

# REFORM OF TECHNOLOGICAL VOCATIONAL EDUCATION AND TRAINING



Future competence needs | Professional education reform | Development partnerships between vocational upper secondary education, companies and universities of applied sciences | Technology and transport

# TEFORMI GUIDE

<b>Foreword .....</b>	<b>3</b>
<b>Teformi project .....</b>	<b>4</b>
<b>Teformi at the Kouvola Region Vocational College (KSAO) .....</b>	<b>6</b>
<b>Teformi at Tavastia Vocational College.....</b>	<b>8</b>
<b>Work package 3: Cooperation in the Baltic Sea Region.....</b>	<b>10</b>
<b>Teformi models.....</b>	<b>11</b>
▶ Becoming a top expert	
▶ Equipment user manual and easily accessible application forms with QR codes in Vehicle Technology	
▶ Equipment user instructions and blueprint drawings easily accessible with QR codes	
▶ Improving teacher competence	
▶ Electric bicycles/vehicles	
▶ Cooperation with business and industry	
▶ Career guidance	
▶ Assembling an international Teformi developer network	
<b>Conclusion.....</b>	<b>26</b>

# Foreword

**Y**ou are looking at a report on the Teformi project. It presents operating models that support the reform of vocational education and training (VET), and briefly explains the implementation of the project. The publication is specifically aimed at professional teachers and instructors as well as workplace supervisors. The models provide ideas, tips and ready-made practices for deepening cooperation with business and industry in vocational education and training, for utilising digitalisation in student guidance, and for building international cooperation, especially in the fields of technology.

The VET reform entered into force in Finland in 2018. The idea of the Teformi project is to support the implementation of the key development objectives of the reform in the fields of technology: 'Teformi' stands for VET reform in the fields of technology. The key development objectives include competence-based learning, accreditation of prior learning, individual and flexible study paths, student career guidance, and increasing on-the-job learning.

From the perspective of the technology industry, the important task of vocational education and training is to produce competent personnel to fulfil companies' needs. For this reason, the VET reform is of paramount importance. Degrees must be flexible so that we can respond to the needs of the ever-changing labour market. It is important to promote and introduce the opportunities offered by the reformed vocational education and training. From the perspective of business and industry, the transition to compe-

tence-based learning is essential, such as completing degrees regardless of how the skills were acquired. Companies are ready to increase on-the-job learning, but need partnership and support from educational institutions. Cooperation in student career guidance and the development of digital guidance solutions are increasingly important in this time. The Teformi models offer solutions for these development needs.

The models presented in this publication can also be found in the Arjen arkki method bank under search term 'teformi' and on the project website at [www.hamk.fi/teformi](http://www.hamk.fi/teformi)

The Teformi project was implemented in 2018–2021. The project received funding from the European Social Fund, and the national funding authority was the Häme ELY Centre. The project's main implementer was Häme University of Applied Sciences Ltd, with parts of the project also being implemented by Tavastia Education Consortium and Kouvola City, Kouvola Region Vocational College KSAO.

For our fruitful cooperation, we would like to extend our gratitude to all the implementers of the Teformi project, the companies involved in the project, the students, the steering group, and the funders.

We hope you enjoy reading about the Teformi models!

Hämeenlinna, 18 December 2020



Tuomas Eerola  
Project Manager  
Häme University of Applied Sciences



Milka Kortet  
Chair of the Steering Group  
Technology Industries of Finland

# Teformi project

**T**he purpose of the Teformi project is to support the reform of vocational education and training (VET) in the fields of technology, which entered into force in 2018. In the VET reform, vocational education and training was reformed into a competence-based and customer-oriented entity. The aim is to increase on-the-job learning and to make individual study paths more flexible. Another aim is to dismantle regulation and overlap. The new legislation on vocational education and training requires even closer cooperation between VET and business life in anticipating competence needs, organising education and training and assessing competence. VET providers and companies in the region have been challenged to develop new operating models together. Individual study paths require teachers, instructors and even workplace instructors to have the skills to identify competence and provide career guidance.

The Teformi project formed a development partnership between vocational upper secondary education, universities of applied sciences and companies for the purpose of meeting the competence needs of the future and implementing new vocational education and training. The objectives of the project were based on national evaluations, the objectives of regional programmes, and the development needs identified in the project's implementer network. The implementation of the project also observed the horizontal objectives of the Structural Funds programmes: gender equality and sustainable development.

## In order to achieve these objectives, the implementation of the project was divided into three work packages (WP)

### ► WP1 Supporting the reform of technological vocational education and training

The aim of the work package is to develop models for implementing the key principles of the VET reform: increasing on-the-job learning, intensifying cooperation between companies and educational institutions, strengthening teachers' and instructors' career guidance skills.

### ► WP2 Smooth transition from education and training to employment or further training – top expert path

Developing flexible study paths for the labour market and further studies, taking into account students'

individual strengths, pedagogical experiments, and developing top expertise.

### ► WP3 Developing cooperation in the Baltic Sea Region.

Meeting the internationalisation objectives highlighted in regional programmes, carrying out the Baltic Sea Strategy and continuing the development work initiated in the Teformi project as international cooperation

## Project implementer network

### Häme University of Applied Sciences Ltd

Management of the entire project and coordination of work packages (WP), responsibility for WP3, support for the pedagogical development of WP1 and WP2, promotion of the VET reform, national modelling and dissemination, project communications, implementation of initial surveys, development of VET.

### City of Kouvola, Kouvola Region Vocational College KSAO

Responsibility for WP1 and WP2 pilots in Electrical and Automation Engineering and Building Services Engineering, participation in the implementation of WP3, regional establishment and dissemination of good practices.

