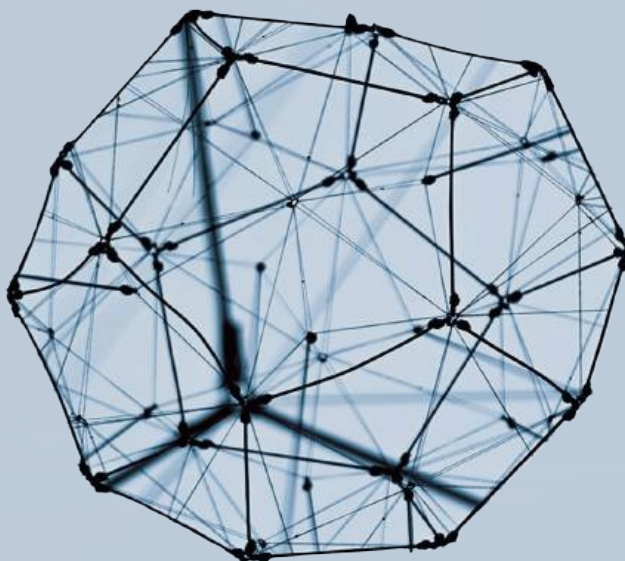


LEADING LEARNING NETWORKS IN EDUCATION



Theoretical Framework and School
Leaders' Perspectives across Europe

**MASARYK
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M U N I
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Leaders' Perspectives across Europe

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Introduction

Professional Learning Networks (PLNs) can help teachers overcome individual difficulties when faced with new expectations related to a changing and increasingly diverse context and in this regard, can support collective learning in schools. It appears that collective learning within schools is still limited and that PLNs between schools are not a common way of working in European schools. Research has shown that headteachers have an important influence on the extent to which PLNs in schools are initiated and sustained (Vanblaere & Devos, 2016).

In theory, as in practice, PLNs have different conceptualizations in different contexts, but there appears to be a broad international consensus that it involves a group of people sharing and critically interrogating their practice in a continuous, reflective, collaborative and learning-oriented way (Mitchell & Sackney, 2011; Toole & Louis, 2002). The goal of their actions is to enhance their effectiveness as a diverse group of professionals and to address challenges for the benefit of student learning, in a variety of contexts.

There is a growing body of evidence pointing to the essential role of headteachers in the core processes of learning and teaching in schools (Muijs et al., 2014). This is achieved by fostering adaptive strategies that answer the challenges of a changing and diverse context by means of a focused professional development school policy (Schelfhout, 2017). The learning and development of leading teachers requires specific competences of headteachers guiding and supporting these processes. Headteachers play a pivotal role in building capacity by promoting and supporting change processes and encouraging collaboration amongst staff. Research indicates that principals are working very hard, but so far spend little time in developing and supporting conditions that foster collaboration and joint learning in schools through networking (Grissom, Loeb, & Master, 2013; Schleicher, 2012). Among other things, headteachers are often insufficiently trained to know how to implement and support PLNs of teachers (Schleicher, 2012). The question is: what knowledge

and competences do headteachers need to organize and implement these practices of shared learning through networks?

It was the support of headteachers in managing networks of cooperation within and among schools that became the topic of *Leading Learning by Networking*, an international Erasmus+ project. Its main objective was to create and pilot-test training modules for improvement of theoretical and practical skills that headteachers need in order to construct, develop and maintain PLNs in schools. Particular attention was paid to the impact of PLNs on the development of teaching that promote inclusive education. This baseline study is one of the main outcomes of the project endeavouring to become a major pillar in the construction of the modules. It consists of three main parts: (1) a theoretical framework; (2) results of a qualitative survey; (3) results of quantitative research.

The theoretical framework outlines the purpose of PLNs in societal and educational contexts describing the main characteristics of PLNs and conditions for successful cooperation within and between schools. We explore the motivation and behaviour of teachers involved and, mainly study the role of headteachers and their tasks in the process of PLN creation, support and maintenance. Then we present the results of qualitative and quantitative research carried out in partner countries in order to recognise and describe headteachers' experiences with PLN management and educational and other needs, in this respect. The appendices in English present selected examples of good practice in partner countries/schools, the questionnaire and several analyses of the quantitative survey in more detail.

