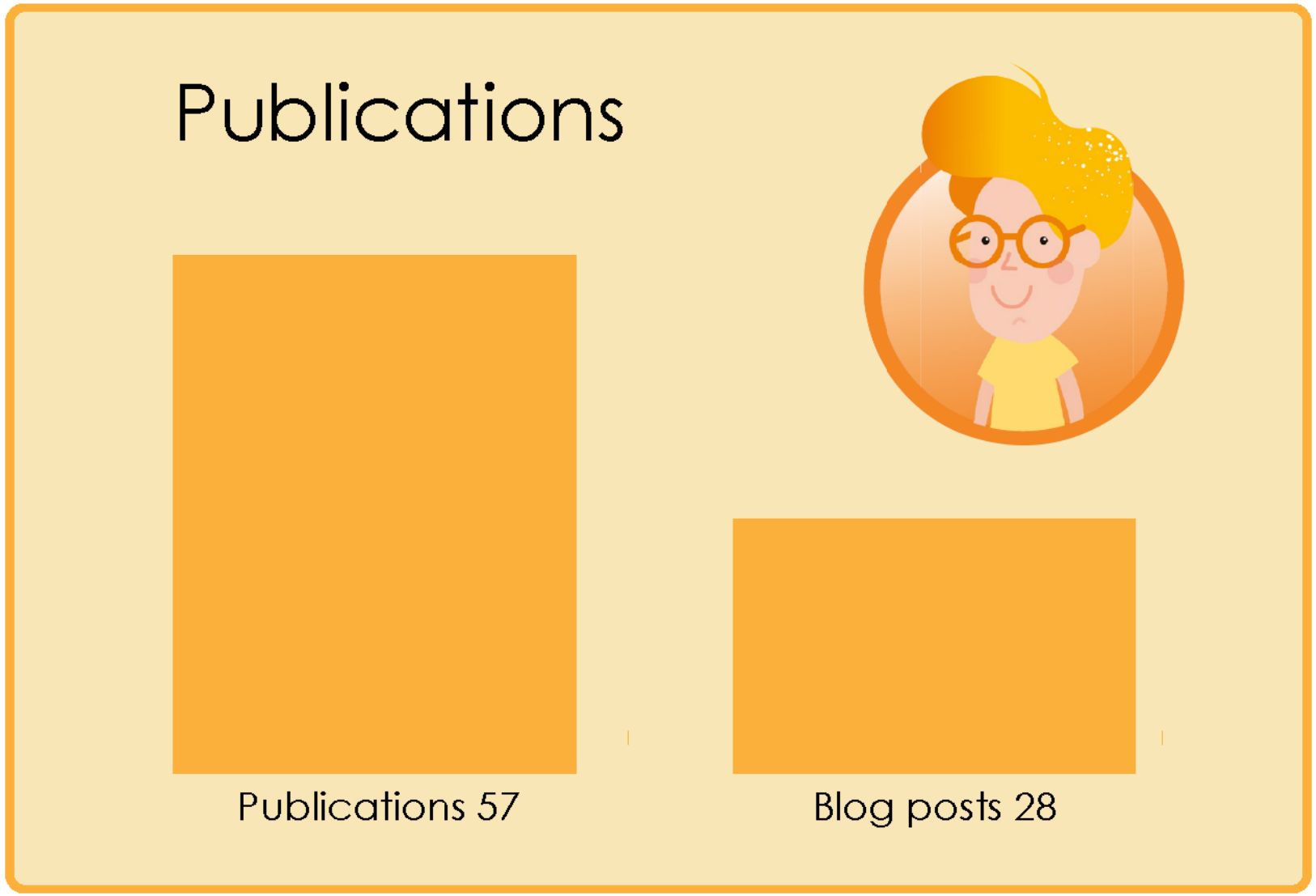


Figure 27. Project publications

COMMUNICATIONS

REGIONAL COMMUNICATIONS

12

INTRANET POSTS

164

PRESENTATIONS

50

Figure 28. Project communications

Social media

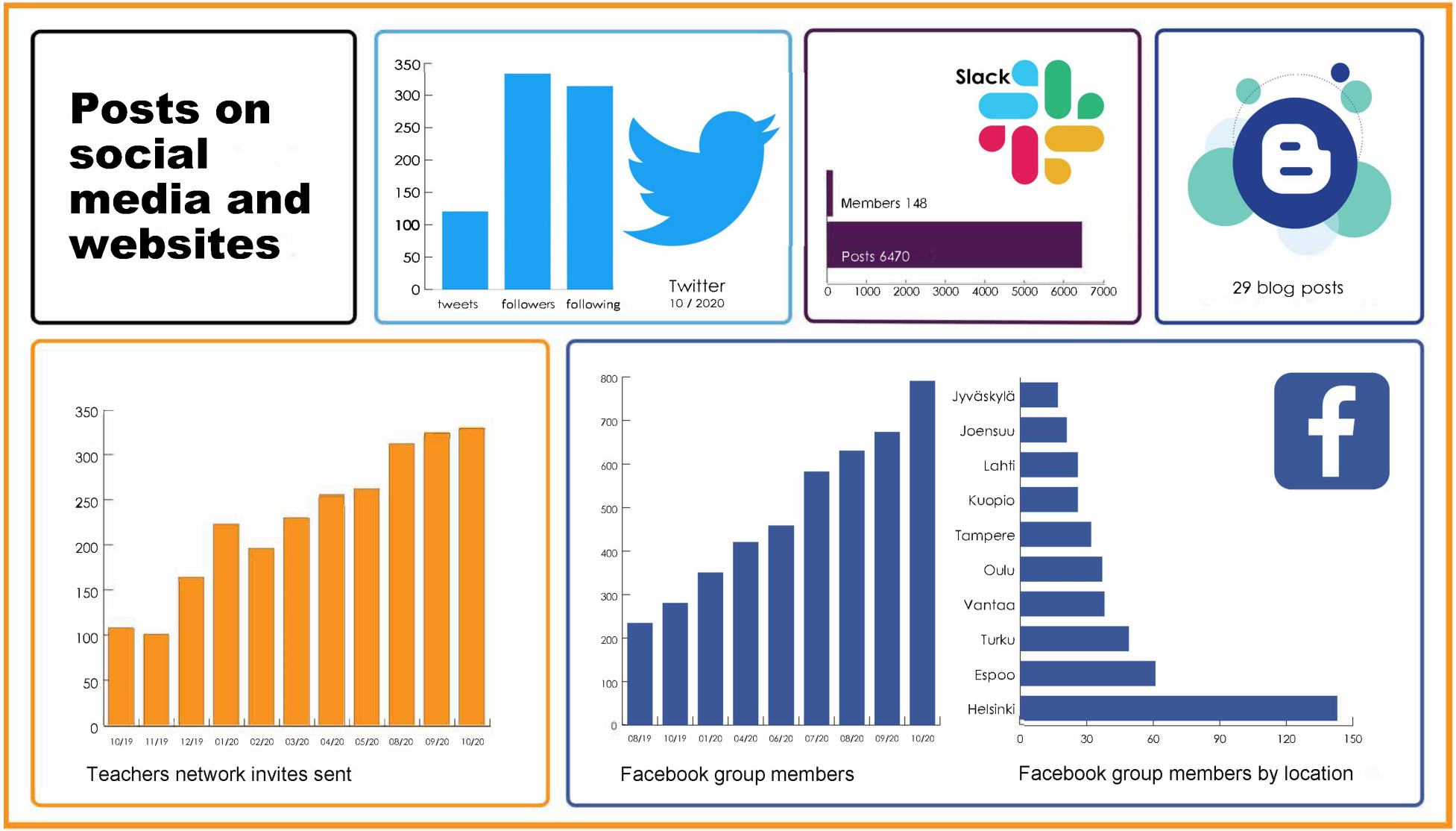


Figure 29. Project social media communications

OVERVIEW OF SOTEPEDA

RESEARCH AND DEVELOPMENT

RESEARCH AND DEVELOPMENT TASKS

Change factors impacting the social welfare and health care service system

1. What is expertise related to digital social welfare and health care services?

- Multidisciplinary expertise in the digitalisation of social welfare and health care and its development
- Teacher's multidisciplinary expertise in the digitalisation of social welfare and health care and its development
- Use of service design skills in social welfare and health care
- Ethical expertise required for digitalisation

2A. What is digi-pedagogical competence?

