Tampere University of Applied Sciences

Leading the Development of Teachers' Digital Competence

Case TAKK Tampere Adult Education Centre

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ABSTRACT

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The development of teachers' digital competence is a strategically important area in an educational organization. The world around us is changing rapidly and maintaining competitiveness as well as adapting to change require continuous development of competence. In order to execute a concrete strategy of developing teachers' digital competence, it is essential to first analyze the current state of the organization's digital capacity, including teachers' digital competence.

The purpose of this thesis is to enhance the continuous professional development of teachers' digital competence by analyzing the effects of leadership on it and by exploring the role of management in supporting the teachers' digital competence development. This thesis is a case study focusing on a development project of Tampere Adult Education Centre called Digitalized Learning Path for Educational Organizations. The project objectives are to create an organizational digital strategy and a model for teachers' digital competence development. The theoretical framework used in this development is the European Framework for the Digital Competence of Educators (DigCompEdu). The author conducted this research while also being the coordinator of the case project.

This was a qualitative study. Document analysis and service design were used as research methods. The research included a service design workshop for TAKK management on leadership of competence development, analysing teachers' experiences on their development of individual learning paths, as well as analysing the relevant responses to a self-reflection survey on digital competences, including the views of both management and teachers.

The main findings indicate that leadership influences teachers' level of motivation and commitment to the development of their digital competence. Setting clear objectives and understanding their benefits together with effective communication helps leaders minimize change resistance and encourage continuous professional development. In this, leaders' own attitude and behaviour play an important role. Based on the results of this thesis, concrete steps for leading the development of teachers' digital competence include creating and updating a digital strategy with clear objectives, enhancing communication and actively supporting the implementation of teachers' competence development activities.

Further research recommendations include investigating the benefits of learning analytics also on teacher' competence development.

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Key words: digitalization, digital competence, technology, leadership, change management

CONTENTS

ABBREVIATIONS AND TERMS

CheckIn-tool   Self-reflection tool for educators

CPD   Continuous Professional Development

DigCompEdu   European Framework for the Digital Competence of Educators

JRC   Joint Research Centre

SELFIE -tool   Self-reflection on Effective Learning by Fostering the use of Innovative Educational Technologies -tool

TAKK   Tampere Adult Education Centre

1 INTRODUCTION

This thesis investigates the effects of leadership on the development of teachers' digital competence. Digital competence means the *"confident and critical use of digital technology"* (European Commission, 2007), which in this case is investigated specifically related to educational operations. This research was commissioned by Tampere Adult Education Centre, from now on referred as TAKK. TAKK is also the case organization of the study and will be introduced in more detail in Chapter 2.

This thesis is a case study concentrating on the Erasmus+ development project *Digitalized Learning Path for Educational Organizations*, coordinated by TAKK. The project will be introduced in Chapter 5. In short, the objective of this development project is to find out how leadership affects teachers' digital competence development and based on findings, focus on developing an organizational digital road map as well as teachers' individual learning paths for digital competence development. Investigating the objectives in more detail helps gaining a deeper understanding on the development process and further steps that need to be taken. It also helps applying the project results into practice.

The objectives of TAKK's strategy focus point *"Internal operating models and capabilities"* provide the need for this thesis research. Creating an internal operating model for competence development requires that critical competence areas be first defined. In TAKK's case, digital competence has already been selected as one of the focus areas and it is also the theme of the case project.

Furthermore, based on observations and conclusions from prior development work conducted mainly by projects, together with the objectives of TAKK's strategy, a need for a systematic approach and a model for the development of teachers' digital competence exists. In this case study, this development process is investigated from a leadership point-of-view.

The purpose of research is to evaluate the implemented development steps of the case project, as well as create a picture of how leadership affects the overall

process of teachers' digital competence development. From the leadership perspective it is necessary to determine how can the leaders enable and support the development of teachers' digital competence. The leadership model of competence development needs to be evaluated and developed where appropriate. Moreover, the leadership model should support TAKK's values and thus enable quick reacting to the changes in the operational environment.

The main research questions for this case study are:

- How does the leadership of an organization affect the development of teachers' digital competence?
- What does the management of TAKK have to do in order for the teachers' digital competence to develop?

Narrowing down the main questions, a sub-question is:

- What are the concrete steps that the leaders/managers of TAKK have to take in order for the organization to reach its goals?

This research was conducted using service design methods and document analysis. The research focused on three entities; a co-creative service design workshop for TAKK management, experiences and feedback from teachers involved in the development of individual learning paths according to the case project, and responses of a self-reflection survey for TAKK management and teachers.

For the reader to gain a better understanding on the researched case, I will introduce the case organization in more detail in Chapter 2. As mentioned earlier in this Chapter, the case TAKK in this thesis is researched and analyzed as a development project, which will be introduced in Chapter 5. At this point, it is important to acknowledge that in this case I am both the researcher but also the coordinator of the case project.

2   CASE ORGANIZATION TAKK

TAKK is a private foundation-based multisectoral vocational education organization operating mainly in the Pirkanmaa region in Finland. TAKK has offered vocational education since 1962 and has a license by the Finnish Ministry of Education and Culture to organize vocational examinations. TAKK's overall purpose is to maintain and increase the vocational competence of adult population in order to keep up with economic and technical development in the society, thus improving the citizens' chances of employment and continuous learning. TAKK's mission is to promote the success of its customers in a sustainable way by offering both education as well as development services, domestically and internationally. (TAKK presentation slideshow, 2019.)

As a private organization, TAKK is maintained by the Tampere Adult Education Foundation. The executive director of the foundation is TAKK's principle and the foundation board consists of members nominated by Tampere Chamber of Commerce, City of Tampere as well as the leading Finnish labor market organizations. The board acts as the governing body of the Tampere Adult Education Centre and the foundation is the official employer of TAKK's personnel. (TAKK presentation slideshow, 2019.) TAKK has currently approximately 220 members of personnel including trainers and administrative staff (TAKK organization chart, 2020). TAKK's trainers have strong work life experience and expertise and approximately 80% of the trainers are pedagogically qualified. Furthermore, approximately 80% of the trainers are also qualified specialists in competence-based qualifications. (TAKK presentation slideshow, 2019.)

FIGURE 1. The TAKK organization structure (TAKK presentation slideshow 2019.)

As shown in Figure 1, the TAKK organization consists of two educational sectors, Services and Technology (TAKK presentation slideshow, 2019). The educational sectors are further divided into vocational training field departments. The educational sectors are supported by TAKK's Business Services and TAKK's support services (TAKK organization chart, 2020.) The core operation of the Business Services is to support, implement, as well as develop the cooperation with companies and the working life (TAKK presentation slideshow, 2019).

TAKK's key function is to provide and organize vocational education. TAKK has annually up to 13 000 adult students and offers vocational basic qualifications, further vocational qualifications, specialist vocational qualifications as well as vocational further education. Currently the total amount of different qualifications TAKK offers is 80. As can be seen in Figure 2, the education TAKK provides is on upper secondary level according to the Finnish education system. In addition to the qualifications, TAKK also offers flexible and customized services to companies and organizations for developing their operations and competences. TAKK's Business Services' objective is to support companies and organizations for example in changing situations and recruiting. (TAKK presentation slideshow, 2019.)
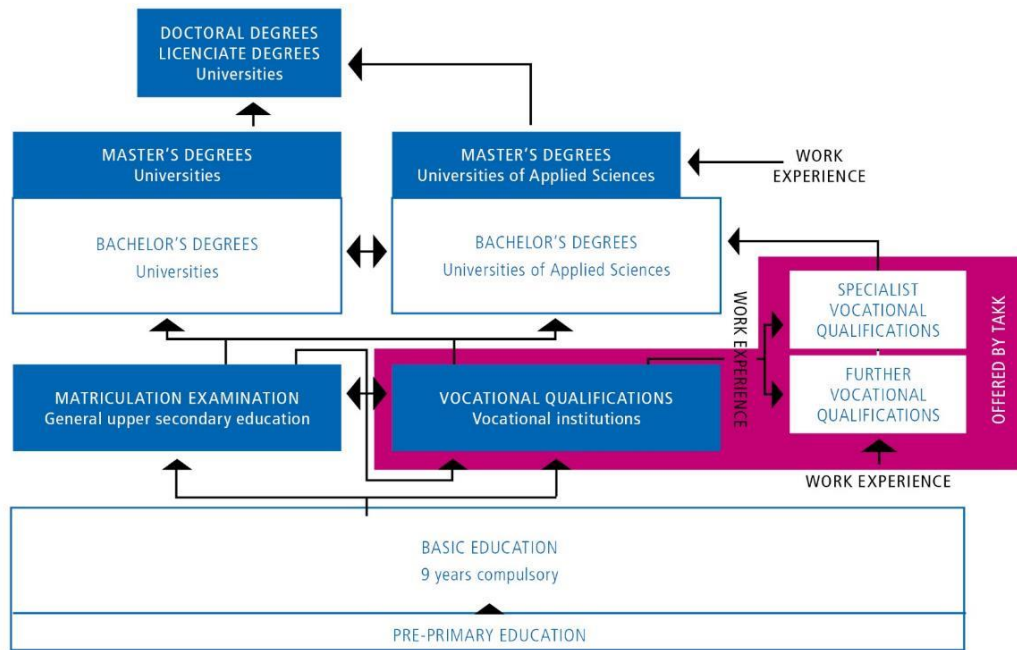
FIGURE 2. The Finnish education system (TAKK presentation slideshow, 2019).