### Tavastia Education Consortium

Responsibility for WP1 and WP2 pilots in Vehicle Technology, Mechanical and Production Engineering, participation in the implementation of WP3, regional establishment and dissemination of good practices.

## Four fields included

The project includes four fields of technology that were selected on the basis of the needs assessment of the implementer network, with each forming their own development pilot:

- Mechanical and Production Engineering (led by Tavastia Vocational College)
- Vehicle Technology (led by Tavastia Vocational College)
- Electrical and Automation Engineering (led by Kouvola Region Vocational College)
- Building Services Engineering (led by Kouvola Region Vocational College)



Each development pilot carried out a baseline survey led by Häme University of Applied Sciences and prepared pilot-specific development plans that were approved for implementation by the project steering group. An article on the key development objectives titled *Development needs in technology education* was published on the HAMK Unlimited publication platform.

The results of the project are summarised in the operating models produced by the development pilots. Some of the models respond to the objectives of Work Package 1, some of the objectives of Work Package 2. In addition, Work Package 3 produced a model for compiling an international development network and for mapping the common development needs of vocational education and training in the fields of technology.

To assess Teformi's impact, a thematic interview survey was conducted for students who started in 2019. The same interview survey was carried out again for students who started in 2020. The interview target groups consisted of students from Teformi co-implementers: KSAO students in Electrical and Automation Engineering and Building Services Engineering and Tavastia Vocational College students in Vehicle Technology and Mechanical and Production Engineering. The interview was conducted in early 2020. The interview themes concerned the study guidance, study support, career planning and career guidance related to the personal skills development plan (HOKS) process. The results revealed one development target as the need to clear up the significance of the HOKS. It seems that the significance of the HOKS as a process-like tool in everyday life is not being realised. The students also were somewhat uncertain about the possibilities of further studies. (Kallionpää & Turve 2020). In addition to clearing up the significance of the HOKS, the authors of the study proposed providing more detailed information on further studies, the significance of lifelong learning, future workplace competence and career planning during studies.

The same theme interview was conducted for students who started in the autumn of 2020 in December 2020, n=41. As of writing this report, the final results of the interview are not yet available. According to the preliminary results, however, it seems clear that several of the topics proposed for development in the spring have seen positive progress. For example, in guidance and career planning, the students felt that they had received guidance and support. The responses seem to be partly in the same range as in the interview at the beginning of the year. There seems to be room for improvement in increasing discussions between students and teachers in everyday activities concerning career issues and the progress of studies.

The global COVID-19 pandemic impacted the implementation of the Teformi project. Events, specialist exchanges and meetings between project implementers had to be cancelled. The pandemic also impacted on-the-job learning and slowed the progress of students' studies. In autumn 2020, Teformi conducted a survey on the impact of COVID-19 on students' studies, n=25. The students reported that the transition to online studies had hindered learning and slowed down the progress of their studies. In particular, there had been obstacles to on-the-job learning, as not everyone could continue studying at their workplace. For some respondents, their studies had not progressed as planned and were lagging behind. The graduation of one of the respondents had been postponed. On the other hand, some respondents felt that the pandemic has had little to no impact on their studies.

One of the most significant of the cancelled events was the Taitaja2020 event that would have involved a large number of activities related to Teformi. In addition, in Work Package 3, an international workshop summarising the joint development objectives that was planned to be organised in Finland had to be carried out remotely. On the other hand, COVID-19 forwarded Teformi's objectives: it accelerated the deployment of digital solutions and highlighted the importance of hybrid learning environments.





Description of Teformi development, SAKU TIAINEN

# Teformi at the Kouvola Region Vocational College (KSAO)

## Starting point and need for development

In connection with the Teformi project, KSAO carried out a survey led by Ismo Turve mapping out the development targets in the fields of Building Services Engineering, Electrical and Automation Engineering and Construction Technology. Development targets arose during the conversations and as the mapping process progressed. Despite the differences in the fields, their development needs were very similar. These shared results were used to form KSAO's development targets for the Teformi project. The development targets are listed below.

### Cooperation with business and industry

- Workplace supervisor training
- Degree coordinators as contact persons
- Multi-disciplinary approach

### Development of online courses

## Shared learning environments between fields

- Building Services Engineering
- Electrical and Automation Engineering
- Construction Engineering

## Who is involved in the development

Actors from two fields, Electrical and Automation Engineering and Building Services Engineering, were selected for the project. Participants included central companies from these fields and their employees. The employees were extensively involved in the development of cooperation and shared learning environments.

- ▶ R.A.Wickholm Oy, Mika Toikka
- ▶ Kouvola Putkityö Oy, Jarkko Saikkonen
- ▶ Positio Oy, Pasi Väkevä
- ▶ Caverion Oy, Harri Kuoppala
- ▶ KSS-Sähkö, Pasi Kohopää
- ▶ Sähköpalvelu Naukkarinen, Jukka Naukkarinen
- ▶ Caverion Oy, Matti Häkkinen



### What kind of feedback was received

Some of the participating companies have been cooperating with the educational institution for several years already. The feedback received has been very positive and everyone has emphasised the importance of good cooperation between the educational institution and the companies. One of the key points in the feedback was matching companies' needs when placing and organising periods of time in at a company. Nearly everyone giving feedback felt that even closer cooperation and its development will be extremely necessary in the future.

### Key results

New measures and practices have emerged during the Teformi project, and existing ones have been further improved to better meet different needs. Listed below are the most important ones.

