Key Competences: Citizens' Perspectives

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ABSTRACT

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Over the past several decades, the competences that education systems produce have emerged as a pervasive topic in educational policy discourse. In addition to many national and international evaluations of and frameworks for essential future competences, there is a need to understand the perspectives of citizens. This study focuses on the competences that research participants from a diverse set of social backgrounds in Finland considered to be essential in the future. In all, 70 research participants were interviewed in 10 Finnish municipalities using a combination of convenience and purposive sampling. A holistic typology of competence (Le Deist & Winterton, 2005) was used as the basis for the content analysis.

The results illustrate 33 key competences as described by the participants. Particularly, the participants emphasized the importance of meta competences and social competences necessary in the future world and working life. The reasoning behind why the participants felt meta competences to be important was examined. A high level of congruence with the aims of many recent national and international educational policies is discussed. This study introduces novel knowledge for adults' competences and can be used as a starting point for future studies in developing better understanding of the competences that are needed in different industries.

Keywords: citizens, competence, content analysis, interview, key competence

CONTENTS

ABSTRACT

1   INTRODUCTION

Global megatrends such as the runaway development of technology and globalization are changing the competences that individuals and communities are expected to master both at work and in everyday life. Consequently, many international organizations (e.g. the Organization for Economic Co-operation and Development [OECD]) and supra-state regional bodies (e.g. the European Union [EU]) are increasingly interested in the competences that education systems have produced over the past few decades (e.g. Jääskelä, Nykänen, & Tynjälä, 2018; Välijärvi, 2014; Winterton, 2009). For example, this interest is illustrated in the emergence of international evaluations of educational outcomes (e.g. the Program for International Student Assessment [PISA]) and numerous educational policy documents that aim to guide education development towards the enhancement of competences that are regarded as being essential in the future (e.g. Definition and Selection of Competencies [DeSeCo]).

In addition to the key competences defined by various interest groups, there is a need to understand the perspectives of citizens. Even though these international frameworks have been developed via extensive consultation processes that have included expert groups', countries' and even the public's input (see European Council, 2018; OECD, 2005), it is justifiable to question whether they are able to meet the everyday needs of citizens of each country involved. This study focuses on the competences that people from a diverse set of social backgrounds in Finland consider to be essential. Competences are studied using a holistic typology of competence, which distinguishes four main competence categories: cognitive competences, functional competences, meta competences and social competences (Le Deist & Winterton, 2005). The reasoning behind the importance of the competence category that was highlighted the most is examined.

The aim of the study is to contribute to the timely discussion of future education and key competences by focusing on the perspectives of citizens. Further-

more, it aims to complement the perspectives of national and international frameworks that guide educational policies towards the enhancement of key competences.

1.1   Competence

There is a growing understanding that the world of work is undergoing a revolution. Rather than moving from one way of doing work to another, this revolution is characterized by continuous change towards a more complex and diverse world of work (Goos, 2013; Prime Minister's Office Finland, 2017). Consequently, competences that educational systems produce have been put under a spotlight during the past few decades (Jääskelä et al., 2018).

For example, the European Union (EU) has defined the development of high-quality education as one of the cornerstones in reaching its aim of becoming the world's most competitive nation. Towards that end, the union has been actively influencing education development in its member countries in the 21st century (Välijärvi, 2014). An example of such influence is the European Council's Recommendation on key competences for lifelong learning –framework (released in 2006 and later revised in 2018), which aims to support the fostering of key competences that are considered necessary for "personal fulfilment, employability and social inclusion" by providing a reference tool for educational policymakers, education providers, employers and learners (European Council, 2018).

The Organization for Economic Co-operation and Development (OECD) has also been active in the field of education during the past decades. One of its aims has been to develop a strategy for defining, selecting and measuring competencies in the youth and adult population (OECD, 2001). Towards that end, it initiated the Definition and Selection of Competencies (DeSeCo) –project, which seeks to advance the theoretical underpinning of key competences that are described as the "psychosocial prerequisites for a successful life and a well-functioning society" (OECD, 2005). The DeSeCo–project has collaborated with

OECD's international assessment programs, such as the Program for International Student Assessment (PISA), in order to produce internationally comparable information on competences for the use of national level educational policymakers (OECD, 2001).

Even though competences have become a vital part in the vocabulary of educational policymakers and reformers during the past decades, there is no standard definition. According to Le Deist and Winterton (2005), there has been such confusion and debate around the concept that it is not possible to arrive at a definition capable of reconciling all the different ways that the term is used. The definition for competence lies between different research traditions (Le Deist & Winterton, 2005; Mulder, 2007; Winterton, 2009) and varies between the contexts where it is being used (Markowitsch & Plaimauer, 2009; Rychen & Salganik, 2003). Furthermore, understanding of competence also depends on linguistic and cultural differences (Lehtonen, Rintala, Pylväs & Nokelainen, 2018; Winterton, 2009).

In the US (United States), competences have been considered as fundamentally behavioural and acquirable through learning (Le Deist & Winterton, 2005). Research has focused on individual characteristics that explain superior performance. The UK (United Kingdom) tradition has developed occupationally defined standards of functional competences and their applicability to the workplace. In the French and German approaches, a more multi-dimensional and analytical concept of competences has been developed (Le Deist & Winterton, 2005). Finnish research on competences have often referred to field-specific knowledge and skills of the individual (Lehtonen et al., 2018; Ruohotie & Honka, 2003). Lately, however, there have also been signs of convergence between the different national research traditions (Le Deist & Winterton, 2005).