TAKK's annual turnover is approximately 22 million euros. 96,1% of the annual turnover consists of training services. Educational structures are divided into three main categories: labor market training, self-motivated training and apprenticeship training. (TAKK presentation slideshow, 2019.)

TAKK's key principles in organizing vocational education are competence-based approach and customer-orientation with individual study paths. In practice, the competence-based approach emphasizes a learning-outcome-based approach and work-based learning. Individual study paths mean that each student has a personal competence development plan (PCDP), which is drawn up by a teacher and a student together. When drawing up the plan, the student's previously acquired competences are recognized and only the competences and skills the student is lacking are included in the competence development plan. In practice, recognition of prior learning means that the student's existing learning outcomes are assessed and validated, regardless of how and where they have acquired their competence.

Identification and recognition of prior learning is one of the most important competencies TAKK's trainers need to have, so that the competence development

plan of the student is done efficiently focusing on the competencies and skills still missing. Another important aspect when drawing up the student's PCDP is the formulation of learning activities. The learning activities may include, for instance, traditional classroom work/lessons, practical and/or simulated training at TAKK, work-based learning in an actual workplace as well as online learning. When designing the learning activities, the trainer needs to take into consideration the learning skills of the student in question. For example, in order to manage self-oriented online learning, the student should possess adequate digital skills. On the other hand, the trainer may also encourage the student to develop his/her digital skills at the beginning of the training program, in order to better manage the online studies. In practice this means that TAKK's trainers need to be able to evaluate students' digital skills and competences in relation to the level of the online learning activities in question.

The various educational structures, versatile range of qualifications and training programs together with the competence-based individual study paths require TAKK to continuously develop its services, learning environments as well as staff's competence. As TAKK's vision is to *"efficiently solve the competence needs of the working life and the student"* (TAKK presentation slideshow, 2019), TAKK needs to be flexible and agile as well as continuously develop its strategic operations and staff's competences. This, in turn, requires appropriate leadership. TAKK's organizational development is defined in its strategy, which will be introduced next.

2.1   TAKK's strategy

As stated above, TAKK's vision is to "*efficiently solve the competence needs of the working life and the student"*. This vision is accomplished by implementing TAKK's mission of creating competence for future work life. TAKK's values include being a reliable partner as well as a bold pioneer. As a bold pioneer TAKK inspires its customers and each other to develop and improve. Being a pioneer means to predict and innovate. Furthermore, it means to quickly react to the changes in the operational environment and if necessary, take controlled risks. (TAKK presentation slideshow, 2019.)

PICTURE 1. Illustration of TAKK's strategy (TAKK's strategy for 2019-2021, 2018.)

TAKK's strategy, illustrated in picture 1, is drawn up abiding by TAKK's vision and values for a three-year term at a time. It defines TAKK's strategic focus points, their objectives, measures, as well as measuring indicators. According to TAKK's strategy, TAKK's most important competitive advantage is the ability to react faster than its competition. In practice, this means that TAKK needs to enable more rapid responses to the changing competence needs in working life. TAKK's vision and values have been guiding the operations for years. The strategic focus points have regularly been updated to match the current trends and demands. The strategic operations are supervised and monitored by TAKK's directors and the Executive Committee. (TAKK's strategy for 2019-2021, 2018.)

TAKK's strategy includes six focus points from customer needs, products and services to internal operating models. As the focus of this thesis is leading the development of teachers' digital competence, I will now concentrate in more detail on the focus point *"Internal operating models and capabilities"*. The capabilities in this context include different competence areas, one of which is digital skills and competences. The objectives of this focus point are to make sure that the competence of TAKK's personnel is up to date, and that the competence development processes are efficient and actively lead. (TAKK's strategy for 2019-2021, 2018.)

2.2 Development of digital skills and competences

As explained before, the development of digital skills and competences as well as digital learning environments is based on TAKK's strategy. During the past years, TAKK has developed its digital capacity and invested in the development of staff's, as well as students', digital competences. In this process, various development projects, internal, national as well as international, have been utilized. In this chapter, I will introduce examples of how TAKK's projects have been used as development tools in this process. Furthermore, I will go over what development steps have already been taken related to digital competence development.

The purpose of project work has specially been to develop, test and map out functioning methods and activities (Ahvenjärvi, 2016a). TAKK's project work is based on agile experimenting according to Scrum and service design methods (TAKK process chart, 2019). As a flexible organization, this type of development enables TAKK to perform quick experimenting and make fast decisions based on results. TAKK personnel has been participating in project work, for example by cooperating in facilitated workshops related to competence development (Ahvenjärvi, 2016b). When developing together, the ability to interact, discuss and contemplate together are essential (Jalava & Virtanen, 1998). As cooperation according to service design methods have been used in TAKK rather well, it can be concluded that the method has become fairly known to TAKK's staff.

Although the development of digital competence has been part of TAKK's operations for years, the current development process based on agile experimenting and service design can be seen having begun with the European Social Fund project Puhti in 2015. In this regard, Puhti was used as a pilot project in TAKK's then renewed project activities. The project plan was implemented according to service design and Scrum methods; the project team executed quick experiments, evaluated them, made necessary changes and experimented again. (Ahvenjärvi, 2017.)

A concrete example of experiments in developing digital skills and competencies is the action-based facilitated workshop developed in Puhti. The concept includes different facilitated action points, where participants can together familiarize and experiment with digital tools and methods suitable for teaching and guidance. The purpose of this method was to introduce digital tools and methods, but more importantly, lower the threshold of trying something new. Based on feedback, this type of a method where participants are able to experiment in practice was considered useful and effective. (Oksanen, 2017.)

Since Puhti, the continuous professional development model and activities related to digital competence have been developed further in cooperation with different projects. As the action-based facilitated workshop model was perceived good, the model was utilized also in the following implementations. However, focusing more on specific competence areas created a need to develop the implementations further. Furthermore, although there were many experiments and implementations, the development of digital competence was no consistent throughout the organization. The experiments were conducted by projects and a systematic approach for the entire organization did not exist. As a member of these project teams I observed with my colleagues that the staff members participating in digital trainings and workshops were more or less the same people. The question of how to get the rest of the teachers involved arose. Hence, the development of teachers' digital competence seemed to require a systematic strategy with stronger leadership.

Based on the experiences of TAKK's project work, the next step is to further define which areas of digital competence are crucial for all TAKK's teachers. Next, the internal process of implementing the model needs to be clarified. Finally, the leadership model of competence development needs to be evaluated and developed where appropriate.

2.3   Leadership at TAKK

As introduced in Figure 1, the TAKK organization is led by the principle together with the directors of each three business sectors and the three directors of administrative sectors. The business sectors are further divided into vocational sectors, which are operated by educational managers. The executive board, including the directors, is responsible for organizational decisions, and the educational managers institute the decisions into practice.

Although the above described leadership model of TAKK appears a bit as the linear, sequential waterfall model (Benington, 1983), the process is not as straight-forward. The leadership model of TAKK is not unequivocal. The mid-level managers, as well as staff members, are often included in development processes, especially during planning phases. The decision-making is on the executive board, but the views of the staff members are taken into consideration. However, this is not consistent throughout the organization. In my experience, it often depends on the individual leaders and their attitudes as well as operating models.

TAKK has utilized projects as development tools in experimenting various models of digital competence development. TAKK leaders have encouraged and supported this process but planning and executing concrete development steps has mainly been the responsibility of the project teams or individuals. The development process has not included a systematic leadership strategy or approach.

3 DIGITAL COMPETENCE

The European Framework of Key Competences for Lifelong Learning states that digital competence is something all citizens should acquire. The framework describes digital competence as *"confident and critical use of digital technology"*. In this context, the use of digital technology includes knowledge, skills and attitudes. (European Commission, 2007.)

The European Framework for the Digital Competence of Educators includes a following definition of digital competence:

"Digital competence can be broadly defined as the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society."
(Redecker. 2017.)

Furthermore, continuous professional development (CPD) is defined as:

"…the means by which members of professions maintain, improve and broaden their knowledge and skills and develop the personal qualities required in their professional lives, usually through a range of short and long training programmes, some of which offer accreditation. This job-related continuing education and training refers to all organized, systematic education and training activities in which people take part in order to obtain knowledge and/or learn new skills for a current or a future job."
(Redecker, 2017.)