PART I

THEORETICAL PERSPECTIVES FOR HEADTEACHERS AND THEIR ROLE IN PROMOTING AND SUSTAINING PROFESSIONAL LEARNING NETWORKS

A. THE PROBLEM STATEMENT

1 Changing context, increased diversity

Society is changing rapidly which brings new demands for education, school teams and teachers to constantly adapt their practices (Elchardus, Huyge, Kavadias, Siongers, & Vangoidsenhoven, 2009; Struyf, Adriaensens, & Verschueren, 2013). Changing society is characterised by globalisation and diversity which requires new teaching approaches (OECD, 2016). Teaching practices should align with the needs of a diverse population based on a definition inclusive of identity, social background, gender, ethnic differences, social class, educational needs, world visions, opinions and religions. Not only do teachers need appropriate pedagogic and didactic skills to cope with diversity within the classroom, but they also need competences to communicate with a diverse set of parents and pupils. There is a growing diversity and complexity within education systems and leadership competencies are needed to cope with changes that fosters inclusive education. A 'one size fits all' approach to the leadership of learning and teaching is not appropriate for complex school environments. Teachers need to learn how to continually adapt their practices in a changing environment and this should be guided by the school leadership and the wider community.

2 Professional Learning Networks as a means to support educational change

Educational change depends on many interacting dimensions: school policy, motivation, structure, culture, assessment and headteachers are key to the success of these processes. Given the complexity within particular educational settings, change cannot be simply devolved to the

teacher level. The school, with stakeholders and partners, needs to create a learning organisation that provides the strategic direction and professional conditions in which teachers can reflect upon their practices and share and develop knowledge with colleagues. PLNs have been shown to provide opportunities for collective learning and development that supports educational change (Poortman & Brown, 2018). The LeLeNet project has identified PLNs as a means of supporting inclusive learning and development for a diverse educational workforce, enabling teachers to address the challenges of a diverse student population.

It appears that teachers require continuing support to handle evolving educational challenges derived from their changing cultural contexts. Teachers are said to lack the self-efficacy to handle diverse school populations, they feel isolated in the problems they face with diversity management and they complain about lack of support (Little, Leung, & Van Avermaet, 2013). Externally provided courses are often perceived to be too general and hard to transfer into practice. Furthermore, the content of off-site training often does not coincide with the specific needs identified by teachers. A lot of energy is put into educational initiatives that do not necessarily align with an isolated approach to professionalisation (Honig & Coburn, 2008). The need to develop the knowledge of teachers, particularly their disposition towards diversity management, is acknowledged as essential to ensuring the inclusive learning experience of students.

Headteachers must ensure that learning and class/school development structures adapt to meet the needs of a diverse school population. PLNs have been shown to provide conditions that enable teachers to support transfer and alignment of practices, according to the needs of the students (Slegers, den Brok, Verbiest, Moolenaar, & Daly, 2013). In the theoretical framework, our starting point is that teachers need to be able to adapt their practices and adjust their teaching approaches to deal with the impact of globalisation and rapid change. Teaching and learning can no longer be the responsibility of the individual teacher. To be successful in a changing and increasingly complex world, teachers need to work, learn and teach together to take charge of change, finding the best ways to develop and enhance young people's learning (Stoll, Bolam, McMahon, Wallace, & Thomas, 2006).

Research by Ballet and Kelchtermans (2009) within the Flemish context or by Van Veen, Zwart, and Meirink (2010) in the Dutch context, indicates that the professional development of teachers is still largely aimed at participating

in traditional activities with transfer of knowledge being the aim of the process. Professional development is often reduced to the notion of ‘refresher courses’ in which the external facilitation, short duration and knowledge transfer features of professional development occupy centre stage. Professional development has mainly involved attending activities that devote little attention to the translation of the content of these activities toward classroom practice or to new insights for colleagues. The research by Ballet and Kelchtermans (2009) further indicates that professional development is clearly influenced by school policy, but that this happens ad hoc, in isolated activities separate from the other school policy domains. The concept of the PLN in this project is one which facilitates engagement between colleagues and support by school leaders that promote student learning.

The arguments and evidence on how to facilitate professional learning, in ways that have a positive impact on results for students, challenge traditional ideas about professional development policy (Muijs et al., 2014). The notion that a cycle of inquiry and knowledge-building has, at its core, the concept of teachers as adaptive professionals, alert to situations where previous routines are not working well and seeking different kinds of solutions (Timperley & Parr, 2010). This conceptualisation of professionalism and development as one of adaptive expertise is gaining considerable attention within the research and professional community. As Muijs et al. (2014) contend, this requires more than individual teachers understanding how they need to think and act differently.