- Improving teacher competence
- Career guidance
- Cooperation with business and industry and related development
- Workplace supervisor training
- Shared learning environments
- Top expert path

### What will live on after the project

The work carried out during the project can be considered to have been very effective, and the key items mentioned above are all very important. All of them are already in use in some way, in part or in full. Of course, there are also field-specific variations in these topics. Still, cooperation with business and industry and its further development can be considered to be the most important factor. Another clear and important matter that needs to be established is the use of shared learning environments.

### How the development will continue

The objective is to disseminate all the benefits and experience gained from the project to the fields as established practices and, by continuously developing them, keep them up to date. The supervisor guides and ensures the implementation of good practices and making them part of the work. The results of the development work and their implementation and development need to be taken into account already during the planning phase of an academic year.



# Teformi at Tavastia Vocational College



## Starting point and need for development

Teformi's objective is to support the VET reform, emphasise students' freedom of choice in completing their studies and taking business and industry into account to an increasing extent.

We chose the development of electronic learning environments one of the development targets to enable individual study paths. Practically all of the theoretical study materials were transferred to the Moodle platform. The work had been done and students had been taught to use Moodle and Teams well before the pandemic, so the digital leap in spring 2020 was fairly small.

We used QR codes for accessing the user instructions of the department's work equipment, the safety data sheets for chemicals and some of the forms

used by students to facilitate teachers' work and to promote independent study in the spirit of the reform. Work safety cannot be left entirely up to independent study; everything will still be studied in a teacher-led manner. However, students can use the QR codes to access the instructions to review them. Teachers' digital competence was increased by having them first study and internalise the skills so that they could pass them on to the students.

A course on the maintenance of electric vehicles in the Vocational College's Vehicle Technology track became the main project in Teformi. Together with the City of Hämeenlinna, 4H and enthusiastic professionals in the bicycle industry, this technology that is still unfamiliar to Finnish schools became a module worth 15 credits. Interest in the course has been enormous.



## Involved in the development

- ▶ Personnel from the Tavastia Vehicle Technology and Mechanical and Production Engineering departments participated in the development.
- ▶ The College's IT experts prepped the teachers to improve their digital skills to match the requirements of spring 2020.
- ▶ Experts for the courses in bicycle maintenance were Antti Munnukka from Parolan Pyörähuolto and Petri Takala from the 4H association in Hämeenlinna.
- ▶ For the descriptions of the teaching materials, we worked together with Senior Lecturer Jari Väikkynen.

## The feedback we received

The Teams and Moodle material and everyone's digital skills were tested in March 2020 when the Vocational College switched to remote learning due to the pandemic. Remote work suited some excellently, giving them an additional boost for their tasks. However, towards the summer, the stress of remote learning started to wear on students and teachers. But what's positive is that we had taken the digital leap well before the pandemic, so we were able to start remote learning in March immediately.

We conducted pilot projects on the use of Moodle and the QR codes involving both students and teachers. The feedback was mainly positive. However, participants rejected the possibility of digital learning being the only way of teaching.

The bicycle mechanic courses received glowing feedback in students' course evaluations. On behalf of Teformi, we are still preparing an impact survey where the students of the pilot course share information on how the course has affected their lives.

## Key results

- ▶ Moodle and Teams have become tools for independent and remote learning. Remote education is here to stay. Now that we have a handle on remote learning, we can use it to complement students' on-the-job learning and speed up a students' accumulation of knowledge and skills and shorten the time it takes to complete studies.
- ▶ The use of QR codes has been established as a means of independent study
- ▶ The bicycle course has been made into a local optional qualification module in vocational studies (15 competence points).

## Electronic learning materials

In Mechanical and Production Engineering, the development target was chosen to be the development of electronic learning environments to support individual study paths. The department has learned to use Moodle and built a Moodle platform with a structure matching the basics of the degree. We have produced learning materials to Moodle to support students' professional studies.

The objective is to produce comprehensive online materials for each degree part. One larger project was to design, 3D model and create blueprint drawings for a motorcycle service stand. Students manufacture the service stand as a part of their skills demonstration for production work. In addition, there are several smaller assignments that have been planned and produced to use during workshop teaching.

The blueprint drawings of these assignments are available to students as paper copies and as online materials linked with QR codes. Students can read the QR code to open a blueprint drawing on their phone or tablet. Many materials and assignments have also been produced for the Teams environment to be used for remote learning. These assignments include engineering drawing, machining, 3D printing and measurement and installation technology. We have created teams for each student group in the Teams environment for study materials and assignments consisting of content matching the basics of the degree. The aim is to continue the development of all these areas in the future and to produce more material.

## Establishing projects as practice

Mechanical and Production Engineering uses the produced learning materials daily in workshop teaching and online teaching in the Teams environment. In workshop teaching, some students use QR codes to download blueprint drawings on their phones, while others use their phones to photograph the blueprint drawings. Once the Moodle materials are finished, they will be used alongside the Teams environment.

## How the development will continue

In Vehicle Technology and Mechanical and Production Engineering, the work will continue in all project areas. Learning materials will be developed and transferred to the digital learning environment. For QR code applications, only the sky's the limit. The bicycle course will carry on and has proven to be a possible export product for other educational institutions.

# Work package 3: Cooperation in the Baltic Sea Region

**A**ccording to the Finnish Structural Funds programme Sustainable growth and jobs 2014–2020, international cooperation is important to ensure the availability of skilled labour. Cooperation in the Baltic Sea region can be implemented with regard to lifelong learning and other education, for example by intensifying cross-border cooperation between educational institutions, such as higher education institutions and vocational education and training. For young people in particular, such opportunities could be found in cooperation between education and the labour market, and measures related to the transitional stages of education, such as applying for upper secondary education.