The key competences for lifelong learning –framework by the EU and the Definition and Selection of Competences -framework by the OECD define competences as follows:

"A combination of knowledge, skills and attitudes, where a) knowledge is composed of the facts and figures, concepts, ideas and theories which are already established and support the understanding of a certain area or subject; b) skills are defined as the ability and

capacity to carry out processes and use the existing knowledge to achieve results; and c) attitudes describe the disposition and mind-sets to act or react to ideas, persons or situations." (European Council, 2018)

"A competency is more than just knowledge and skills. It involves the ability to meet complex demands, by drawing on and mobilizing psychosocial resources (including skills and attitudes) in a particular context. For example, the ability to communicate effectively is a competency that may draw on an individual's knowledge of language, practical IT skills and attitudes towards those with whom he or she is communicating." (OECD, 2005)

The definitions of these two frameworks include multiple points of resemblance. First, they both regard that competences comprise of knowledge, skills and attitudes. Second, both of them emphasize the practical value of competences in real-life contexts. Most definitions of competence (see, e.g. Hanhinen, 2010; Le Deist & Winterton, 2005; Markowitsch & Plaimauer, 2009; Mulder, 2009; Winterton, 2009) seem to be in line with these notions. Similar elements can also be found in the earliest contributions on competence. The concept was first coined by White (1959), who described personality characteristics that are associated with superior performance and higher motivation. In the 1970's, McClelland (1973) proposed that competences that are based on criterion sampling would be better predictors of life-outcome behaviors than pencil-and-paper based intelligence tests. Later on, Gilbert (1978) demonstrated the idea of competence as a function of worthy performance and Boyatzis (1982) conducted large-scale studies on the skills and traits successful managers. Thus, since the emergence of the concept in professional literature, competences have seemed to go beyond "what one knows" to "what one can do". Competences are detectable, measurable and applicable (Mulder, 2012). They are aptitudes that help individuals and communities to perform different tasks in working life and everyday life (Välijärvi, 2014).

In the context of education and learning, the competence perspective is practical and emphasizes the applicability of what is learned (Välijärvi, 2014). Traditional input-driven education development, where teachers and experts determine the content of the curriculum on their own, has been criticized of resulting in obsolete education programs that are irrelevant for socio-economic development (see Mulder, 2012). Consequently, competence-based approaches that aim to root curricula more deeply in the needs of working life have emerged in

the educational policy reforms of many countries during the recent years (e.g. Le Deist & Winterton, 2005; Mulder, 2012). The development of competences is about meeting the demands of working life at the present, but also about reacting to the changes and future challenges of working life (Lehtonen et al., 2018; Mulder, 2012). The competence-based approach to education development has been criticized especially by the liberal education tradition, which claims that the competence-based approach reduces education to its instrumental value (Hyland, 2006; Santiago, Carvalho & Relva, 2008; Välijärvi; 2014).

1.2   Key competences

Competences that are considered essential in the future are often referred as key competences. According to Rychen and Salganik (2003), the concept is used by policymakers and other groups to articulate and advance their particular agendas. Even though different individuals and interest groups are often reacting to similar broad demands of the changing world, their approaches to identifying competences that are essential in the future are often different (Rychen & Salganik, 2003).

For example, the EU's Key competences for lifelong learning –framework was generated through a broad stakeholder consultation process, which included e.g. expert seminars, member state representative meetings and a three-month public online consultation. The framework defined key competences as those that "all individuals need for personal fulfilment and development, employability, social inclusion, sustainable lifestyle, successful life in peaceful societies, health-conscious life management and active citizenship" (European Council, 2018). In total, eight key competences were identified: 1) literacy competence; 2) multilingual competence; 3) mathematical competence and competence in science, technology and engineering; 4) digital competence; 5) personal, social and learning to learn competence; 6) citizenship competence, 7) entrepreneurship competence; and 8) cultural awareness and expression competence (European Council, 2018).

OECD's approach to defining key competences in The Definition and Selection of Competencies –project included a review of competence-related research, opinions of experts and stakeholders and contribution of country perspectives. The project describes key competencies as "psychosocial prerequisites for a successful life and a well-functioning society" that must: a) contribute to valued outcomes for societies and individuals; b) help individuals meet important demands in a wide variety of contexts; and c) be important not just for specialists but for all individuals (OECD, 2005). Furthermore, they should contribute to economic aspects (such as productivity, competitiveness, innovation and reducing unemployment) but also broader social aspects (such as participation, democracy, social cohesion, justice, human rights and reducing increasing inequality of opportunities and individual marginalization) of the society (OECD, 2005). In all, three competency categories and nine key competencies were identified in the DeSeCo framework:

TABLE 1. Key competencies according to the DeSeCo –framework (OECD, 2005)

Competency category		Competency
1. Using tools interactively	A.	The ability to use language, symbols and text interactively
	B.	The ability to use knowledge and information interactively
	C.	The ability to use technology interactively
2. Interacting in heterogeneous groups	A.	The ability to relate well to others
	B.	The ability to cooperate
	C.	The ability to manage and resolve conflicts
3. Acting autonomously	A.	The ability to act within the big picture
	B.	The ability to form and conduct life plans and personal projects
	C.	The ability to assert rights, interests, limits and needs

Even though these frameworks have been developed via extensive consultation processes that have included expert groups', countries' and even the public's input (see European Council, 2018; OECD, 2005), it is justifiable to question whether they are able to meet the everyday needs of citizens of each country involved. Furthermore, the increasing role of supranational educational policy aims in national level educational policymaking has been criticized (see Kallo, Rinne & Hokka, 2004). Thus, in addition to the key competences defined by various interest groups, there is a need to understand the perspectives of citizens. This study focuses on the competences that people from a diverse set of social backgrounds in Finland consider to be essential.

I examine competences using a holistic typology of competence (see Table 2) introduced by Le Deist and Winterton (2005), which combines elements of competence theories from different traditions and countries as reported in the literature.