It also requires that schools become places for deliberate and systematic professional learning, where leaders are vigilant about the impact of school organization, leadership, and teaching on students’ engagement, learning, and well-being. Schools organized for learning in this way are usually referred to as having high ‘adaptive capacity’ (Staber & Sydow, 2002, p. 248).

A PLN is one way in which school leaders and teachers can collaboratively manage the needs and the skills to be responsive to change.

3 The important role of headteachers in initiating, supporting and sustaining Professional Learning Networks

There is consistent research evidence that membership in school networks provide opportunities for leadership development that can have an impact on individuals and their performance within their networks

(Earl & Katz, 2007; Hadfield & Jopling, 2006; Hope & Reinelt, 2010). In order to engage teachers in a PLN headteachers need to create conditions conducive to collaborative work because effective professional learning happens when teachers are supported and encouraged to investigate, challenge, and extend their current views, together. Headteachers will need the capability to initiate, support and ensure the sustainability of PLNs. Teachers cannot meet new challenges in teaching and learning alone, so everyone who has a place in the chain of influence, from policy to practice, needs to ensure that the right conditions for professional learning are in place (Muijs et al., 2014).

Headteachers can make an important difference in shared professional learning by creating focused professional development opportunities. It seems essential to integrate a professional development policy into a broader school policy, which includes and involves the teachers themselves (Timperley & Parr, 2010) if the purpose is to change their beliefs about professional development. An emphasis on shared responsibility for student learning within an integrated professional development framework is a powerful vehicle for change. Headteachers play a key role in the engagement of staff, creation and implementation of new practices and the sustainability of PLNs. Consequently, we have formulated questions that will be explored in the project:

- What can we learn from the theory of PLNs that will enhance the inclusivity of our practice?
- What is the role of headteachers in leading and supporting PLNs?
- What are the needs of headteachers when leading PLNs?
- How do headteachers formulate the main challenges related to PLNs in schools?

B. PROFESSIONAL LEARNING NETWORKS – A THEORETICAL FRAMEWORK

1 Conceptualization of Professional Learning Networks

The core idea of a PLN is that teachers are encouraged to discuss, question, reflect on and adjust their own professional practice in line with the aims and objectives of their organisation. This can start from sharing ideas, insights, and concrete and practice-oriented didactical approaches, in a safe

atmosphere, with a collective orientation on optimizing the learning processes of all students (Poortman & Brown, 2018). PLNs are about encouraging teachers to learn from and with each other in a group, building a group identity while linked to a common teaching context, with shared goals and a repertoire for interaction and possible change. In order to achieve the development of this collaborative culture, headteachers should be aware of the need to intentionally create learning networks that assure the level of deep learning necessary for practitioners to cope with diverse and ever-changing contexts. Professional Learning Networks (PLN) are progressively being promoted as mechanisms for knowledge creation that can make a positive difference to and for students (Muijs et al., 2014).

Networks bring together those with like-minded interests, either internally within the school or beyond the school, and create more than just opportunities to share good practices. The aim of professional learning networks can be to create knowledge in a specific context rather than only attempting to replicate or transfer practices from other settings. This becomes clear in the definition of networks emerging from the OECD Lisbon-conference in 2003:

Networks are purposeful social entities characterised by a commitment to quality, rigour, and a focus on outcomes. They are also an effective means of supporting innovation in times of change. In education, networks promote the dissemination of good practice, enhance the professional development of teachers, support capacity building in schools, mediate between centralised and decentralised structures, and assist in the process of re-structuring and re-culturing educational organisations and systems (OECD, 2003, p. 154).

According to the OECD (2003), advantages that can be gained from collaborative work within networks are: the reduction of isolation; collaborative professional development; joint solutions to shared problems; the exchange of practice and expertise; the facilitation of knowledge sharing and school improvement; and opportunities to incorporate external facilitation. Networks of teachers provide conditions for cultural and attitudinal change, embedding learning in the interactions and behaviour of a team of teachers. Networks also provide an opportunity to share leadership and responsibilities within and among schools (Earl & Katz, 2006).