Work Package 3 was implemented under the leadership of Häme University of Applied Sciences, but all the implementers of Teformi were involved. The Work Package took into account the internationalisation objectives of regional programmes. In order to form a network for Teformi, the following model was used.

In the first stage, potential partners in the Baltic Sea region were contacted. These choices were informed by Teformi project partners' previous experiences on smooth cooperation with the parties concerned. Some of the institutions that were contacted were interested in cooperation. Some did not respond to messages. Some were interested in cooperation but were unable to take the opportunity right now.

Next step was to organise organisation-specific workshops with potential partners that were interested in cooperation in order to identify common development needs. The workshops were participated by Teformi's main implementer and co-implementers, experts from the host organisation, sector-specific experts, people from partner companies and other teaching or project staff members. Development needs were collected cumulatively as a basis of the following workshop.

The plan was to organise a joint summative workshop in Finland for all parties. Due to the COVID-19 pandemic and its travel restrictions, the summative workshop was organised as three online meetings. Each partner chose their representatives for the online meetings. As a result, the network consists of VET providers and their business partners



from Finland (3), Estonia (1), Latvia (1) and the Netherlands (1). Poland is also involved in the student mobility project.

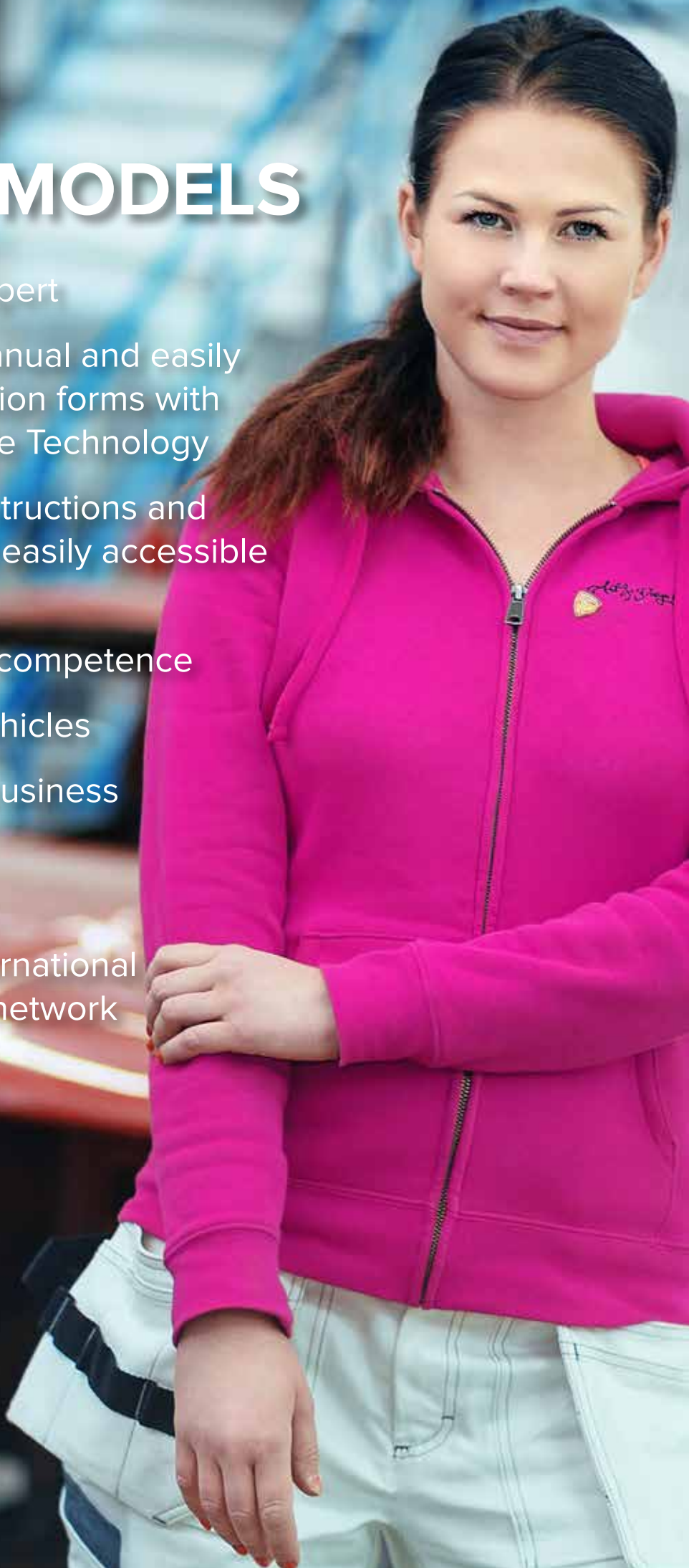
## International workshops organised:

- Bydgoszcz, Poland, February 2019, hosted by Zespół Szkół Samochodowych and Technikum Budowlane w Zespole Szkół Budowlanych, Bydgoszcz
- Tallinn, Estonia, May 2019, hosted by Tallinn Lasnamäe Mechanical School
- Priekuli, Latvia, November 2019, hosted by Vidzemes Tehnoloģiju un dizaina tehnikums
- Hämeenlinna, Finland, hosted remotely by Häme University of Applied Sciences. The joint summative workshop planned for Finland was organised as three online meetings in spring 2020. The developer network was also joined by ROC Friese Poort from the Netherlands.

As a result of the workshops, the international Teformi network identified common needs for the development of vocational education and training in the fields of technology and drew up an Erasmus+ project application which received a three-year funding grant. This way, the development work started at Teformi now continues in the international NextSteps@TechVET project. The model also generated other mobility projects between the partners. The model is applicable to the formation of other international networks.