TABLE 2. A Holistic Typology of Competence (Le Deist & Winterton, 2005)

	Occupational	Personal
Conceptual	Cognitive competence	Meta competences
Operational	Functional competence	Social competences

In the holistic typology, cognitive competences include knowledge and understanding, functional competences include practical skills, social competences include behavioral and attitudinal attributes and meta competences include competences that facilitate the acquisition of the other competences (Le Deist & Winterton, 2005).

1.3   Research task

The aim of the study is to contribute to the timely discussion of future education and competences. In addition to the essential future competences defined by various interest groups, there is a need to understand the perspectives of citizens. This study focuses on the competences that people from a diverse set of social

backgrounds in Finland consider to be essential in the future. Toward that end, it sought to answer the following research question:

RQ1: What kind of (cognitive, functional, meta and social) competences do the research participants consider to be important in the future?

Furthermore, I focus on the competence category that is highlighted the most by the research participants. Namely, the reasoning behind why the participants felt these competences to be important is examined:

RQ2: What kind of reasons do the research participants give for the importance of competences?

2   IMPLEMENTATION OF THE STUDY

2.1   Participants

This study was based on the interviews of 70 research participants. The participants consisted of two different groups. The first group (n=52) were randomly selected by approaching people face-to-face on the streets in 10 Finnish municipalities located in different parts of the country (for convenience sampling, see Etikan, Musa & Alkassim, 2016). Participants in the second group (n=18) were selected purposively, based on assumptions about their expertise and interest in the research topic (see Etikan, Musa & Alkassim, 2016; Teddlie & Yu, 2007). Purposively selected participants were typically approached via email or Facebook.

The age range of the participants was 6–82 years. 34 of the participants were female and 36 were male. Out of the 19 regions in Finland, 15 were represented. Using the International Standard Classification of Education 2011 (UNESCO, 2012), all education levels except ISCED 4 were included. The participants included workers in different sectors and industries. However, the data collected on occupation and industry was not comprehensive enough to conduct ISCO- or ISIC-coding. Not all participants were in working life at the time of the study, e.g. current students and pensioners.

2.2   Research methods

The data collection method was unstructured interviews. The method was chosen for the purpose of the study (studying citizens' perspectives), because it enables the participants to express their thoughts and interests in the natural flow of interaction without a priori categorization that might limit the topics that are discussed (Rapley, 2004; Zhang & Wildemuth, 2017). Each of the interviews followed the same relatively broad interview guidelines. In practice, the participants were asked more about the topics they had chosen after being introduced

to the main topic (Rapley, 2004; Zhang & Wildemuth, 2017). The following questions were often included for either introducing the topic or stimulating further conversation: What kind of knowledge, skills or attitudes are needed in the future? What kind of direction should education in Finland be developed into? When thinking of the world today, what kind of things should be emphasized in education? What kind of resources do you hope education is providing people with nowadays?

The interviews were conducted as single, pair and group interviews. Most of the interviews took place where each participant was originally met (Etikan, Musa & Alkassim, 2016). These were typically outside environments such as parks, marketplaces and harbors. Seven interviews were conducted as phone interviews. The duration of the interviews varied between 5 and 67 minutes. The interviews were originally conducted as part of another research project in 2017.

2.4   Data Analysis

I analyzed the data from the transcribed interviews using content analysis. In this process, I utilized both qualitative and quantitative operations on text. In all, the analysis comprised of six phases: (1) familiarization with the data; (2) review of literature and development of a coding scheme; (3) application of the coding scheme to the data; (4) thematic review of competences; (5) calculation of frequencies of competences coded in each transcribed interview (RQ1); and (6) thematic review of the reasoning behind the importance of competences that the participants highlighted the most (RQ2) (see, Dixon-Woods, Agarwal, Jones, Young & Sutton, 2005; Neuendorf, 2002; Vaismoradi, Jones, Turunen & Snelgrove, 2016).

In the first phase of the process, I familiarized myself with the transcribed interviews in order to establish an initial understanding of the data. This included transcribing the recorded audio files, reading through the majority of the transcriptions and taking notes of recurrent ideas and key issues that were present (Vaismoradi et al., 2016).

In the second phase, I chose a relevant theoretical framework based on review of the literature. I chose the holistic typology of competence (Le Deist & Winterton, 2005), because it provided the most comprehensive and multi-dimensional conceptual tool for analyzing competences. Based on the holistic typology (see Table 2), I included four competence categories in the coding scheme: cognitive competence, functional competence, meta competence and social competence (Le Deist & Winterton, 2005). In addition, I included a fifth competence category of miscellaneous competence for descriptions of competences that did not fit in the four competence categories (see, e.g. Neuendorf, 2002, 118). These were eventually omitted from the analysis.

The basis of evidence how each data extract was coded derived from the definitions of the holistic typology: cognitive competences included knowledge and understanding, functional competences included practical skills, social competences included behavioral and attitudinal attributes and meta competences included competences that facilitate the acquisition of the other competences (Le Deist & Winterton, 2005). Table 4 describes and exemplifies the coding categories.