3.1 International perspective

Digitalization has rapidly changed the society and thus required us to develop new skills and competences. The OECD report on the Power of Digital Technologies and Skills (2016) states that education systems play an important role in

preparing individuals for the digital era by equipping them with the skills and competences they require in today's society. For this to succeed, the digital competence of educators must be developed. To support these processes, there are various researches available.

The Technology Acceptance Model (TAM) has been one of the leading theoretical models when examining which factors influence individuals' acceptance on using technology in education. The TAM-model focuses on behavioral aspects during technology adoption, which in this case study means developing digital competence. According to TAM, the behavioral aspects include *"perceived usefulness"* - whether the technology in question is considered to be useful or not, and *"perceived ease of use"* - whether using that technology is effortless or not. (Davis, 1986.) Further studies on TAM have concluded that regarding technology, in addition to enhancing individual's perceived usefulness and ease of use, increasing their sense of self-efficacy should also be focused on (Scherer, Siddiq & Tondeur, 2019).

Over the past years, the European Union has invested significantly in the research and guidelines related to digitalization. For example, Digital Education Action Plan (DEAP) is the European Commission's approach to support the use of technology and the development of digital competences in education. It focuses on helping member states in utilizing digital technologies in teaching and learning with 11 specified actions. One concrete instrument for this development is the SELFIE self-reflection tool, which provides a holistic and pedagogical approach for assessing the use of digital technologies in education. A benefit of SELFIE is the fact that it includes assessment tools for teachers, students as well as educational leaders, providing the educational organization a thorough overview of its digital capacity. Additionally, SELFIE provides information on what is working well in the organization and which areas require improvement, as well as helps the organization plan and prioritize the development steps. (European Commission, 2018.)

The SELFIE-tool is based on the European Framework for Digitally-Competent Educational Organisations (DigCompOrg). Like OECD (2016), DigCompOrg rec-

ognizes the importance of education in the development of digital skills and competencies in the society. Furthermore, these skills and competencies are crucial for innovation and competitiveness. DigCompOrg supports the educational organizations by providing a European-wide systematic approach for assessing and developing their digital capacity. (Kampylis, Punie & Devine, 2015.) Benefits of this type of a framework are that it provides common conceptual methodology throughout Europe, and that it promotes and encourages transparency, comparability as well as sharing of good practices. The development of educational organizations' digital capacity is taken further in the European Framework for the Digital Competence of Educators (DigCompEdu). In this case study, the DigCompEdu has been used as the main framework as it is the guiding reference also in the development project. I will therefore introduce it in more detail next.

3.1.1 European Framework for the Digital Competence of Educators

European Framework for the Digital Competence of Educators (DigCompEdu) is a scientific framework meant to support the development of digital competence of educators (Redecker, 2017). It goes into detail by providing educational organizations guidance on how to establish and develop their own digital competence models. The common framework enables consistent discussion and exchange of experiments as well as best practices between European nations.

DigCompEdu is a result of many years of research by the Joint Research Centre (JRC). JRC is the European Commission's science and knowledge service which focuses on research that constitutes support and advice for implementing EU policies. JRC's vast experience in research and innovation, together with its work on predicting emerging issues makes it a noteworthy resource for guidelines also for this case study. JRC is involved, for example, in the Horizon 2020 programme, a research and innovation initiative, which objective is to secure Europe's global competitiveness. (Joint Research Centre.)

DigCompEdu introduces twenty-two elementary competences (Figure 4) divided into six competence areas (Figure 3). The competences have been defined in order to help the educators assess and identify their development needs.
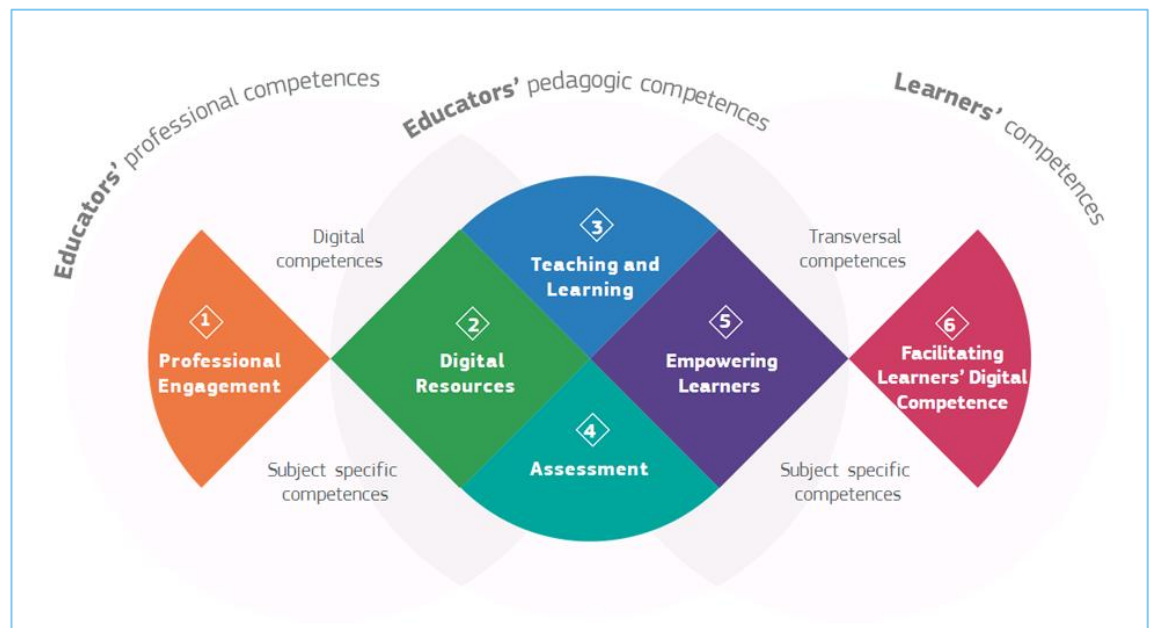
(Redecker, 2017.)

FIGURE 3. DigCompEdu areas and scope (Redecker. 2017.)

As can be seen in Figure 3, the competences are grouped into professional competences, pedagogic competences and learners' competences. This is helpful when developing an organizational strategy, as the educators can proceed in a logical continuum. According to my understanding, the development of digital competence of educators begins with professional engagement, which sets out the organizational frame. From thereon, the development continues to the more specific pedagogic competences of the teachers. Once these are in order, the next step would be to facilitate the development of learners' digital competence.
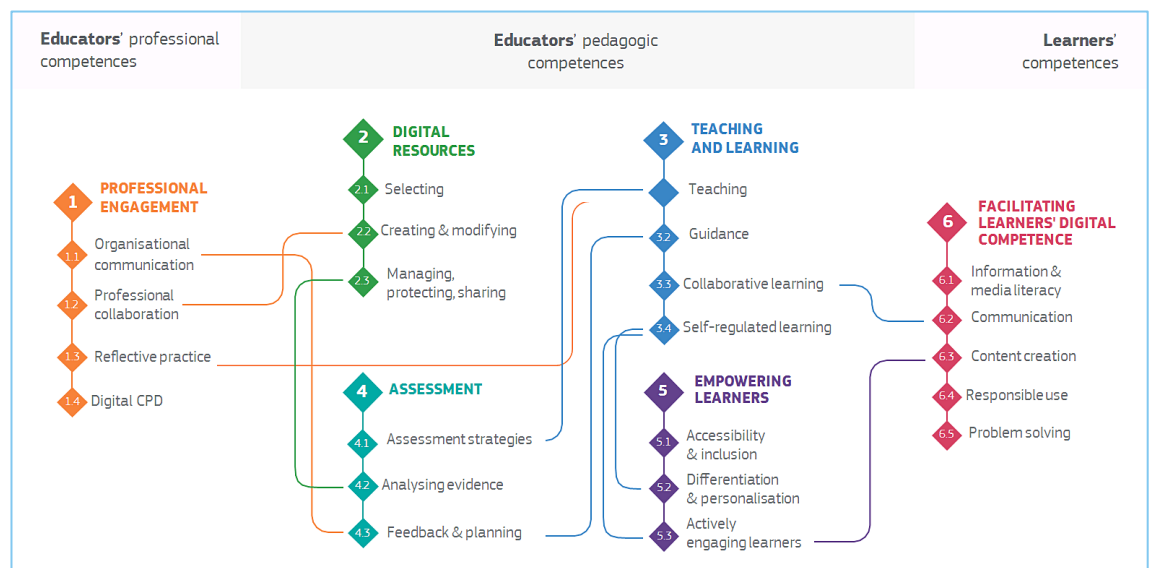
FIGURE 4. DigCompEdu competence areas and their connections (Redecker, 2017.)