# TEFORMI MODELS

- ▶ Becoming a top expert
- ▶ Equipment user manual and easily accessible application forms with QR codes in Vehicle Technology
- ▶ Equipment user instructions and blueprint drawings easily accessible with QR codes
- ▶ Improving teacher competence
- ▶ Electric bicycles/vehicles
- ▶ Cooperation with business and industry
- ▶ Career guidance
- ▶ Assembling an international Teformi developer network





## Becoming a top expert

### Description

The aim is to provide each student with diverse ways to carry out their studies. Teachers of each field prioritise individuals' needs and tailor the most suitable and individual studying methods for each student. Students' objectives are taken into account individually and, in accordance with their personal objectives, they will be able to achieve a top expert path to a profession and easy transition to employment or further studies.

Teachers should offer students flexible and diverse ways of completing studies in a multi-disciplinary manner. The top expert path makes it possible to achieve professionally demanding goals and the top level of your field.

The path may consist of a period of time in an international enterprise, competitions and preparation for competitions, working in tasks requiring top expertise, or completing studies at a higher education institution alongside vocational studies.

### Resources

Time resource used to create and update each student's HOKS (personal skills development plan). Time resource used to plan and implement the modules of a degree. Personnel resource used for cooperation with other fields. Personnel, time and material resources used for planning and implementing competition and coaching activities.

### Establishment / development ideas

The educational institution has resources and a time frame for creating a HOKS. It would still be important to develop the HOKS updating process to record the comments of each teacher. Cooperation meetings with other fields have been carried out in the participants' workspaces, and the challenge is remembering to organise these meetings at regular intervals. Competition activities have been made systematic and open. There are regular communications about this subject in different teams. Our educational institution uses the 5-year competition programme. We should use competition activities to get teachers inspired by and motivated about competition and competence development.

### Contact details

Pekka Kurko, Kouvola Vocational College, Building Services Engineering, pekka.kurko@ksao.fi





## Equipment user manual and easily accessible application forms with QR codes in Vehicle Technology

### Description

The student can easily access an instruction manual using a QR code attached to a piece of equipment. In the same way, teachers can give instructions on using forms, such as applying for meal allowance etc.

### Resources

The point of this procedure is that once it is done, it does not take up any more personnel or time resources.

### Establishment / development ideas

Some equipment/forms have been QR coded and piloted (Teformi pilot on the use of a vehicle stand). The work will continue and the students will be instructed to use the codes for work instructions. Occupational safety cannot be left entirely up to QR codes; teachers will initially instruct students on safe usage, and students have verified their competence with a signed tool card. QR code instructions are only for revision.

### Contact details

Jorma Lakso, Tavastia Vocational College, Vehicle Technology, jorma.lakso@kktavastia.fi

### Further information

In addition, we have QR codes for the safety data sheets of chemicals used in the department. The codes are always available on the shelf of the chemical in question, so students can see the properties of a chemical when they use it.





## Equipment user instructions and blueprint drawings easily accessible with QR codes

### Description

A QR code reader is installed on the user's phone or tablet. QR codes are placed in a workshop, linked to an online location where learning materials are available for working in the workshop. Students can use the QR codes to access a blueprint drawing or machining equipment manual on their phone or tablet. Machine-specific operating and maintenance instructions can also be linked with QR codes for reading in the workshop.

### Resources

Implementation requires personnel resources: converting learning materials to PDF format and moving them to an online location. Creating QR codes and linking them to an online location. The amount of required resources depends on how much material is linked to be used.

### Establishment / development ideas

Workshops have visible blueprint drawings and QR codes linked to them. Students are instructed to install and use a QR code reader. The number of blueprint drawings and instructions linked with QR codes can still be increased.

### Contact details

Aki Mylly / Kimmo Kuisma, Tavastia Vocational College, Mechanical and Production Engineering,  
aki.mylly@kktavastia.fi / kimmo.kuisma@kktavastia.fi

## Improving teacher competence

### Description

The development of hybrid learning environments and digital materials requires imagination, dedication to the work and personally complementing professional competence. To support individual study paths, it is a good idea to create learning materials and environments that can be used almost anywhere. For example, using electronic materials is an excellent way to enable better and deeper learning for many subjects compared to conventional contact teaching.

A multi-disciplinary approach to other fields is one of the excellent reinforcement factors in the everyday life of educational institutions. It improves job satisfaction and also enables multi-disciplinary studies for students. It is how we promote the development of multi-skilled people and create networks and contacts in different fields. It will help us match the right experts with the right tasks.

Teachers' placements in enterprises help teaching staff maintain their competence. By participating in business and industry and seeing what the professionals' work and the methods involve, teachers can find the latest solutions that are used to benefit the developing world. An educational institution environment alone can alienate teachers from the activities and customs of business and industry.

Qualification upgrades and continuing education help teachers stay on top of newest developments. Continuing education is one way of developing individual competence, and continuing education provides competence that can be used to serve students and the labour market.

Coaching and competition activities "force" teachers to develop their personal teaching methods and competence. In order for students to be able to compete at national level and strive for success, they need to have access to high-quality teaching and coaching. The aim of competition and coaching activities is to promote the quality and attractiveness of vocational education and training and to build the world's best professional expertise together with our partners.

### Resources

Time resources for further education for teachers. Time resources for teachers' placements in enterprises approx. 2 to 4 weeks. Time resources for developing teaching materials.