TABLE 3. Examples of data extracts that were coded to the different competence categories

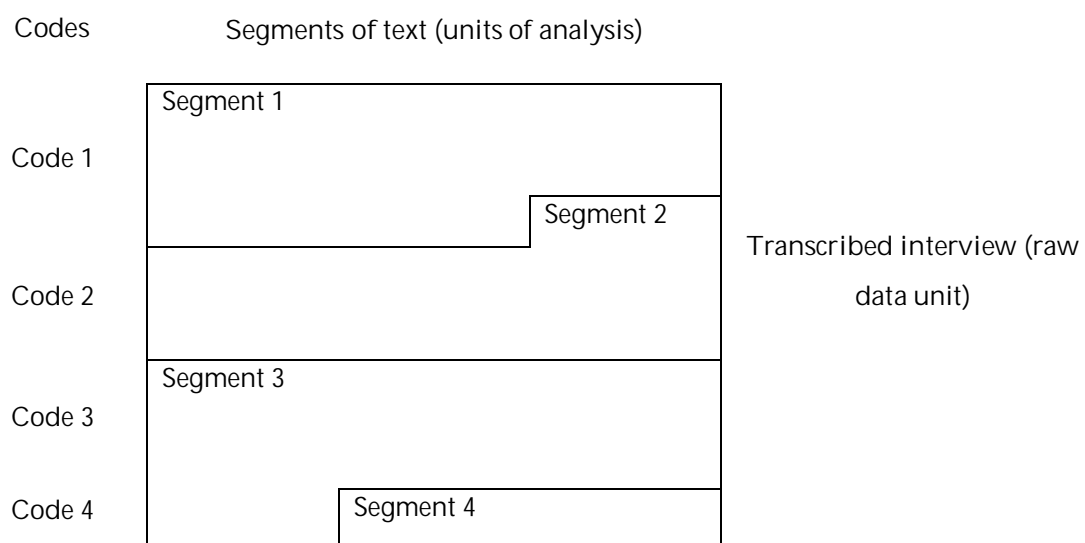| Competence category	Description	Examples of data extracts
Cognitive competences	Knowledge and under-standing	[The most important task of education is] to develop one's thinking and to help oneself observe the surrounding society diversely and widely. […] Increasing every human being's self-understanding, understanding of the surrounding world, understanding of history and the society that we currently live in. (Julia)
Functional competences	Practical skills	Tablets and all kinds of ICT-competences. They are the very basic thing that would be extremely important. You have to have them. You can't manage without them. Books disappear and technology replaces them. […] Tablets and all, they are now the thing. (Akseli)

Meta competences	Facilitate the acquisition of the other competences	I'll have to say something like, the teacher should teach you how to learn and retrieve the knowledge that you are studying yourself. The teacher wouldn't teach you any subjects, but instead how to find the knowledge your-self. And after that, you can find it all. (Tapio)
Social competences	Behavioral and attitudinal attributes	Especially the confidence and vocabulary to speak English. I feel like it has made every-thing so much easier. […] It has been very useful to have those strong basic English skills. And also daring to use them, because perhaps before I was a bit shy about speak-ing it. (Sari)
Miscellaneous competences	Unspecified	The most important task of education is to give people resources in their growth as human beings. (Pekka)

The third phase of the analysis process was coding. In the beginning of coding, I defined the units of analysis. A raw data unit was a transcribed interview of a participant. I divided the raw data units into segments by identifying units of meaning in the text (Henri, 1992). In practice, units of meaning consisted of ex-tracts of transcribed text that focused on the same topic. The length of such seg-ments varied from one sentence to longer utterances of even half a page of tran-scribed text (Henri, 1992). These segments formed the units of analysis of this study (see Table 4). Segments that did not discuss competences were omitted from the analysis at this point.

During the segmentation of the raw data units, I coded each segment to one of the competence categories described in Table 3. Furthermore, I included an additional part in every code that was unique to that specific segment. In these unique sub-codes, I included the name and description of the competence as de-scribed by the participant as well as the reasons, if there was any, for the im-portance of that competence. For example, if a participant described that collab-

oration skills will be important in the future as there will be more and more interdisciplinary collaboration in the future working life, would the corresponding code have had the following structure: COMP_SOCIAL: Collaboration skills: In the future, working life will include more interdisciplinary collaboration, where COMP_SOCIAL represents the competence category of social competences (see Table 2 for the holistic typology of competence) and the latter part, which is the unique sub-code, represents the competence of collaboration skills.

TABLE 4. Illustration of the units of analysis.

Codes   Segments of text (units of analysis)

Code 1	Segment 1
	Segment 2
Code 2	Transcribed interview (raw data unit)
Code 3	Segment 3
Code 4	Segment 4

In order to answer RQ1, I collated the unique sub-codes that included similar meaning into competences under each competence category (Vaismoradi et al., 2016). In this phase of the analysis, I interpreted which different wordings refer to the same or relatively similar competence. For example, one participant might talk about 'social skills' and another about 'interaction skills', while both refer to the same ability of being able to meet and socialize with new people. Finally, I reviewed and refined the competences multiple times until they were similar enough within each competence and different enough between competences (see Patton, 1990 for 'internal homogeneity' and 'external heterogeneity').

In order to examine the quantitative distribution of competences between competences and the competence categories, and to define which main theme to

choose for further analysis for RQ2, I calculated the frequency of each competence in the data (Neuendorf, 2002). However, in order to avoid bias in favor of longer interviews, and to give each citizen an equal voice in defining key competences, I only included one occurrence of the same competence per participant, when counting the frequencies of competences in the data.

In order to answer RQ2, I chose the competence category with most occurrences for further analysis. In this final phase, I conducted a thematic review of the reasoning behind why the participants felt this competence category to be important. The aim of this method was to provide a more detailed and nuanced description of the competence category that was the most dominant feature in the whole data (Vaismoradi et al., 2016).

2.5   Ethical Solutions

The data collection procedure was based on the voluntary consent and participation of the participants. Participation did not involve any significant psychosocial or physical risk. The participants were aware that the interviews were recorded. Only the research team had access to the audio files and transcribed interviews. The data that was used in this master's thesis was completely anonymized. This included deleting the audio files and omitting all occurrences of names and places from the transcribed data. Pseudonyms were used, when reporting the results. All utterances that might lead to the identification of the participants were excluded from the reporting of the results. The study followed the modes of action endorsed by the research community: integrity, meticulousness, and accuracy in conducting research, in recording and presenting results, and in judging research and its results (see, Finnish Advisory Board on Research Integrity, 2012).