The progression levels of digital competence are shown in Figure 5. The levels are modelled after the Common European Framework of Reference for Languages, which is already widely known and therefore makes it easier to interpret the results. (Redecker, 2017.)
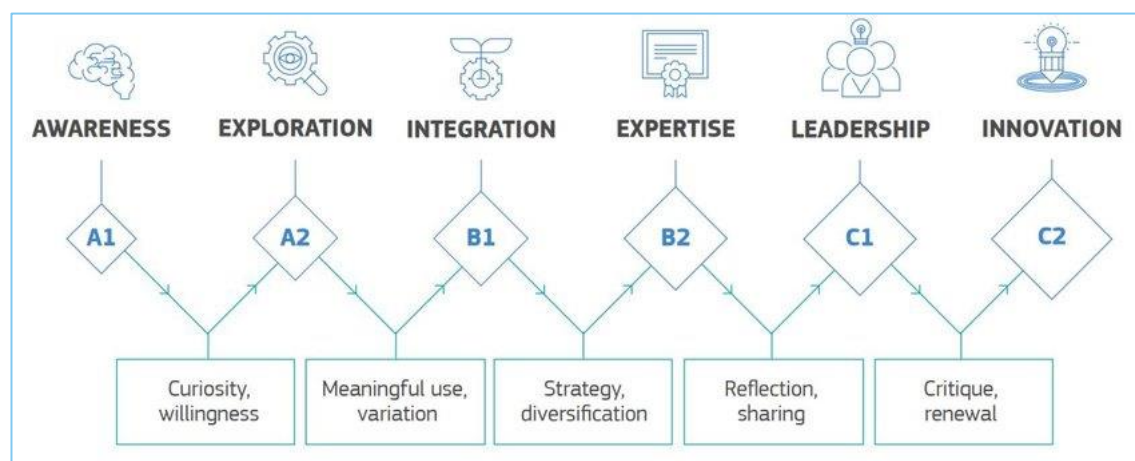

FIGURE 5. DigCompEdu progression levels (Redecker, 2017.)

In addition to the cumulative competence levels A1 to C2, the DigCompEdu progression model provides descriptive competence roles. According to Redecker (2017), the role descriptors are intended as motivational factors helping educators appreciate their competences. Furthermore, the descriptors encourage educators to look forward in taking the next steps according to their competence development plan. The purpose is not to have all staff members on the same level. Instead, the purpose is to evaluate your current competence level and develop your own competencies according to your own plan towards the next level. (Redecker, 2017).

3.2   National perspective

As this case study is about a Finnish vocational education organization, an overview of related national research is necessary. One of the most recent publications is an academic dissertation by Sanna Brauer (2019) about Digital Open Badge-Driven Learning - Competence-based Professional Development for Vocational Teachers. Although her research focuses on Open Badges as motivators

for continuous professional development, the overall theme is very interesting for my case study. Furthermore, Open Badges are also a current topic at TAKK; there has been discussions and plans to investigate the benefits of digital badges in competence development.

Koramo, Brauer & Jauhola (2018) published a report on digitalization in vocational education, which is one of the first extensive studies on the subject. The report evaluates the state of digitalization in the Finnish vocational education sector and includes views from teachers as well as students. It also provides an overview on how digitalization has affected teaching and learning. Most importantly, the report includes results and recommendations related to teachers' continuous competence development and is thus valuable background material also for this study.

A 2016 study (Ruhalahti & Kenttä) on the digitalization of vocational education and work life cooperation in Finland concludes that vocational teachers seem to possess basic digital competence. The study represents a sample of little over one tenth of the teaching and guidance personnel in Finnish vocational education at that time. This is a promising start, but as the report concludes, the digital competence of teachers should now be advanced into more specialized areas. Furthermore, digital competence should be more versatile and developed in conjunction with pedagogy, not as a separate subject. (Ruhalahti & Kenttä, 2017.)

From leadership point-of-view, I consider the doctoral thesis of Haukijärvi (2016) one of the most relevant documents in the field of digitalization in education. The doctoral thesis investigates approaches for leading digitalization as part of strategizing and provides a model and tools that can be utilized in other similar organizations. Although Haukijärvi's thesis concentrates on higher education, from leadership perspective the results can also benefit vocational education.

4   LEADING THE DEVELOPMENT OF COMPETENCE

Digitalization has entailed educational organizations to rethink and modify the way learning and teaching is organized and implemented. Acquiring the ability to utilize digital tools and methods in teaching and learning is a change process. Including digital tools and methods into teaching requires the teacher to modify the way the teaching is planned and executed. Furthermore, to be able to accomplish this the teacher needs to have adequate digital competence. In this case study, the change process is both organizational as well as individual. The overall goal is to improve the digital capacity of the entire organization by focusing on leadership, but obtaining the goal requires behavioural change also on an individual level.

From a leadership point-of-view this means that the leaders themselves must understand the need for change, communicate this need to their staff as well as engage and commit the entire organization into the change process. Furthermore, the leaders should discuss and acknowledge the possible challenges and obstacles that might stand in the way of the change process. Jalava and Virtanen (1998) describe organizations having an internal memory that includes, among other things, the organizational culture, its individuals and social factors, as well as existing processes and practices. The internal memory often shapes the development process during a change period. Therefore, the leader needs to be aware that past experiences and practices may be helpful and support the current change process, but on the hand, they may also disrupt or even prevent the success of the change process. (Jalava & Virtanen, 1998.)

There are many change management theories and practices that emphasize different aspects. When designing an organizational strategy for competence development, one suitable model is Kotter's 8-Stage Process for leading change (Kotter, 1996). In his book, Kotter describes 8 factors that should be taken into consideration when an organization is going through a change process. Furthermore, Kotter emphasizes the importance of leadership as a success factor of the process. (Kotter, 1996.) In his Harvard Business Review article (1995), Kotter argues that *"…major change is impossible unless the head of the organization is*

an active supporter". He continues even further by explaining that forming a powerful enough guiding coalition for the change requires involvement of most of the organization's top leaders. Another condition, among others, for the change process to succeed is communicating the vision clearly; members of the organization need to understand the objective and what is the plan for reaching it. (Kotter, 1995.)

Communication is also accentuated by Lewin's (1947) three stages of change. Where Kotter's model includes eight stages, Lewin has narrowed it down to three: unfreeze, change and refreeze. The first part is about creating motivation for the change, the second part includes communication and empowering the people involved in the change process, and the third part is about rooting the change into the organization. According to Lewin (1947), communication is crucial for the change process to succeed. With communication the motives for the change, as well as the objectives, are made as clear as possible for all the involved parties.

When discussing leadership theories and practices that emphasize the leaders themselves showing example, the five practices introduced by Kouzes & Posner (2012) seem useful and effective. Their theory focuses on leadership skills and traits that can be trained or developed, and it supplements the change-management approaches of Kotter and Lewin well. For example, Lewin's (1947) stage of creating motivation is supported by the practice of *"Inspire a Shared Vision"* by Kouzes & Posner (2012). This practice emphasizes creating and clearly communicating the development objectives so that they are meaningful to the people involved and have value throughout the organization. However, if the objectives are designed and determined only by the leaders, committing staff members may be challenging. Here, the practice *"Enable Others to Act"* appears useful, as it guides the leaders actively engaging the involved parties into working together towards the common goal. Furthermore, this practice emphasizes trust; leaders should create an environment safe for experimentation and change. (Kouzes & Posner, 2012.)

In addition to change management theories, coaching theories are also applicable when discussing the leadership of competence development. Coaching is of-

ten understood as helping the coached achieve set goals and reaching their potential. The coach does not provide answers, but instead helps the coached come up with the answers himself and supports and motivates along the way. The coach manages the process.

The GROW-model, developed in the 1980's, is a good example of coaching methods. Whitmore (2009) as well as Alexander (2010), both involved in the development of the model, describe the model as a simple and effective model for leaders to use in different coaching situations. The GROW-model stands for goal, reality, options, and wrap-up / way forward. The purpose of the model is to provide structure for the cyclical coaching process while keeping it flowing and natural. According to the GROW model you first set the long-term goal but may also discuss the more specific objectives. Next you check the current situation, which is followed by contemplating possible options for moving forward towards the goal. The last phase of the GROW-model is about clarifying the plan and supporting and encouraging the coached to move on according to planned concrete steps. (Alexander, 2010.) From a leadership point-of-view, the most important aspect during a GROW-process is not to tell the coached person what to do, but to guide and ask questions empowering the coached person to find the answers themselves.

Along with the GROW-model, Whitmore (2009) also emphasizes awareness and responsibility. Figure 6 demonstrates the benefits of coaching in performance improvement. Successful coaching leads to the coached person's ability to determine, for example, what is relevant, what is expected and how can it be achieved. Furthermore, by asking questions the coach can guide the coached person to take responsibility and make personal choices. (Whitmore, 2009.) It is often the case that when we take responsibility ourselves, we are more committed and thus perform better. One of the nuances of coaching appears to be that by asking open questions it is possible to steer people's thoughts and behaviour in a certain way without them realizing they have been guided to that direction.