### Establishment / development ideas

Teachers are encouraged to develop themselves, and educational institutions offer different types of training for personal development. Good practices and successful implementations should be shared and brought to everyone's attention. Even effective practices should be developed continuously. Open interaction within the educational institution, positive growth from positive experiences.

### Contact details

Pekka Kurko, Kouvola Vocational College, Building Services Engineering, pekka.kurko@ksao.fi





## Electric bicycles/vehicles

### Description

A new local vocational unit has been planned for the Vocational Qualification in Vehicle Technology. Servicing and repairing electric bicycles. Students within the educational institution and many people outside the educational institution have applied for this module. Some have completed this module as an apprenticeship.

### Resources

A lot of good planning and good partners involved in planning.

### Establishment / development ideas

Is now a local part of the Vocational Qualification in Vehicle Technology. Further plans on establishment are already under way.

### Contact details

Jussi Kärkkäinen, Tavastia Vocational College, Vehicle Technology, [jussi.karkkainen@kktavastia.fi](mailto:jussi.karkkainen@kktavastia.fi)



## Cooperation with business and industry

### Description

Based on the national service design process carried out in the 'Parasta' development programme together with business and industry.

#### **1. Accessibility and visibility**

- customer service
- channels
- responsibility for the customer
- communications and marketing

#### **2. Student capabilities**

- prior skills
- labour market skills
- motivation
- career path

#### **3. Preliminary planning together**

- student
- teacher
- employer
- workplace supervisor

#### **4. Workplace guidance**

- planning
- workplace supervisor's orientation
- student's learning and feedback
- instructor support

#### **5. Transitions, exceptional situations**

- operating methods
- information flow
- communications
- flexible transitions

#### **6. Constructive feedback**

- service process development
- feedback from business and industry and students
- response
- utilisation

#### **7. Quality of skills demonstrations**

- planning
- implementation and scheduling
- uniformity

#### **8. Customer relationship maintenance**

- thanks and appreciation for the partnership
- active supply
- customer relationship management



## Resources

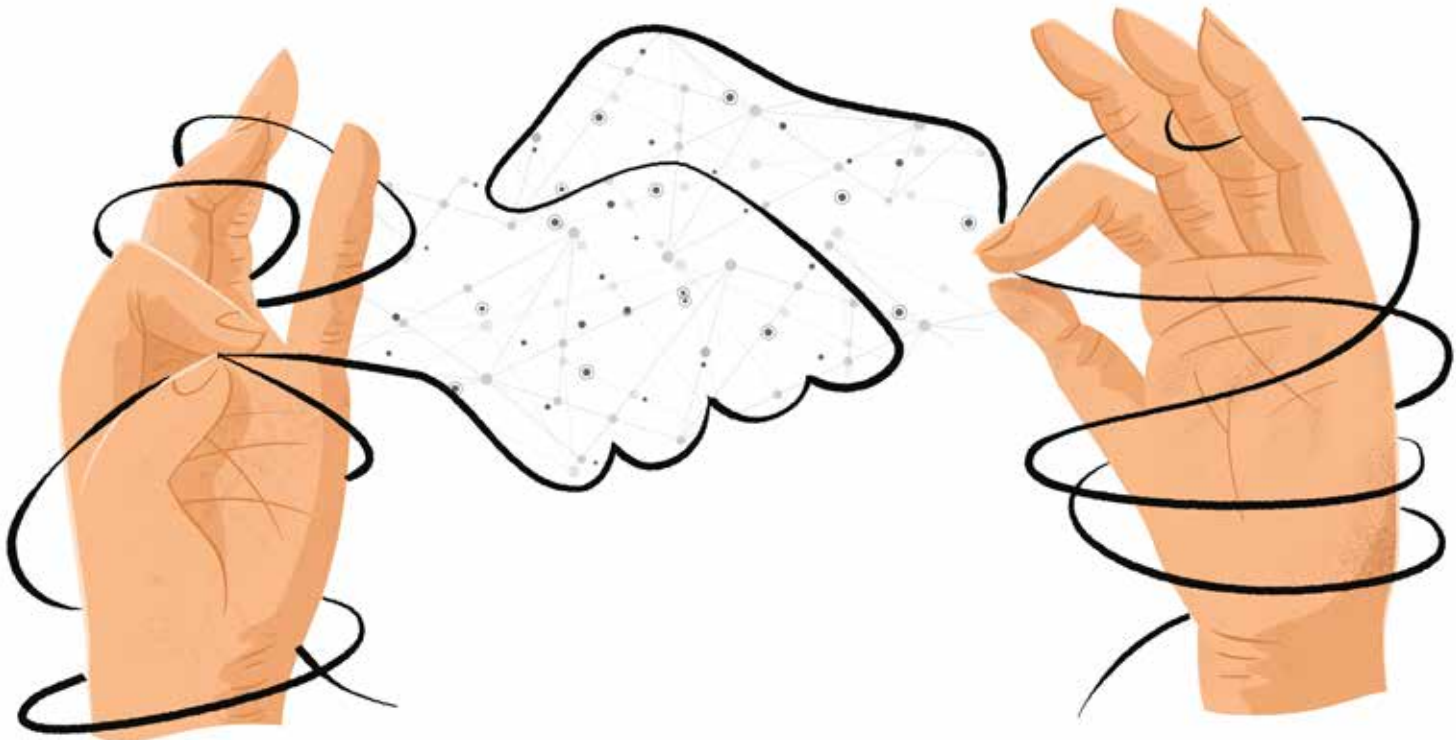
Interaction with business and industry, time resources already exist for this with TEO supervision. Business and development services at our educational institution are constantly tuned to the needs of business and industry. Time and personnel resources for supporting workplace supervisors and continuing education for the workforce. Personnel resources for collaboration and customer service. Listening to needs and presenting our services.