3   RESULTS

This section discusses the key competences that were manifested in the content analysis. Results for RQ1 illustrate the different competences and their distributions between the four competence categories (cognitive competences, functional competences, meta competences and social competences; Le Deist & Winterton, 2005). Results for RQ2 focuses on the competence category that the participants highlighted as the most important and the reasons behind why the participants felt these competences to be important.

3.1   Key competences: Citizens' perspectives

The results for RQ1 (see Table 5) illustrate that the participants described a total of 33 key competences. Meta competences (f=111) and social competences (f=108) were the two most frequently mentioned competence categories in the data. The most frequently mentioned competences were self-management skills (n=27), learnings skills (n=25), foreign language skills (n=25), social skills (n=20) and working life skills (n=18).

TABLE 5. Results of the Thematic Analysis based on the Holistic Typology of Competence (Adapted from Le Deist & Winterton, 2005)[1]

(N=70, f=295)	Occupational (f=76)	Personal (f=219)
Conceptual (f=141)	Cognitive competences (f=30)	Meta competences (f=111)
	Knowledge in global issues, cultures and religions (n=9)	Self-management skills (n=27)
		Learning skills (n=25)
	Knowledge in career opportunities (n=8)	Physical and mental wellbeing (n=15)
	Knowledge in technology, mathematics and natural sciences (n=6)	Self-reflection skills (n=14)
		Motivation to learn (n=11)
	Knowledge in history and social studies (n=5)	Networking skills (n=9)
	Knowledge in philosophy (n=1)	Mathematical and logical skills (n=5)
	Knowledge in psychology (n=1)	Everyday life skills (n=5)

Operational (f=154)	Functional competences (f=46)	Social competences (f=108)
	Working life skills (n=18)	Foreign language skills (n=25)
	Digital skills (n=14)	Social skills (n=20)
	Problem-solving skills (n=5)	Cultural sensitivity and global mindset (n=17)
	Literacy skills (n=4)	Emotional intelligence, acceptance and empathy (n=12)
	Numeracy skills (n=2)	
	Project work skills (n=1)	Collaboration skills (n=10)
	Marketing skills (n=1)	Dialogue and argumentation skills (n=10)
	Practical craft skills (n=1)	Active citizenship (n=8)
		Courage (n=3)
		Digital skills (n=1)
		Leadership skills (n=1)
		Sportiveness (n=1)

[1] In the table, n represents the number of participants (N=70) that referred to each competence as a key competence. As it is possible for one participant to refer to multiple competences in the same competence category, the total amount frequencies in each category might exceed the number of participants. Thus, in the table, f denotes the total number observations of each competence category (f=295).

In order to answer RQ2, meta competences were chosen for further analysis as they were highlighted the most by the research participants (f=111). The next chapter focuses on the reasons behind why the participants felt meta competences to be important.

3.2   Reasons behind the importance of meta competences

For RQ2, meta competences were chosen for further analysis as they formed the most dominant competence category in the data. The meta competences that were highlighted by the participants as key competences included: (i) self-management skills; (ii) learning skills; (iii) physical and mental wellbeing; (iv) self-reflection skills; (v) motivation to learn; (vi) networking skills; (vii) mathematical and logical skills; and (viii) everyday life skills. Based on the holistic typology of competence (Le Deist & Winterton, 2005), these competences were defined as competences that facilitate the acquisition of other competences. In this chapter, I exemplify the reasons behind the perceived importance of meta competences as described by the participants.

(i) Self-management skills. In all, more than one third of the participants referred to self-management skills as a key competence. Self-management skills were described by the participants as the ability to read signals of changes and opportunities in the surroundings, making plans accordingly and carrying out those plans. Furthermore, individuals need to be active, open and flexible in creating their own future. The importance of self-management skills was validated with regards to the demands of the continuously changing world, as exemplified in the following extract:

> Life is constantly changing, and compared to history, it's a lot easier now. There is less physical strain, but perhaps that mental stress keeps on increasing. And I think in the core of that is one's own agency and initiative. […] It's beneficial for everyone if you can read those signals of change around yourself, and not regress into this kind of reactivity, where you have to constantly fix problems in your life, and feel like they just keep coming up, and you can't influence the situation. […] It helps you navigate in the middle of that change and uncertainty and keep those options in your corner. (Mikael)

In the above example, Mikael describes how individuals today need to be proactive in navigating among changes and coping with uncertainty. This exemplifies how self-management skills were seen as key from the perspectives of individual wellbeing and having options in life. Self-management skills were also described as entrepreneurial skills.

(ii) Learning skills. More than one third of the participants referred to learning skills as a key competence. Similar to self-management skills, the participants described possessing learning skills as a necessity that derives from the demands of the continuously changing world. Namely, learning skills were described as key in adapting to changes that are typically outside the control of the individual, as illustrated in the following example:

> Just the fact that working life is changing. And among those big drivers of change there is the development of technology […] There is a lot of talk how big proportion of occupations is like at risk of disappearing because of automatization and robotization. Then there is that global development. We have a lot of work moving out from Finland to countries where production is cheaper. Those labor market structures have changed. […] That creates new kinds of possibilities, but new kinds of competences are needed. (Liisa)

In the above example, Liisa describes how the development of technology and the moving of jobs to countries with cheaper production create new demands in

regards of the competences that individuals need to master in working life. Furthermore, the participants described that not being able to constantly learn can be a threat for one's labor market relevance and employment. Helena expressed similar concerns at the national level, when she described that Finland is lagging behind the global development in developing competences that are going to be key in the future:

> Simply the fact that there really aren't those kinds of jobs anymore, where for example primary education is sufficient. […] It only tells us that the competences that are needed have changed, and now we need higher level competences than before. And it looks like that development cannot be stopped, but it will be even faster instead. […] And when we look at the state of the competences that Finns have at the moment, it does not quite correspond to the outlook of the future. We have kind of stagnated. (Helena)

In addition to describing changes in working life, the participants described that learning itself has changed over time. Almost half of the participants who talked about learning skills described that the abilities to search for and evaluate information critically are key learning skills in today's world. Particularly, the importance of these skills was associated with the constant availability of new information in the internet. Among the participants who had completed their education before the introduction of the internet, many described past experiences in education that did not correspond to their ideas of learning at the time of the study. This perspective is illustrated in the next examples:

> In our youth, we learned something by heart. Nowadays it is not necessary anymore. […] Why do I need to know something like that by heart, when it takes me ten seconds to look it up from Wikipedia? So, in a way that is also changing. […] Learning knowledge and how to apply it, how to find it and search for it. That is definitely the most important thing societally. (Johanna)

> Well, we had computers in primary school already, but there was no Wikipedia or other more reliable sources back then. Nowadays, those who are in primary school, they have a lot of information available. We have studied totally differently obviously. And I think, I do not know too much about primary school these days, but I think they are being taught to find information. And I think that is important. When knowledge keeps constantly changing, and there is an awfully lot of it, one needs to be able to find the right information and separate it for example from fake news and find the right facts. (Anneli)

These examples show how the participants associated learning skills with information technology utilization and critical thinking skills. Similar to self-management skills, the participants described an active role of the individual in one's

own development. Learning skills are needed in order to acquire new competences, which is characteristic to meta competences.

(iii) Physical and mental wellbeing. In all, more than one fifth of the participants described skills that relate to one's wellbeing as a key competence. The participants described physical and mental aspects to wellbeing. The physical aspect included awareness of one's own physical health, sportiveness, and being able to take care of nutrition and sleep. The mental aspect included the abilities to monitor and control one's own emotions and stress level. This is exemplified in the following statement:

> Maybe studying emotional skills more, the recognition of emotions […] would generally be really good to know for life from the perspective of mental health. […] It is a basic element of one's own wellbeing, kind of the foundation. […] The society obviously creates pressure, but if one is able to recognize one's own limits and tiredness at an early stage, there would not be as many strained people, if one can monitor a little where they are at. (Emilia)

The example shows how competences that are related to wellbeing were seen as important in managing the pressure that individuals face in their working life and studies. Finding ways to relax and enjoy life was seen as important counterweight to these increasing demands. This perspective is further highlighted in Kristian's comment:

> Now we are living in this phase, where there is a massive aim for working intensively, where we do things together whole the time, and the volume is huge. Maybe in the future, school will be a place where there is more harmony between relaxation and intensive working. We would learn to work together intensively in these very intensive periods. […] But in addition to that, people need to relax. So, in school, you would learn to recover and find that kind of ability in yourself. Learn that if I do this, I will calm myself down better and recharge better. Searching for the balance. (Kristian)

Competences that relate to wellbeing were included in meta competences in the analysis because they were described as a necessary foundation for self-development. Thus, they facilitate the acquisition of other competences, as illustrated in the following extract:

> That should be seen as equally important as, let's say, studying history. Even though history is important as well, but in a way, enhancing one's wellbeing would be important. And if you think about it this way. If we have individuals, people, who feel well, they also learn better, and then they get more out of the theory that is being studied, if they have the capacity and energy to learn. (Karoliina)

(iv) Self-reflection skills. One-fifth of the participants considered self-reflection skills as a key competence. Self-reflection skills were described as the ability to recognize, evaluate and verbalize one's own learning and competences. In the following example, Pauliina describes how it is important to be aware of the competences that one has acquired in different contexts of life from the perspective of employment:

> If we talk about the change of competences and working life, it's not enough anymore that you go to a school, pass a certain course and get a certain degree, but you also have to really understand what you can do. And then, when working life changes, you are not only able to say that I have this kind of degree, but you can also describe the competences that you have. […] What is my entirety of competences? What is my profile like? More attention should be put on that. In a way, to learn to understand not only content but also yourself and your competences. (Pauliina)

Pauliina's statement demonstrates how the importance of self-reflection skills was validated with regards to the continuous changes in working life. The participants described that individuals nowadays are often required to change occupations during their careers, which makes the ability to reflect on one's own competences essential. Self-reflection skills were described as key from the perspective of making future plans that are both realistic but also correspond to one's own interests. This is exemplified in the following statements:

> That one would learn to recognize, that if I have done this job for ten years, what are the things that I can do. And comparing that to other jobs so that if you change work places or the direction of your career, you would recognize your relevance in relation to all those possible career paths. (Pauliina)

> It's something that I think everybody is responsible for. You and me equally, and all the people we know, have to think about our own relevance in the labor market. Can I do what is required there at the moment? And if it starts to feel like you are behind, we have those ways and possibilities to acquire new competences by ourselves. (Susanna)

Self-reflection skills were identified as meta competences in the analysis, because they were described as necessary in knowing what kind of competences the individual should further acquire. Thus, they facilitate the acquisition of other key competences by providing "directions" for self-development.