Nonetheless, PLNs, in some educational contexts, have become a kind of ill-defined container concept similar to the related concept of the profes-

sional learning community (Sleegers et al., 2013). There are a number of ways in which collaborative working is conceptualised, such as, ‘communities of practice’ (Wenger, 1998) ‘networked learning communities’ (Katz & Earl, 2010), ‘teacher communities’ (Admiraal, Lockhorst, & van der Pol, 2012), ‘lesson study’ (Verhoef, Poortman, & Coenen, 2014), ‘teacher design teams’ (Binkhorst, Handelzalts, Poortman, & Van Joolingen, 2015) or subject-specific learning communities (Schelfhout, 2017). However, most of these models that include PLNs are related to overarching concepts of ‘team learning’ (Decuyper, Dochy, & Van den Bossche, 2010). The plasticity of the term ‘network’ means that it has been applied to a wide range of phenomena, both social and technological. In education, professional learning networks can imply an internal network of teachers from a single school or an external, nationwide extended school network (Chapman & Hadfield, 2009).

Although a wide array of network terminology and definitions of networks can be found in literature, there is no universally adopted definition of a professional learning network. PLNs may have different interpretations in different contexts, but there appears to be a broad international consensus that the concept involves a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way, operating as a collective enterprise (Toole & Louis, 2002). Consequently, we have adopted a working definition of a Professional Learning Network (PLN) as a term that can be used for any group that engages in collaborative learning with others inside or outside of their everyday community of practice. The goal of this shared learning is to improve teaching and learning in school or more widely, in school systems. Our goal is not to adopt one exclusive definition, because that might exclude important networks for learning used in different European contexts, but to identify important characteristics of networks that are beneficial to identify for the purposes of training head-teachers. The aim is to provide a guiding framework that can be used to understand essential developmental factors of PLNs in education. The essential characteristics of PLNs, as identified in the international research literature, will be discussed in the following paragraphs.

2 Essential characteristics of Professional Learning Networks

The literature explored commonly indicates that professional learning networks share five key characteristics, which appear to be intertwined

and operating together (Hord, 1997). These characteristics are identified by Stoll et al. (2006):

Shared values and vision

Sharing a vision and common goals (Stoll et al., 2006) provide a framework for shared, collective, ethical decision making (Louis et al. 1995). In the context of diversity management, this may mean that teachers have a shared vision on how a diverse student population (e.g. different gender or race) can be addressed, as both a strength and a challenge for teaching and learning in the classroom.

Collective responsibility

Members of a PLN consistently take collective responsibility for student learning (Louis et al., 2010). It is assumed that such collective responsibility helps to sustain commitment and enhances peer pressure for accountability, for example, to facilitate the capacity to cope with diversity in a fair and ethical way.

Reflective professional inquiry

Reflective professional inquiry refers to conversations about educational issues or problems involving the application of new norms, values and knowledge in a sustained manner (Louis et al., 2010). This includes a reflective dialogue (Louis et al., 2010) which is important to mutually developing, sharing and reflecting on the knowledge that is needed to cope with complex educational challenges, such as inclusive education. Such issues might address: joint planning and curriculum development (Stoll et al., 2006), seeking new knowledge (Hord, 1997), the conversion of tacit individual knowledge into shared knowledge through interaction (Fullan, 1991) applying new ideas and information for problem-solving and in addressing students' diverse needs (Hord, 1997).

Collaboration

Staff involvement in developmental activities, going beyond superficial exchanges of help, support, or assistance (Louis et al., 1995). Collaborative activity has been shown to be an important precondition to achieving shared purposes. The development of new approaches to teaching would be considered unachievable without collaboration. Professional learning networks demand that teachers develop grown-up norms in a grown-up profession in which difference, debate and disagreement are viewed as the cornerstones of improvement (Hargreaves, 2006).

Promotion of both group and individual learning

All teachers, with their colleagues, are learners (Louis et al., 1995). Collective learning is also evident in contextual knowledge creation (Louis, 1994), when a school learning network interacts, engages in serious dialogue, deliberates, communally interprets and widely distributes data and information through the network. In this way, the aim to promote learning at the individual and at the group level, is expedited.

Bolam et al. (2005) and Stoll et al. (2006) identify further factors that can influence the success of PLNs. These include:

- the development of a culture of mutual trust, respect and support among staff members and inclusive membership of the community;
- the community being school-wide, extending beyond teachers and headteachers; and
- openness through networks and partnerships that look beyond the school for sources of learning and ideas.

In the subsequent paragraphs, these hindering or promoting factors in the development of PLNs will be discussed in relation to the level of the network activities and appropriateness of the network structure. Also to be considered is how the teacher and the school leader, in their collective application of new ideas and approach to problem-solving and solutions, address students' needs (Hord, 1997).