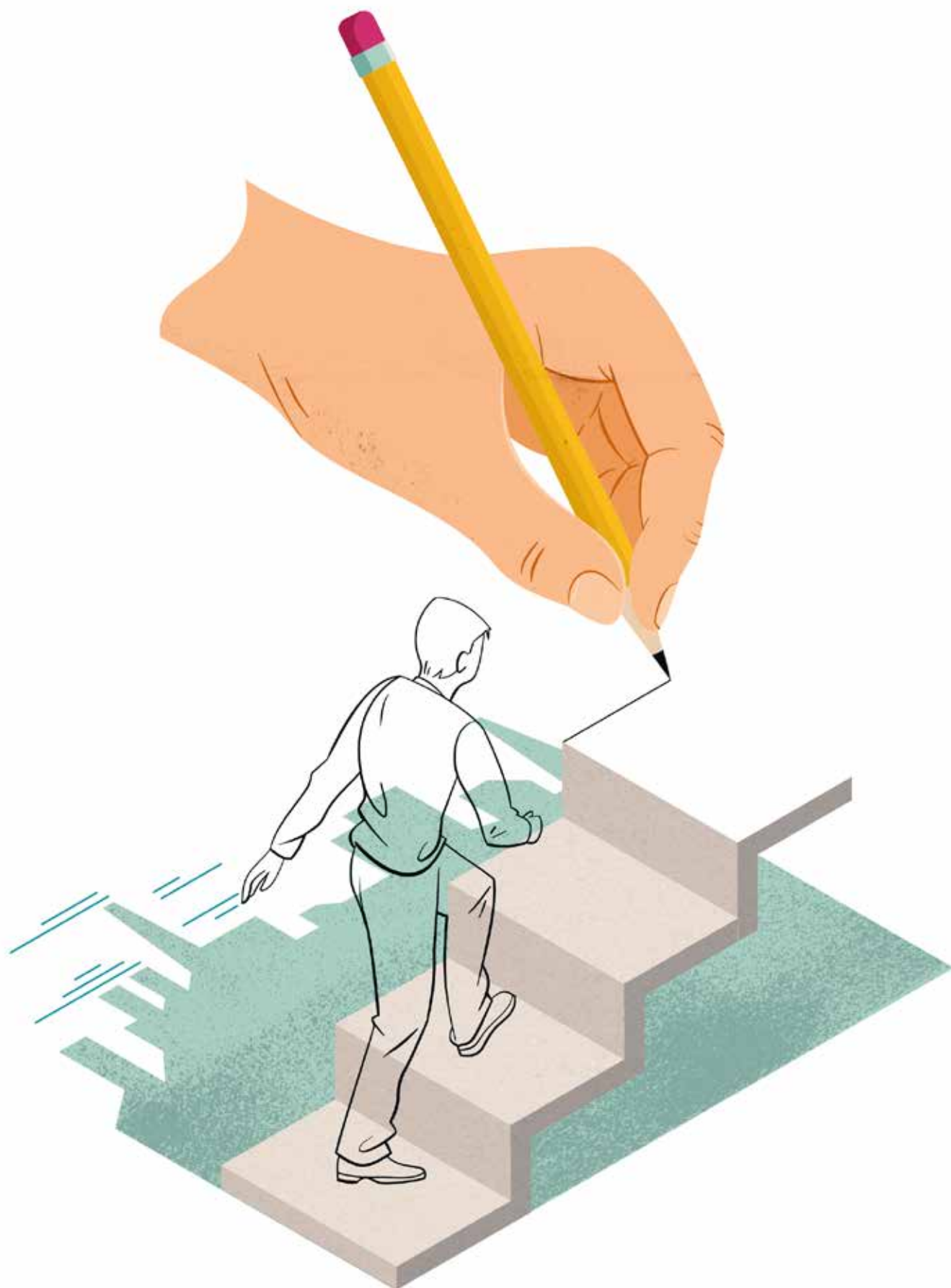
## Establishment / development ideas

Regular and irregular meetings with business representatives. Marketing events where there are business representatives, → wholesalers, companies and worksites. If necessary, business representatives are also invited to the school to introduce themselves to students, to be a recruitment channel for companies. Visit worksites with students and provide support for workplace supervisors for guiding students, also possible for us to use business facilities as teaching environments.

## Contact details

Pekka Kurko, Kouvola Vocational College, Building Services Engineering, pekka.kurko@ksao.fi





## Description

The aim is to form a top expert path, aiming at a smooth transition from one level of education to another (primary, secondary, advanced studies) or to the workforce. This requires planning the students' individual path, supporting their objectives and providing career guidance. Career guidance is divided into four stages where the parties involved implement the activities included in career guidance.

### 1. Application phase

- Application office
- Application coordinator
- Career coach / Student counsellor
- Responsible teacher / teacher
- Special support coordinator / Teacher in charge of special support
- Student affairs secretary

### 2. Initial stage of studies

- Career coach
- Student counsellor
- Responsible teacher
- Special support coordinator / Teacher in charge of special support

### 3. During studies

- Career coach
- Student counsellor
- Responsible teacher
- Special support coordinator / Teacher in charge of special support

### 4. Final stage of studies

- Career coach
- Student counsellor
- Responsible teacher
- Special support coordinator and teacher

## Resources

Personnel resources for cooperation with comprehensive schools and business and industry. Human resources for creating marketing transactions. Time resources for drafting a student's personal skills development plans (HOKS) and for filling in entries to maintain said plan. Time resources for interaction with students and business and industry.