(v) Motivation to learn. Motivation to learn was highlighted as a key competence by more than one seventh of the participants. Similar to learning skills, motivation to learn was described as a necessity in responding to the demands of continuously changing working life. In the next example, Ilona describes how

digitalization and globalization change working life contexts, and how motivation to learn is required to keep up with the demands that derive from these developments:

> I believe that where the society is heading is that quite many occupations or working environments are going to a direction, where we constantly need to be more effective. Especially in the private sector, there is a lot of pressure. We kind of need to, everybody needs to work and be part of that development, because then again with all this digitalization and globalization, the world is getting smaller. […] After all, people are replaceable. Then, it's definitely the mutual benefit of every individual, company and community, if people are in a way motivated towards new knowledge and learning throughout their careers. And if this is understood at every level, then I think that we are already on the better side of it. (Ilona)

Furthermore, the participants validated the importance of motivation to learn with regards to the constant availability of new knowledge, which requires the individual to continuously update what one has learnt. Thus, motivation to learn was identified as a meta competence as it facilitates the acquisition of other competences. Motivation to learn was also described as curiosity towards new things:

> I would say that also the kind of curiosity and motivation to learn again and again is among the most substantial things that carries the individual forward and should be part of education. Sometimes education is seen particularly as something that kills that curiosity and that kind of inner motivation to learn new things. It should definitely be able to support that. (Matias)

As exemplified in the above statement, being able to enhance motivation to learn in pupils was described as a challenge to educational institutions. Namely, several participants referred to a reported decrease in study motivation in Finnish schools in their reasoning for the importance of motivation to learn as a key competence.

(vi) Networking skills. The importance of networking skills was emphasized by more than one eighth of the participants. Networking skills were identified as a meta competence in the analysis, because the participants described that networks provide the individual opportunities for learning and employment. This perspective is illustrated in the next example:

> I think young people can provide a great amount of certain kind of learning to older people, and older people can provide certain kind of learning to younger people, because both could learn. The other one needs the other. The potential that we have in doing together is tremendous, if everyone would use those networks. […] We have any amount of opportunities to learn. And everyone has the possibility to choose that I want to find the people who will teach me. […] Learning from one another, to be really able to actively do together and learn more from those things. (Aurora)

In the above example, Aurora describes the usefulness of networks in doing together and learning from one another. Furthermore, the participants described that such learning can cross generational, cultural and disciplinary boundaries. This competence was different from all the other meta competences, as it included a social perspective to competences.

(vii) Mathematical and logical skills. Mathematical and logical skills were described as a key competence by one in every fourteen participants. These skills were described as important in the development of one's thinking and understanding causalities and relations that surround the individual. Being able to make inferences and recognize logic behind societal phenomena and instances was considered essential for learning about and making sense of the world. This is exemplified in the following statement:

> After all, everybody's work is the same. It's this [imitates typing on a computer]. However, what you write is what you think. And how you think is how you learn. And mathematics kind of breaks down thinking into pieces and contemplates the causalities between things without all that, because we have a lot of, especially in this time, a lot of confusing information, which is disinformation or some kind of hoax. What is the essence there that we can make inferences of? In a way, what science is and what mathematics is, they are right there in the bottom of things and tell you that you can't calculate "one plus one is three". No matter how much you explain it to be true using rhetoric. (Lauri)

In the above example, Lauri describes how mathematics are needed in order to understand facts behind the abundance of words and information that the individual is nowadays surrounded with. Furthermore, he describes a connection between mathematics and learning. This exemplifies how mathematical and logical skills were associated with the acquisition of other competences in the participants' descriptions, therefore making it a meta competence in the analysis.

(viii) Everyday life skills. Everyday life skills were described as a key competence by one in every fourteen participants. This competence included skills that are practical in managing one's everyday life, e.g. being able to take care of one's own economy and having knowledge of societal support systems. This perspective is exemplified in the following extract:

> I think they should teach much more life skills in school as well, like how to take care of your economy, money and so on. At least we didn't have anything like that. How to fill in forms […] how do those societal support systems work, how to take care of your economy and those kinds of things. It would be good if there was more of that. (Elias)

Similar to physical and mental wellbeing, everyday life skills were identified as a meta competence in the analysis, because the participants described them as the basis for self-development and living a balanced life, which enables the acquisition of other competences.

4   DISCUSSION

4.1   Conclusion

This study focused on citizens' perspectives on key competences. In all, 70 research participants were interviewed in 10 Finnish municipalities about their opinions of competences that are essential in the future. Competences were examined using a holistic typology of competence, which distinguishes four main competence categories: cognitive competences, functional competences, meta competences and social competences (Le Deist & Winterton, 2005). According to the content analysis, the participants identified 33 key competences. Particularly, the participants highlighted the importance of meta competences, which were defined in this study as competences that enhance the acquisition of other competences (Le Deist & Winterton, 2005). The following meta competences were identified as key by the participants: self-management skills; learning skills; physical and mental wellbeing; motivation to learn; self-reflection skills; networking skills; mathematical and logical skills; and everyday life skills. The reasoning behind why the participants felt these competences to be important was examined. Particularly, the participants described meta competences as essential in adapting to the rapid changes that are taking place in the working life, including globalization, digitalization and the constant availability of new information.

4.2   Limitations

The results of this study illustrate that cognitive competences and functional competences, which are defined as occupational competences in the holistic typology of competence (Le Deist & Winterton, 2005), were much less present in the data compared to meta competences and social competences. One reason for this bias might be that the interviews concentrated on the competences that the participants thought should be enhanced through the formal education system. This starting point for the interviews often resulted in the adoption of a national

level perspective, instead of focusing on the competences that, for instance, specific occupational groups need. It can be assumed that many of these occupation-specific competences are learned in working life contexts, and although important, perhaps they were not considered as part of the competences that the formal education system that all individuals go through should enhance. Thus, future research is needed for deepening our understanding on the occupational competences that are needed in different industries (Le Deist & Winterton, 2005; Lehtonen et al., 2018).