MANAGEMENT BY COACHING
generates

AWARENESS
Quality and quantity
of input

RESPONSIBILITY
Personal choice
and control

Q&Q of   Recall   Interest   Uniqueness Self-esteem Ownership

Enjoyment   Potential

Learning

Confidence

Performance

Self-motivation

Higher productivity
Improved communication
Better working relationships
Quality of life in the workplace
Greater recognition
More customer care

FIGURE 6. Benefits of management by coaching. (Whitmore. 2009.)

Whitmore (2009) also emphasizes the self-belief of the coached person. Having faith in yourself and your ability to reach the set goal is a crucial factor in competence development. It is the responsibility of the leaders to make sure that the conditions for competence development are favorable and encourage their staff members to proceed further. Furthermore, providing positive feedback supports the building of self-belief. This is also supported by Kouzes & Posner's (2012) practice *"Encourage the Heart"*, which focuses on acknowledging employee success and contribution. Interestingly, according to Kouzes & Posner (2012), this is the most exceptional of their practices.

5 CASE TAKK: DIGITALIZED LEARNING PATH FOR EDUCATIONAL OR-GANIZATIONS

As explained, this thesis is a case study concentrating on the Erasmus+ development project *Digitalized Learning Path for Educational Organizations*. This thesis studies the development steps, experiences and results of the project objectives 1 and 2 from leadership perspective, with the aim to find out how does leadership effect the development of teachers' digital competence.

The objectives of the project are:

1. organizational development of digital capacity (organization's learning path)
2. personal professional development of digital skills and competences (teachers' learning path)
3. cooperation development with outside stakeholders (e.g. workplace instructors)

In the fall of 2017 TAKK took part in the piloting of SELFIE tool, which was the instigator for the current development process. With SELFIE, TAKK had a tool to start the analysis on the current state of its digital capacity. While participating in the SELFIE pilot, TAKK had an opportunity to familiarize with the DigCompEdu framework as well as take part in a workshop on the SELFIE development organized by the Joint Research Centre (JRC). The development process continued and as partner organizations in Europe had similar interests, a project application on the subject was drawn.

Related to project objective 1, an interesting and rather unusual aspect is that the project team includes leaders of the partner organizations. This was decided in order to commit and engage the organization leaders in the development of organizational strategies. At the time, it was considered that for the project to be successful and that the digital strategies would actually be integrated into the organizations' operations, the involvement of top management should be included in the development process.

The project partners agreed to use the DigCompEdu as a guiding framework, as it is suitable for all educational organizations in Europe. Furthermore, DigCompEdu suits TAKK well as its approach is similar to TAKK's learning approach introduced in Chapter 2. TAKK's learning approach is competence-based focusing on outcomes, instead in inputs.

The project objective 2, teachers' individual learning paths, also follows the DigCompEdu -framework. In order to correspond the leadership practices to the actual CPD-activities for teachers, it is essential to gain an understanding of the proposed CPD-model. For this, it is important to learn how teachers themselves view the proposed model, as well as analyze their experiences and perceptions on the implementation of these activities in practice.

The basic idea of DigCompEdu is to evaluate the current competence level and proceed further towards the next level according to an individual plan (Redecker. 2017.). As TAKK teachers are already familiar with this type of approach, a corresponding framework for the development of their own competences seems justified and appropriate. The individual path consists of elements that are essential to the specific case, obviously also including the organizational objectives.

The project partners agreed to use Check-In Tool for evaluating teachers' current competence levels. Check-In Tool is a self-reflection tool based on the DigCompEdu -framework. The tool includes 22 questions related to the use of digital technologies in teaching and learning. The feedback summary provides information on the respondent's personal strengths as well as useful tips for further development. The results are personal and provide a basis for the designing of one's individual learning path. (DigCompEdu Check-In. n.d.).

5.1 Methodology

This thesis is a qualitative case study, which uses service design and document analysis as the main research methods. As Eskola & Suoranta (2014) describe, a qualitative research is possible to begin from a clean slate with no hypothesis,

where the theory is built from empirical observations and conclusions. The structure of this thesis is narrative, as the case study proceeds logically from descriptions of previous development work to recommendations for further steps (Eskola & Suoranta, 2014). Narrative structure can help clarify both the research and the development process.

According to Kananen (2012) and Eskola & Suoranta (2014), the most important methods of data collection in a qualitative research are observations, interviews and analysis of various documents. This is supported by Reason, Løvlie and Brand (2016), who state that qualitative research enables bringing up aspects, for example, of human behaviour. Human behaviour in this case is a response of the teachers to the applied leadership method and in this study, it is essential to investigate the effects of leadership activities to the behaviour of teachers.

Participating as a researcher in the research activities is typical for qualitative research (Eskola & Suoranta, 2014). In this research, along with document analysis, I have used unstructured participant observation in an open manner with the objective to gain insights into the impacts of leadership on the development of teachers' digital competence. According to Eskola and Suoranta (2014), participant observation means collecting research material by taking part in the activities of the research subjects. Participant observation is also used in service design as an autoethnography method, which will be introduced later (Stickdorn, Hormess, Lawrence & Schneider, 2018.).

In this case, observations include the researcher's findings and conclusions from various discussions with TAKK teachers and leaders, including their perceptions but also tacit knowledge, which is often difficult to collect. Furthermore, conclusions of research data acquired through service design methods, such as having TAKK teachers participate in the development activities, will be analysed.

5.1.1 Service design

As described in Chapter 2, TAKK has utilized projects as development tools using service design methods. This has allowed various agile experiments in the process of developing teachers' digital competence. According to Ojasalo, Moilanen and Ritalahti (2014), service design means applying the processes and methods of the design into the development of the service. Ojasalo et al. (2014) also describe a concept of a *service path*. A service path concept looks at the service experience from the beginning to the end considering the activities and operations as well as needs and demands from the customer's point of view. The overall purpose is to provide the user as useful and desirable service experiences as possible.

Service design includes data collection methods such as desk research, self-ethnographic approaches, participant and non-participant approaches, as well as co-creative workshops (This is service design methods, 2019.). For this case study, an especially interesting research approach is the autoethnography method, more precisely self-ethnography. The purpose of self-ethnography in service design is to observe the experiences in real life, in this case as an employee of the case organization. This approach helps the researcher observe and understand the experiences of the participants. Additionally, it is useful when conducting interviews, as the interviewees are already aware of the focus of the research. (Stickdorn et al. 2018.). Service design methods suit qualitative research well, as they include elements of naturalistic and interpretive approach. In practice, this means that the researcher investigates relevant aspects in their natural settings, which in this case are activities of the development project. The researcher's role is to try to analyze and interpret these activities and the participants' views and meaning on them. (Denzin & Lincoln, 2000).

As the purpose of this research is to study what do the leaders of TAKK have to do in order for the teachers' digital competence to develop, the purpose of service design as providing useful and desirable service experiences seems appropriate from research objective's perspective. Furthermore, service design is a suitable research method in this type of a case, where the purpose is to analyse and utilize previous experiments in order to develop a systematic approach for enabling and supporting the development of teachers' digital competence. Service design as a research method enables employing user-centric experiences in the process of

analysing the various methods used in the development process (Interaction Design Foundation. n.d.). The effects of leadership on the development of a teacher's digital competence are subjective. On the other hand, from the organization's perspective the development of teachers' competence should be cost-effective and useful, but also based on the needs of the training field as well as the individual in question.

5.1.2 Document and content analysis

In this research I have used document analysis to support the service design process. Bowen (2009), describes document analysis as *"…a systematic procedure for reviewing or evaluating documents, both printed and electronic material."*. Ojasalo et al. (2014) explain that the objective of document analysis is to analyse the contents in order to summarize the relevant information, thus providing added information or added value.

The documents that are being examined may include, among others, organizational reports, minutes of meetings, charts, application forms and various background documents. Document analysis as a research method is thus appropriate for qualitative case studies, as it can provide abundant information on the case subjects. (Bowen, 2009). When analysing the data collected from various documents, it is often grouped according to themes. This helps to deliver the results of the analysis in an understandable form so that they can be interpreted, and conclusions can be drawn. (Tuomi & Sarajärvi, 2018).

One challenge of document analysis is the level of confidentiality of the documents in question. The researcher needs to have access to all relevant documents. In this study, as the researcher is an employee of the case organization as well as part of the case project, she has access to the documents relevant to this research. However, many of the relevant documents are TAKK's internal documents and not available outside the organization. This confidentiality factor is abided by and the documents in this category are listed separately in the references chapter.

5.2   Data collection

The document analysis in this case focuses first on existing documents, the results of the SELFIE-survey of 2017. The online survey was used to collect information on the current state of TAKK's digital capacity including the views of both teachers, as well as leaders. For this research, I went through the existing survey results and chose the appropriate parts relevant to this study for further analysis.

As explained earlier in this Chapter, service design means applying the processes and methods of the design into the development of the service (Ojasalo et al, 2014). In this case, the services refer to both the possibility to develop one's digital competence, as well as the leadership of that competence development.