## Establishment / development ideas

Students have discussions with career coaches as well as responsible teachers. Student counsellors provide information to comprehensive schools, and teachers keep in touch with business and industry. Marketing / introductory events are organised for comprehensive school pupils and also for sector-specific training trials for those who want them. There should be even more time to supplement the HOKS so that, as a student progresses in their studies, teachers could enter the relevant information.

## Contact details

Pekka Kurko, Kouvola Vocational College, Building Services Engineering, pekka.kurko@ksao.fi



## Assembling an international Teformi developer network

### Description

According to the Finnish Structural Funds programme Sustainable growth and jobs 2014–2020, international cooperation is important to ensure the availability of skilled labour. Cooperation in the Baltic Sea region can be implemented with regard to lifelong learning and other education, for example by intensifying cross-border cooperation between educational institutions, such as higher education institutions and vocational education and training. For young people in particular, such opportunities could be found in cooperation between education and the labour market, and measures related to the transitional stages of education, such as applying for upper secondary education.

In order to form a network for Teformi, the following model was successfully used:

Contacting potential partners primarily in the Baltic Sea region. Observing the previous experiences of Teformi project partners on smooth cooperation and the internationalisation objectives of the regional programmes.

Organisation-specific workshops with potential partners that were interested in cooperation in order to identify common development needs. The workshops were participated by Teformi's coordinator and co-implementers, experts from the host organisation, sector-specific experts, people from partner companies and other teaching or project staff members. Development needs were collected cumulatively as a basis of the following workshop.

Finally, a joint summative workshop for all partners was organised in Finland (due to the COVID-19 pandemic and its travel restrictions, the workshop was organised as online meetings). Each partner chose their representatives for the workshop. As a result, the network consists of VET providers and their business partners from Finland (3), Estonia (1), Latvia (1) and the Netherlands (1). Poland is also involved in the student mobility project.

### Resources

The entire process of compiling the network from first contact to the finished joint project plan took about one and a half years in this case. Personnel resources required:

project manager or another person responsible for assembling the network

- making contact, preparing and implementing workshops
- travel
- making summaries
- planning and implementing the summative workshop
- preparing the joint development project and writing a project plan

field-specific specialists

- participating in workshops
- travel
- participating in the summative workshop
- preparation of a joint development project: project coordinator / assistant
- practical arrangements for workshops
- writing a project plan and tasks related to the application process



## Establishment / development ideas

The international Teformi network prepared a joint Erasmus+ project application which received a three-year funding grant. This way, the development work started at Teformi now continues in the international NextSteps@TechVET project. The model also generated other mobility projects between the partners. The model is applicable to the formation of other international networks.

## Contact details

Project Manager Tuomas Eerola, Häme University of Applied Sciences (HAMK), [tuomas.eerola@hamk.fi](mailto:tuomas.eerola@hamk.fi)

## Further information

[www.hamk.fi/techvet](http://www.hamk.fi/techvet)

# Conclusion

**T**he goal of the Teformi project was to produce models for reforming vocational education and training (VET) in the fields of technology in line with the principles of the reform that entered into force in 2018. The project succeeded in reaching this goal. The project significantly promoted the activities of the organisations participating in the project and cooperation with companies. The developed operating models are established in organisations' everyday life. The hope is to share the best models developed in the project for others to use as well. The models described in this guide benefit and give ideas to all VET implementers and developers.

**“Anticipating competence needs and the development and assessment of competence require ever-closer cooperation between VET providers and business and industry.”**

The models described above contain ideas for developing career guidance, cooperation with business and industry in vocational education and training, digital guidance solutions and international cooperation. Hopefully you, dear reader, also got new ideas for developing your own work.

Cooperation between the Teformi project partners continues, involving international companies and partners from Estonia, Latvia, Poland and the Netherlands. On-the-job learning and flexible study paths for students will be further developed in the NextSteps@TechVET project in 2020–2023.

There is still a lot to be developed in vocational education and training in the fields of technology. The ever-increasing change in the labour market requires

us to develop education continuously. Anticipating competence needs and the development and assessment of competence require even closer cooperation between VET providers and business and industry. Cooperation and flexible solutions for competence development for both young people and adults are essential to meet future competence needs and to educate experts in technology to meet the needs of companies in the future.

Tuomas Eerola  
Project Manager  
Häme University of Applied Sciences









**Project website:** [www.hamk.fi/teformi](http://www.hamk.fi/teformi)

**Project Facebook page:** [www.facebook.com/teformi](http://www.facebook.com/teformi)

**Project blog:** <https://blog.hamk.fi/teformi>

## Contact details

Tuomas Eerola  
HAMK Edu  
Project Manager  
+358 40 587 8188  
[tuomas.eerola@hamk.fi](mailto:tuomas.eerola@hamk.fi)

Antti Viiman  
HAMK Edu  
Project Coordinator  
+358 50 521 6368  
[antti.viiman@hamk.fi](mailto:antti.viiman@hamk.fi)

Jorma Lakso  
Tavastia Vocational College  
Project Manager  
+358 50 440 0851  
[jorma.lakso@kktavastia.fi](mailto:jorma.lakso@kktavastia.fi)

Juha Hänninen  
Kouvola Region Vocational College  
Project Manager  
+358 40 489 9327  
[juha.hanninen@ksao.fi](mailto:juha.hanninen@ksao.fi)

## Implementers of the Teformi project



Leverage from  
the EU  
2014–2020



The main implementer of the project is Häme University of Applied Sciences. The project receives funding from the European Social Fund, and the national funding authority is the Häme ELY Centre. The project will run from 1 March 2018 to 28 February 2021.