- Knowledge co-creation in multidisciplinary operating environments of social welfare and health care can be supported with pedagogical models
- Collaborative, digital and flexible learning platforms promote the development of multidisciplinary expertise

2B. What kind of new pedagogical models help one learn digital social welfare and health care skills?

- Micros and MOOCs as teaching and learning methods to improve one's data management skills in social welfare and health care
- Multidisciplinary and flexible learning platforms promote the development of multidisciplinary expertise
- Independent online studies can develop one's capacity to use digital social welfare and health care services and practise knowledge-oriented leadership skills
- Service design training, a mentoring camp, that support the development of students and teachers' service design skills.
- Learning contents and pedagogical methods for learning how interprofessional development networks work
- Ethical operations model and pedagogy support learning ethics

3. What kind of new social welfare and health care approaches will be common practices in the future?

- Client-oriented and ethical social welfare and health care work
- Tools for future interprofessional development networks
- Process of co-developing an ethical operations model

Sote 24/7 Peda

PEDAGOGICAL PRODUCTS

PROJECT INDICATORS

- Target group
- Publications
- Communications
- Social media

- Micros
- MOOCs
- Service design study module
- Open Badges
- Learning platforms
- Pedagogical instructions and models
- Ethical operations model
- Interprofessional work in development communities toolbox
- Trialogical metaphor of learning outlining pedagogical products

The Finnish Context of Digital Health and Welfare Services Behind the SotePeda 24/7 Project

AUTHORS: Outi Ahonen & Jenni Viljanen, Laurea University of Applied Sciences

Finland is one of the world leaders in using digital services. Nearly 88 percent of Finnish citizens use the internet for seeking information and 83 percent use digital services. This trend in visible also in eHealth and welfare services, where an increasing number of users (22 per cent) have met health care personnel online [19]. The contact points in digital health care services have grown from 7.5 million to 8.5 million between 2015 and 2019. At the same time, the number of telephone-guiding contact points has stayed at the same level. The largest number of professionals providing health and welfare services online are nurses and health care nurses. In 2020, there were 7.1 million visits to nurses and midwives online. The second largest number of professionals providing digital health and welfare services are doctors with 2.1 million visits, based on data from the national registration of outpatient visits. [20]

On the other hand, it is always important to keep in mind that there are also citizens who cannot use the Internet as a tool to communicate and get services, making it important for professionals to have the competence to evaluate the best way for the patients to get information and care for their needs. [21, 22]. Those who get along with online services are given care in a way that is most suitable for them. Simultaneously, valuable service time can be saved to those citizens whose more complex situations demand more intensive care. [20].

Competence areas bring strategy to practice

In Finland there are several strategies that focus on the reinforcement of the active role of the citizens and the appropriateness of the services they receive. These strategies include the strategy of the Ministry of Social Affairs and Health: eHealth and eSocial Strategy 2020 (2014–2020) and Strategy 2030 (2019–) [23, 24]. There is also the Finnish Nursing Associations Strategy (2021) for nurses and customers' point of view [21]. The objective of this strategy-level work is to promote citizens' use of online services when it is appropriate for their care needs [19, 21, 23, 24].

Simultaneously with developing new services and activating citizens towards a more active role, we also need to strengthen the professionals' competencies. In the SotePeda 24/7 project, 12 competence areas to multidisciplinary students were defined according to the European qualification (EQF) level 6. [22] Teachers' competencies in health and social care informatics and in digital pedagogy were also developed during the project [26].

The Finnish Context of Digital Health and Welfare Services Behind the SotePeda 24/7 Project

Defined multidisciplinary competencies

It is based on these 12 defined competencies, that the SotePeda 24/7 project strengthened the skills of teachers, students, and professional alike in various fields in the use, management and development of digital services and structures. Funded by the Ministry of Education and Culture and coordinated by Laurea University of Applied Sciences, the projects started in spring 2018 and ended in December 2020. The project involved 23 Finnish higher education institutions and an extensive cooperation network in the field of health care and social welfare.

The SotePeda 24/7 project aimed to reform education in the health and social services sector in such a way that it responds better to the needs of the future. One central step in the reform of education was to make actual changes in the study plans of different educational institutions. In Finland, health and social services education is offered at several autonomous universities of applied sciences. Each of these have their own study plans, and the teachers each have their own high-quality learning materials. In order to have a real impact on studies in the health and social services sector in the future, the project aimed to find a way to affect study plans, and via them the individual courses. This way the expertise of both educators and students can be developed.