The second part of data collection consisted of arranging a co-creative workshop for TAKK management. Service design methods were used to participate TAKK leaders in analysing current leadership practices of digital competence development, as well as discuss the needs and focus points of further development aspects. In this case, research data was collected by documenting the results of the two group works as well as observer's notes during the workshop.

Service design methods were also used in collecting research data on the development of teachers' individual learning paths. In practice, participants in the case project were instructed to design and test their own individual CPD-paths. Data from this research was collected in monthly regular meeting with the participants and documented in my notes.

5.2.1   SELFIE-survey

Document analysis includes investigating the current state of TAKK's digital capacity by analyzing and interpreting the relevant results of the 2017 SELFIE-survey. Although the SELFIE-report is a confidential internal report, as a researcher I have been granted permission to introduce the parts of the report relevant to this thesis.

At the time of the SELFIE-survey the TAKK management included 31 people, of which 12 took part in the survey. From TAKK's 118 teachers, 84 responses were received. (SELFIE report, 2017). During the data collection phase, I went through all the survey questions and chose to focus on the specific areas which provide data relevant to the objectives of this thesis.

The relevant survey results chosen for this study are presented here as arithmetic means of the respondents' answers on a scale of 1-5. 1 meaning strongly disagree, 5 meaning strongly agree. In the survey results, *SL* means the organization management and *T* means teachers. As both target groups had their own questionnaires, the statements in the survey were written accordingly.

The responses to the first statements of the SELFIE-survey which will be analysed in this study are shown in Figure 7. The statements were as follows:

SL: We are developing a digital strategy in our organization.
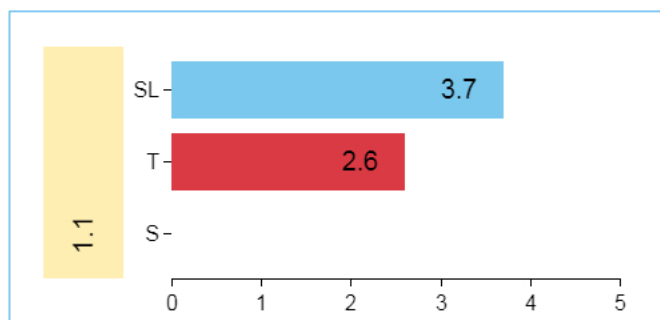*T: There is a specific digital strategy in our organization.*

FIGURE 7: SELFIE-responses related to organization's digital strategy. (SELFIE report, 2017).

The responses of the second statements of the SELFIE-survey are shown in Figure 8. The statements were as follows:

SL: In our organization teachers take part in the development of our digital strategy.
T: In our organization I participate in the development of our digital strategy.
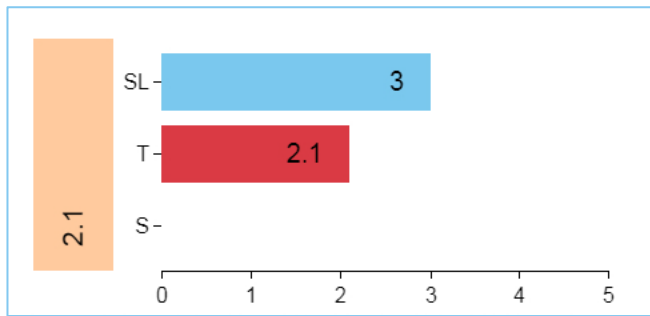
FIGURE 8: SELFIE-responses related to participation in the development of organization's digital strategy. (SELFIE report, 2017).

The third statement of the SELFIE-survey that will be analysed in this study was targeted only for the management, not for the teachers. The responses are shown in Figure 9 and the statement was as follows:

SL: As part of our digital strategy, we offer and execute ourselves for our teachers possibilities for CPD-activities related to digital technology in education.
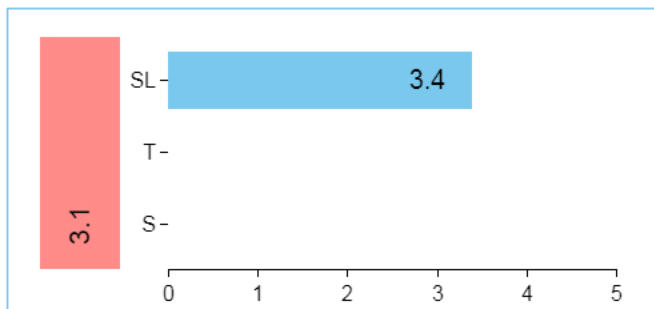

FIGURE 9: SELFIE-responses related to teachers' possibilities for CPD-activities. (SELFIE report, 2017).

The responses to the fourth statements of the SELFIE-survey are shown in Figure 10. The statements were as follows:

SL: According to our digital strategy, we share our experiences on the use of digital technology within our organization.
T: In our organization, I share my experiences on the use of digital technology in education with my colleagues.
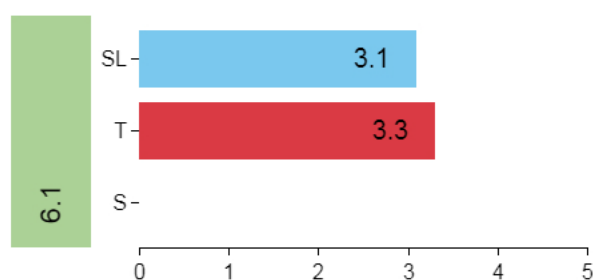
FIGURE 10: SELFIE-responses related to sharing of experiences on the use of digital technology. (SELFIE report, 2017).

Finally, the survey included statements related to both leaders' and teachers' views on whether teachers have enough time to investigate digital technology. In the survey report, the responses to these statements were presented as calculated percentages of the responses. Below are the statements and the percentages:

SL: Do teachers have time to investigate how digital technology can be better used in learning?

- 42% says we operate like this, but it is not systematic.
- 25% says this is in our plans, but we do not yet operate like this.
- 25% says we operate like this already systematically.
- 8% says we already doing this with great quality.

T: I have enough time to investigate how digital technology can be used in teaching and learning.

- 36% completely disagree.
- 26% disagree.
- 19% does not agree nor disagree.
- 12% agrees.
- 7% completely agree.

5.2.2 Workshop for TAKK management

For the purpose of understanding the views of TAKK's leaders about leading the development of teachers' digital competence, I arranged a co-creative workshop

(This is service design methods, 2019.) for the TAKK management in June 2019. I chose the service design method co-creative workshop because it enables involving all the relevant people in the design process. In the end, the managers will be the ones executing the workshop results in practice, so having them design the process themselves increases their commitment. Furthermore, as the development of teachers' digital competence had been one of TAKK's focus point already for some time, I was able to assume that the subject was already familiar to the participants. (Stickdorn et al, 2018.).

The objective of the workshop was to have the TAKK management discuss digital competence development and its benefits for the organization, as well as discuss and plan concrete steps to support and enable the development of teachers' digital competence development.

The tasks of the management in the workshop were to produce answers for the following two question:

1. *What are the benefits of developing teachers' digital competence?*
2. *How can the leaders/managers of TAKK enable the development of teachers' digital competence?*

These questions were formulated based on the initial research questions of this thesis. The purpose of the first question is to create a common understanding on the importance of digital competence development. As Lewin's (1947) three stages of change indicate, it is important to first create motivation for the desired change.

The second question seeks answers to the research question *"What does the management of TAKK have to do in order for the teachers' digital competence to develop?"*. Organizational change requires the involvement of the management by actively supporting and leading the process as a united coalition (Kotter, 1995).

11 out of TAKK's 15 directors and educational managers participated in the workshop. I had instructed the participants to familiarize with the DigCompEdu-framework, which I also introduced at the beginning of the workshop. As the workshop was part of the Digitalized Learning Path -project activities, the project objectives were presented briefly.

After the introductions, the participants were divided into three groups. During the first part of the workshop, the three groups discussed question number one for fifteen minutes. After the group discussions, everyone gathered to present their conclusions for the entire group. The presentations were followed by a ten-minute joint discussion session. As a researcher, I documented the conclusions of the group works as well as the discussion for analysis purposes.

The second part of the workshop concentrated on question number two. The same three groups were used, and they were instructed to list 3-5 concrete steps as an answer to the question. This time, the groups were given 45 minutes for the task.

At the end of the workshop, the groups again presented their results, this time in a digital format. Finally, the results were combined in a 30-minute group interview, where all the participants were able to express their opinions and articulate the most important aspects. Again, as a researcher I also documented the concluding group interview.

Based on the results of the group works and the group interview I was able to conduct content analysis. As indicated earlier, I was also personally present at the workshop as the project coordinator and facilitator of the service design process. As a participating observer (Kananen, 2012), in addition to the results of the group works, I was able to take down my own notes on the behavior of the participants as well as on the general atmosphere of the session.