When interpreting the results, it should be noted that the distinction between the different competence categories in the holistic typology serve an analytical purpose. However, in reality they are not completely separate from one another but might instead be best described as an integrated unity of the different dimensions. For example, to be able to utilize one's functional competences, one must also have the underlying cognitive competences for knowing what to do, the appropriate social competences needed in that specific context, and meta competences for having acquired the other competences in the first place (Le Deist & Winterton, 2005). Therefore, the different dimensions in the framework should be seen as partly over-lapping and complementary. From methodological perspective, this can potentially create challenges to the indication of which competence category should each competence be included in, and thus, for the reliability of coding. Thus, future studies that utilize the same methodology should use multiple coders and report the interrater-reliability of the analysis (Neuendorf, 2002) in order to increase the overall reliability of the study.

The amount of research participants in this study would have created fruitful grounds for further quantitative analysis on competences. Unfortunately, the background information that was collected from the participants was insufficient for the use of such methods. Furthermore, the amount of transcribed interview data was so extensive that I had to limit the analysis for RQ2 to one competence category only. I decided to do this based on the frequency calculations that I conducted as part of the content analysis. Even though meta competences were even-

tually chosen as the focus of this study, it could have as well been social compe-
tences, as they were practically highlighted as much by the participants. This in-
dicates that future studies focusing on social competences are equally needed.

Language related issues can also be considered as a limitation of this study.
Most of the interviews were conducted in Finnish, which slightly complicated
the research process. This included translating the results of the content analysis
as well as the data extracts that are presented in the results. When translating
from one language to another, there is always a risk of slightly changing the orig-
inal intended meaning during the process. Moreover, the concept of competence
itself is challenging, when translating between Finnish and English (Lehtonen et
al., 2018; Välijärvi, 2014). This is partly because the definition of and understand-
ing of competence varies culturally (Winterton, 2009). In this study, osaaminen
and kompetenssi were understood as the closest equivalents in the Finnish lan-
guage for the concept of competence.

This study focused on the competence perspective to education, which has
gained popularity in educational policy discourse during the past decades
(Mulder, 2012; Rychen & Salganik, 2003). However, many of the participants em-
phasized the perspectives of liberal education and growth as a human being as
education's most important tasks during the interviews. This perspective is often
regarded as contrary to the competence-based approach to education. The liberal
education tradition has criticized the competence approach of reducing educa-
tion to an instrument whose ultimate purpose is to satisfy the needs of other in-
stitutions of the society (Hyland, 2006; Santiago, Carvalho & Relva, 2008; Väli-
järvi, 2014). For example, according to Hyland (2006), recent policy trends in vo-
cational education and training have been characterized by "a neo-behaviorist
reductionism, which replaces rich conceptions of knowledge, understanding and
vocational practice with narrowly prescriptive skills and competences." Santi-
ago, Carvalho and Relva (2008) argue that universities are moving from being
cultural and social institutions towards an entrepreneurial and capitalist model
of higher education, where research changes in line with economic instrumental-
ity. According to Välijärvi (2014), the competence discourse has partly replaced

the liberal education discourse which has historically been one of the most significant traditions in the Finnish education development. Thus, future studies are needed for understanding the differences between the competence and liberal education discourse, and to critically examine what kind of fundamental elements of education the competence perspective might not take into account.

4.3 Significance of the study and future research

The results of this study illustrate a diverse set of competences that reflect the multiplicity of hopes and expectations that the participants have for their education system. Interestingly, these ideas illustrate a high level of congruence with the aims of many recent national and international educational policies. For example, learning skills, self-management skills, foreign language skills, social skills, cultural sensitivity and digital skills, which were all among the competences that were highlighted the most by the participants, are all promoted in the frameworks by the EU and OECD (European Council, 2018; OECD, 2005).

The results support previous research on the importance of meta competences in living in a world characterized by constant change (Boyatzis, 1999; Brown, 1994; Lehtonen et al., 2018). The world of work is reportedly changing at a rapid pace and at such a scale and level of complexity that comparisons have been made between today and the Industrial Revolutions. Rather than moving from one way of doing work to another, this revolution is characterized by continuous change towards a more complex and diverse world of work (Goos, 2013; Prime Minister's Office Finland, 2017). Furthermore, such development is only predicted to accelerate in the future. As a result, many existing occupations are either disappearing or changing significantly (see, e.g. Frey & Osborne, 2017; Goos, 2013; Pajarinen, Rouvinen & Ekeland, 2015). The World Economic Forum (Schwab, 2017) has estimated that at least five million jobs in the industrial economies will disappear by 2020. Such rapid changes are expected to have extensive societal implications that require the attention of educational policy-makers among others. Namely, the underlying process is reportedly causing polarization

in the income and skills of the workforce (Goos, 2013). Thus, understanding future competence demands becomes crucial from the perspectives of e.g. individual wellbeing and national economy (e.g. European Council, 2018; OECD, 2005). Future research utilizing interviews that focus on occupational competences with research participants from different industries would contribute to our understanding of the plurality of competence demands that education should be able to address now and in the future. This study can be used as a starting point for such future studies.

The plurality of competences that are required from individuals in today's world has been widely recognized (e.g. European Council, 2018; OECD, 2005). Therefore, it is imperative that citizens' voice is heard in the development of education towards the enhancement of competences that are regarded as key in the future (Barber, 1984). Lately, there have been concerns of the disengagement of the public from public education, which can be seen as a threat to the institution's legitimacy and survival (Fusarelli, Kowalski & Petersen, 2011). It is essential that research contributes to the interactive and iterative process between the public and policymakers so that common goals can be pursued via educational policies that are based on scientific evidence. This study contributes to the timely discussion of future education and competences by introducing novel knowledge for adults' competences. Furthermore, it complements the perspectives of national and international frameworks that guide educational policies by concentrating on the perspective of citizens.

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