A vast amount of open learning material

The project also aimed to create new digital courses and pedagogical approaches that would ensure fluent, year-round digital learning paths for students. As a result, a vast amount of open learning materials was produced in the project: over 400 individual microlearning materials, nearly 30 MOOCs (Massive Open Online Courses), dozens of webinar recordings, articles and other learning and teaching materials. All of these have been licensed under the CC BY-SA 4.0 licence and are openly available at the Library of Open Educational Resources (aoe.fi) and on the SotePeda 24/7 home page.

Here are some of the main materials that are available in English with links to descriptions in the project report: MOOCs, health care and social welfare digitalisation competencies, toolbox for interprofessional work in development communities, teacher's pedagogical flash cards and the ethical operational model.

The ethical operational model is presented only shortly in the report. Made in a co-creation process, the model is one of the central results of the project and a separate publication. [25] The model is valuable also in the international context.

The Finnish Context of Digital Health and Welfare Services Behind the SotePeda 24/7 Project

Lessons learned in the Finnish context

The results of the SotePeda 24/7 project are presented in the project report. In addition to the materials and links presented in the report, some additional tips and pointers can be passed on to those venturing into a similar project. Firstly, the two-and-a half-year project showed that in order for anything to happen, the project must have a wide enough network, covering higher education institutions in a multidisciplinary manner. It is essential that the network consist of representatives of several professions (including IT and service design) and not be limited to only health and social care. When defining and developing competencies, they must be linked to both national and international competence descriptions [22].

One central feature of co-operating with a wide network is the necessity of being able to co-create and co-develop online. In the SotePeda project, this was something that required learning and rehearsing, and the ability to involve the right people. Co-creation in a digital environment is a skill that needs to be learned before it can be utilized in any project. Professionals must have the ability to use digital tools in order for multidisciplinary co-development to take place. When implementing service design in the health and social sector, there are several issues that need to be considered, such as evidence-based practice and ethical issues.

When preparing and planning for a future where digitalization and technology play an ever more important role, it makes sense to start with defining what kind of competencies will be needed in the future. This competence should be viewed in a multidisciplinary way and not only from the point of view of health and social services professionals.

Digitalization and technology enable multichannel services that affect the daily lives of citizens. In addition to the competencies of the health and social services sector, it also requires IT competence, an understanding of the design aspect and ethical aspect of services, and, of course, the perspectives of the citizens themselves. Combining all these competencies in transdisciplinary way, we will create new functional services.

We hope that the materials created in the Finnish SotePeda24/7 project can be used widely as an example in any national project aiming to strengthen the digitalization of the health and social care sector and further co-developing it between higher education institutions, companies, and other working life organizations. All in all, the main of the project was to ensure that citizens are served by skilled professionals, and to make the surrounding operating models and services efficient, smooth and perhaps even more cost-effective for everyone.

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Nella Boman, Haaga-Helia University of Applied Sciences

FIGURES

Figures 1, 4–6, 8–13, 15–22, 24–29. Haanperä Marianne, Janhunen Maija, Jämsén Noora, Kela Päivyt, Kurikka Laura, Leinivaara Tara, Nisu Tanja, Ojala Vilma, Pekkala Eeva, Räsänen Taru (students studying design in Savonia University of Applied Sciences)

Figure 2. Tiainen, Minna & Rantanen, Minttu.

Figure 3. Ahonen, Outi & Rajalahti, Elina & Pöyry-Lassila, Päivi.

Figure 7. Salmi, Anna.

Figure 14. Sihvo, Päivi.

Figure 23. Sihvo, Päivi.

TRANSLATION

Grano Oy

Social welfare and health care digitalisation competencies

PUBLICATIONS

Hinkkanen, L & Tiainen, M. 2019. Osaamisen määrittely oppimateriaalien taustalla. 2019. Blog post. Available at: https://sotepeda247.fi/2020/02/04/osaamisen-maarittely-oppimateriaalien-taustalla/

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Social welfare and health care digitalisation competencies

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Teacher's multidisciplinary expertise in the digitalisation of health care and social welfare and its development

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Sini Eloranta, Sirkku Säätelä, Anna Leena Ruotsalainen, Timo Sirviö)

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