5.2.3 Teachers' individual learning paths

I chose the service design concept *service path* (Ojasalo et al, 2014) as a method for collecting data on the development of teachers' individual learning paths. This is because in the Digitalized Learning Path -project, it was the task for the participating teachers to start designing and experimenting with the creation of their individual CPD-paths. Furthermore, this method provides an overall picture, as the service path concept covers the service experience from start to end including the activities as well as needs from the customer's point of view. The customer in this case is TAKK's teacher and the service is the possibility to develop one's digital competence.

Another reason for choosing service design as a research method is that, as explained earlier, it has been used in TAKK's development projects already many times. As the staff is familiar with the concept, they are thus rather likely to provide abundant feedback. When one knows the method used, the using of the method is all the more efficient. A challenge of service design can be that the participants are unable or unwilling to participate. (Stickdorn et al, 2018.). Therefore, as the concept is already familiar through prior experiences, it can be assumed that it enhances the participation also in this research.

The data collection included regular monthly project team meetings during 2019 and winter 2020, in which the two participating teachers reported and analysed their progress and results through group discussions. Their oral reports consisted of feedback on their experiences on the design and experimentation process of their individual CPD -learning paths. As the coordinator of the project, I participated in these meetings according to self-ethnography approach (Stickdorn et al, 2018). I observed and documented in my notes the experiences of the teachers in order to gain an understanding on the development work as well as on their views on how the process should be led.

In this context it is important to acknowledge the possible "observer effect" (This is service design methods, 2019). As the coordinator of the project and a participant in the development work, it is possible that my presence may have an influence on the behaviour of the project workers.

5.3 Data analysis

In this research I used content analysis. According to Tuomi & Sarajärvi (2018), content analysis can be done based on theory or research material. As the results of this research consist of written documents as well as researcher's written notes and observations, and there is no hypothesis to test, I chose to use analysis based on research material. An analysis based on material is inductive (Tuomi & Sarajärvi, 2018). An inductive approach means proceeding from singular observations to more general arguments (Eskola & Suoranta, 2014). This, in the end, produces summarized knowledge, or additional information, which is the purpose of content analysis (Ojasalo et al, 2014).

I started the data analysis by concentrating on the relevant material collected from each of the three data collection phases of my research: the SELFIE-survey, the workshop for TAKK management and the development process of teachers' individual learning paths. In this process, the available material for the actual analysis was selected according to the research questions. Tuomi & Sarajärvi (2018) emphasize the importance of narrowing down the material into an entity that is relevant specifically to the research questions.

When analyzing the responses of the SELFIE-survey, I focused on those questions that matched the leadership point-of-view of this thesis. As the survey responses were presented on a scale of 1-5 where 3 was *"not agree or disagree"*, I had to consider the possibility that the respondent may not know about the issue, or perhaps consider it irrelevant. During the analysis I compared the responses of management to those of teachers in order to detect possible similarities and differences. I also concentrated on analyzing the meaning of the survey responses compared to the practical operations of TAKK. Finally, the material from the teachers' learning path development and the managers' workshop was compared with the relevant results of the SELFIE survey.

While analyzing the material related to the teachers' individual learning paths and the workshop for managers, I went through my notes of the project team meetings and the results of the managers' group works several times. During the data col-

lection process, I was able to detect reoccurring issues and specific themes began to take shape. After grouping the material according to the specific themes, the analysis could concentrate on the re-occurring themes, which will be discussed in more detail later on in this Chapter. However, the level of emphasis the put on certain aspects was also considered and analyzed.

I continued the analysis by going through the material again and focusing only on the aspects related to these themes. In addition, I compared the findings to the research questions and deducted all the material that was not directly relevant. This way I was able to conceptualize the material as answers to the research questions. (Tuomi & Sarajärvi, 2018).

The analysis part is the most difficult part of qualitative research (Eskola & Suoranta, 2014). An inductive material analysis is sometimes considered random and intuitive as it based on analyzing and describing the researcher's observations and interpretations. Although as a researcher I was trying to be as objective as possible, it should also be acknowledged that the concepts and methods used were chosen by me and may thus influence the results. (Tuomi & Sarajärvi, 2018). Furthermore, as a project manager of this case project I must acknowledge the possibility that my behavior may have been guiding the service design process towards a certain direction. At this point I should mention that as a member of the case project and by my role at TAKK, I am well acquainted with the research material and have been able to spend a lot of time on analyzing the research material.

5.4   Analysis results

5.4.1   Results of SELFIE-survey analysis

The responses of the SELFIE-survey indicate that the views of TAKK's management and teachers differ to some extent. On the other hand, there are also some areas that appear to be congruous.

The responses indicate that majority of TAKK's teachers do not know whether there is a digital strategy or doubt that there is one. These findings are supported by responses related to participation in the development of organization's digital strategy. All the responded teachers consider not being involved enough in the development of digital strategy.

The responses of the organization management reveal that also not all managers are fully aware that TAKK is developing a digital strategy, although a majority appears to be. Furthermore, the responses indicate that the management is somewhat unaware of the level of teachers' involvement in the development process.

An interesting observation is that according to SELFIE-responses, not all TAKK managers/leaders seem to know that TAKK offers its teachers CPD-activities on digital technology. However, in this case it should be noted, that the SELFIE-question here refers to the CPD-activities as *"part of our digital strategy"*. Thus, this observation should be viewed bearing in mind the previously introduced conclusion that not all managers are fully aware that TAKK is developing a digital strategy. There is a possibility that the respondents actually know about the offered CPD-activities but are hesitant whether they are part of the digital strategy or not.

It can also be seen from the responses that teachers share their experiences on the use of digital technology on some level, but only slightly. The view of the management on this matter is almost on the same level.

Furthermore, majority (62%) of the teachers participated in the survey consider not having enough time to investigate how digital technology can be used in teaching and learning, whereas only 19% agree having enough time. In this question, the views of the management appear more positive. Only 25% of the management feel that teachers do not yet operate like this.

5.4.2 Results of the workshop for TAKK managers

From the material collected during the workshop for TAKK management I was able to conclude the following main themes for the two questions:

The benefits of developing teachers' digital competence are:

   a. *Improvement of TAKK's repute, quality and reliability*
   b. *Improvement of economic efficiency*
   c. *Development of new products and services*

The leaders/managers of TAKK can enable the development of teachers' digital competence by:

   a. *having an adequate understanding on teachers' competence levels, development needs and available CPD-activities*
   b. *implementing enabling and supporting activities*
   c. *improving communication (incl. own behaviour)*

During the workshop, TAKK management agreed that teachers' digital competence affects the quality of teaching and thus the quality of learning. It was discussed that as adult education includes more and more distance and online learning, the level of teachers' digital competence correlates directly to the quality and reliability of teaching. Overall, this reflects on TAKK's reputation as a desired and competent place of learning.

Economic efficiency was emphasized a lot during the workshop. Improving the use of digital tools and methods was considered beneficial in terms of time and resources; utilizing digital tools and methods would allow TAKK to make its processes more efficient. As for CPD-activities, the management agreed that general trainings alone for everyone was not cost-efficient. Specific competence development needs vary a lot within the organizations and the various educational fields sometimes require different skills and competences. It was agreed that there should be general organizational basic criteria for required competences for all teachers, but this should be supplemented by individual learning paths.

This way the CPD-activities could be efficiently targeted to match the specific needs.

The management also discussed improved digital competence as means to enhance the design and development new products and services. It was concluded that technological innovations could be better utilized and further adjusted to educational purposes, but this requires knowledge and adequate skills and competences. Not to mention time.

There was a lot of discussion on how the management can enable the development of teachers' digital competence. It was agreed that teachers' competence levels vary and that the goal should not be to have everyone on the same level, but to focus on individual learning objectives based on the general requirements of the organization. The DigCompEdu and its competence levels was agreed to be a suitable framework for this. The management then discussed the need for defining TAKK's minimum competence levels. As a concrete result, it was agreed that the basics of Microsoft Office 365 would be made mandatory for the entire staff, as Office 365 is one of TAKK's main digital environments and used by both staff and students.

When discussing the theme of implementing enabling and supporting activities, the management brought up time as one of the main issues. Allowing the teachers time for executing CPD-activities was considered highly important, but also problematic in practice. The managers discussed about resources being tight in general but agreed that developing one's competences would not happen without investing the time for it. As a concrete step, it was agreed that during regular yearly development discussions with their staff members, the managers will discuss their teachers' competence development needs and together they will design an individual CPD-plan as well as discuss its implementation.

Finally, the management discussed the role of communication in enabling the development of competence. It was discussed that communicating the need and importance for digital competence development is essential in motivating and encouraging teachers. The management agreed that their own attitude and behaviour often reflects on the teachers. Thus, by showing commitment and example,

the management can promote an organizational culture where investing in CPD is unforced and encouraged. A concrete step here is that the management participates in digital trainings with the teachers and communicates examples of their own digital competence development within the organization. Furthermore, the management agreed that peer support and cooperation is essential for efficient competence development. They concluded that enabling possibilities for sharing knowledge and experiences should be promoted within the organizations.

5.4.3 Teachers' individual learning path development

From the notes of the project meetings with the two participating teachers, I was able to summarize the following reoccurring main themes related to the development of teachers' individual learning paths:

- The use of CheckIn -tool was considered useful and purposeful
- Peer support and cooperation were considered essential
- An individual path was considered more effective than general pre-determined training sessions
- Lack of knowledge on available digital tools and methods suitable for educational purposes
- Lack of time
- Inadequate support from managers

CheckIn-tool was considered suitable, as it provided an overall picture of the teacher's current competence level as well as personalized guidelines for next steps. Both participating teachers considered an individual plan motivating and purposeful as they were able to concentrate on the specific competence areas important to them. Furthermore, the guidelines provided by the tool offered tips and recommendations that encouraged the teachers to proceed with small steps at a time, so that the objectives seemed realistic and achievable. When the development of digital competence is based on realistic individual needs, according to feedback from TAKK teachers, the threshold of trying something new is low.

Prior to this development work, both participating teachers had participated in various digital trainings arranged at TAKK. Both teachers concluded that although the general trainings were also useful, they did not always meet the specific needs of the teachers. According to the teachers' feedback, general trainings work well as introductions to certain themes, but after that continuing according to an individual plan is more effective.

Peer support and cooperation was utilized during the development process. The participating teachers discussed and compared their development steps regularly and the project manager arranged regular team meetings, where the development steps were discussed and evaluated together. The teachers also explained that during the development process they discussed their objectives, activities and experiences with other colleagues in TAKK and received useful feedback, comments and suggestions. Peer support in general was considered important and efficient for the development process.

According to the teachers, lack of knowledge on available digital tools and methods was re-occurring and emphasized at the beginning of the development process, but not so much towards the end. The participating teachers explained that this was an important factor when beginning to design their individual learning paths, but as the development work progressed their ability to find and select suitable relevant information increased. This was due to cooperation, such as various discussions with colleagues, as well as spending time on finding information themselves and learning to evaluate which information was suitable and relevant.

Both teachers emphasized the importance of having enough time to concentrate on the development work and on the activities on their learning paths. Here it is important to explain that as part of the development project, the teachers in this case had more time than usually to spend on their learning activities. However, the lack of time was still an issue. Despite the project work, both teachers have normal teaching responsibilities and finding time for development work and CPD-activities was considered a challenge. Although the project manager had allocated them time for project activities, acute situations and prioritized work tasks from their own managers sometimes overran the planned project work.

Lack of time was often brought up together with inadequate support from managers. In this context, the teachers explained that inadequate support included the managers' view on which areas of their work was prioritized. Both teachers agreed that teaching duties always preceded the CPD-activities, as teaching is their main work task. They continued that this is understandable, but if the managers portray CPD-activities as less important and additional, it has a negative effect on the teachers' motivation and enthusiasm for investing in their competence development.

6   RESEARCH RESULTS

As this study included three cases of data collection, the SELFIE-survey, the workshop for TAKK management and the development process of teachers' individual learning paths, the results were presented above according to each case. However, in order to gain a more clear and coherent understanding of the results a summary is required. I have here compared the relevant results of the SELFIE survey analysis with the results from the teachers' learning path development and the managers' workshop, and compiled the results of the entire research as answers to the original research questions.

How does the leadership of an organization effect the development of teachers' digital competence?

According to the results of this research, leadership influences teachers' level of motivation and commitment to the development of their digital competence. By setting clear guidelines and encouraging teachers forward on their CPD-paths, leadership can promote the digital capacity of the organization. Furthermore, leadership practices play an important role on the success of implementing continuous professional development activities.

Leaders' communication can reduce change resistance and enhance the development, as meaning and objectives become clear to everyone. Moreover, understanding the benefits on both organizational as well as individual level commits the teachers into investing in their competence development. Leaders' own attitude and behavior reflect on teachers and can thus either support or hinder teachers' motivation for personal competence development.

What does the management of TAKK have to do in order for the teachers' digital competence to develop?

Based on the results of this case study, I have concluded the following concrete steps that will help educational leaders design their strategies and action plans for the development of teachers' digital competence.

Create / update a digital strategy with clear objectives

- a common understanding on the importance of digital competence
- definition of organizational minimum requirements
- a model for individual competence development plan
- participate staff, utilize staff's expertise

Enhance communication

- make the importance and benefits of digital competence clear
- communicate the organizational objectives
- show commitment and example
- enable and promote sharing of knowledge and experiences

Support the implementation of teachers CPD-activities

- regular development discussions with employees
- support the creation of individual competence development plans
- provide time for CPD-activities
- enable peer support and cooperation

7 DISCUSSION

Leading the development of teachers' digital competence starts from committing to a commonly understood digital strategy. Based on the results of this study, the DigCompEdu -framework was a suitable choice for the main frame of the organizational strategy. It also supports the development of individual learning paths, which suit TAKK well as they are congruent with the competence-based learning approach used with students.

Communication was accentuated throughout the research, as it often is in change processes. It was one of the most discussed aspects with both TAKK management as well as teachers. I agree with both Kotter (1996) and Lewin (1947) that if you want people to change, or take part in changing something, you need to make the reason for the change clear. Furthermore, as the research results indicate, I believe that showing example, or rather acting as an example yourself, the chances of reaching the desired change will be improved.

Therefore, Lewin's (1947) stage of creating motivation and the Kouzes' & Posner's (2012) practice of *"Inspire a Shared Vision"* by can be used as leadership models for the development of teachers' digital competence. Furthermore, the practice *"Enable Others to Act"* (Kouzes & Posner, 2012) appears appropriate as it accentuates trust and encourages the leaders to participate the involved parties into cooperating on the shared objectives. The service design research methods used in this study support the benefits of this practice and I consider them well suited for the purpose. Hence, in my opinion, it is crucial to engage the staff members in a way that the objectives are shared and owned together, not just passed down from above.

The service design workshop for TAKK leaders also generated further actions. Through the workshop, interest and commitment for supporting the development of teachers' digital competence rose among the leaders. During the research process, I observed that the previously somewhat abstract responsibility for enhancing teachers' digital competence development was now accepted as a responsibility of each manager. As a result, the TAKK foundation board together with the

board of directors arranged a benchmarking visit to VUC, which is a Danish educational organization and a partner in the case study project. VUC is a n expert in developing educational organization's digital capacity and can thus be considered as an excellent example to observe.

The results of this thesis also support the practice of developing teachers' digital competence according to individual learning paths. According to Whitmore's (2009) coaching theory, leaders should focus on their staff members' potential, not their performance. In the case of competence development, this supports TAKK's model of individual learning paths. In practice this means that teachers are not expected to perform equally, but instead follow their own development paths in order to reach their individual potentials. Thus, teachers' competences should not be compared to each other's, but to their own perceived maximum potential. In my opinion, elements of the GROW-coaching model (Alexander, 2010) (Whitmore, 2009) could be adapted in the leadership of this process. Phases of the GROW-model can be utilized for example in guiding the teachers to take responsibility of their own development needs, as well as empowering them to modify and develop their learning paths according to changing needs.

From the leadership point of view, it is very important that the leaders are able to monitor and guide the competence development process of their teachers. In addition, the leaders need to have a way of validating the acquired competence. Considering the results of this study and supported by the results of relevant national research introduced in Chapter 3, the next development aspect in TAKK should focus on utilizing learning analytics and digital badges in the teachers' competence development process.

8 CONCLUSIONS

At the time of this writing, the world is in the middle of the Coronavirus-pandemic. With the abrupt increase of distance learning, the importance and necessity of digital competence has suddenly become one of the key aspects of all education, from basic education to universities.

This time has proven us that the needs and practices of digital competence can change rapidly. For example, in TAKK a teacher training on basic digital competences that was still relevant at the beginning of the year, is now in need of rather substantial updating. Changes in the operating environment and rapid technological development require also educational leaders quick reacting as well as an ability to adjust their operations accordingly. New ways of teaching, innovative learning methods and different digital tools need to be experimented and evaluated in order to match the changing needs. It is the responsibility of the management to make sure that the conditions for agile experimenting are in order.

An essential factor contributing to the success of experimenting and introducing new technological methods and tools is teachers' digital competence. This, in turn, requires the leaders enabling of continuous development of teachers' digital competence according to their individual learning objectives, supported by cooperation and sharing of good practices. It is crucial that the development of teachers' digital competence starts at the organizational level, so that the CPD-activities are rooted in the organizational development. Based on the results of this research, arranging the necessary resources for CPD-activities while encouraging and showing example, the leaders of educational organizations can create an inspiring environment that motivates teachers to integrate continuous digital competence development as a natural part of their every-day operations.

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