3 Important factors for success at the level of network activities and structure

3.1 The level of the learning activities

In a large-scale innovation and research initiative in the UK, involving 137 networks (1,500 schools) between 2002 and 2006, Jackson and Temperley (2007) generated evidence about how and under what conditions networks can make a contribution to raising student achievement. This study identified characteristics of the networked learning activities that were shown to be important in enhancing collaborative learning within the network. According to Jackson and Temperley (2007), characteristics of successful networked learning activities can be arranged to encompass focus, design and orientation. These learning activities relate to:

Focus: Activities within PLNs need to be focused on shared, agreed, learning objectives. Networking activities need to have a clear focus on the goal

of learning and collaborative activities. This requires school leaders to negotiate and agree on the focus of the activities, maintain this focus within their own institutional agenda and embed the learning outcomes within the practices of their school.

Design: Networked learning activities also need to exhibit the characteristics of the learning design (learning from another; learning with another) and meta-learning. They need to be purposefully designed and facilitated to change and develop professional knowledge and practice in order to improve student learning. The activity design should include opportunities for shared leadership and open dialogue to all participants.

Orientation: Successful networked learning activities need to be oriented towards changes in practices that ultimately improve learning and development in students. Networking activities also need to be oriented towards knowledge sharing and knowledge construction that support the learning of a diverse community including staff, parents and students with different backgrounds and different educational needs.

Successful multi-level learning activities have a clear focus on the learning of teachers, with the aim of enhancing the learning of all students. By aligning the networked learning processes of teachers and students and by having shared leadership that promotes and supports that learning, within the activities, there is evidence that networks can succeed in accomplishing their multi-layered objective of fostering teacher learning and raising student achievement (Jackson & Temperley, 2007).

3.2 The network structure

In a recent meta-analysis, März et al. (2018) investigate how, when and under what conditions professional networks can contribute to sustainable educational reform. This systematic analysis provides an overview of innovation-specific, individual, structural, relational and leadership conditions, whereby the role of professional networks is included as part of the relational conditions across these networks. The paper recognises that relational conditions can reinforce but also weaken sustainable innovation. März et al. (2018) identify the conditions of professional networks that contribute to reform identify as:

The degree of formality of the interaction: Formal as well as informal relations or structures are both needed to ensure sustainability. Formal interactions are important, especially in the beginning phase of an inno-

vation trajectory, because they create opportunities for interaction. Informal relations need to grow overtime as they will potentially lead to lasting sustainable innovations (Coburn, Penuel, & Geil, 2013).

The strength of the interactions: Networks with strong ties are characterized by frequent interactions and close proximity among members. Strong connections facilitate the transfer of complex, non-routine knowledge, the cooperation between members, collective problem solving and diffusion of innovations (Daly & Finnigan, 2010; Adams & Gaetane, 2011; Coburn et al., 2012). Weaker ties, on the other hand, are important for the diffusion of ideas, information and advice.

Depth of interaction: Teachers' social networks vary considerably in the depth of interaction (Coburn & Russell, 2008). Interactions can be rather superficial, for example, when teachers exchange information about how students are doing or more profoundly, for example, when they investigate the nature of student learning in a subject area. According to Adams and Gaetane (2011), it is important that in the early phase of an innovation process, teachers have ample opportunities to talk about the practical aspects of the innovation. However, it is very important that the network aims at deeper interactions since they allow a more profound exchange of knowledge, ideas and norms pertaining to the innovation.

Availability of expertise: Access to expertise facilitates the sustainability of an innovation. In the professional learning network, it is also important to stimulate the development of expertise and the exchange of that expertise among teachers (Coburn et al., 2013). This would point to the importance of experts participating in the PLN, sharing and discussing their expertise and the joint construction of expert knowledge.

Network steering: Daly and Finnigan (2011) show that highly centralized network structures are effective for the diffusion of routine non-complex knowledge and information such as schedules, but impede the effectiveness of groups engaged in complex tasks, such as high-level communication, intra-organizational knowledge and systemic change. They point to the importance of 'boundary spanners': well-connected individuals in the network who can connect to other actors.

Width of networks: Teachers need to cooperate with their colleagues in their school. However, ties that transcend social and organisational boundaries are also important for accessing information that may not be

available in one's proximate environment. Teachers must have opportunities to exchange ideas and cooperate in networks that transcend their own subject group or school (Coburn et al., 2013).

The synergistic benefits of these six characteristics are likely to be the greatest in their convergence (März et al., 2018). Wenger et al. (2011) recognise the need to understand the network landscape and identify five values promoted through networks. *Immediate* value refers to the importance of the interactions and activities of that community. Listening to others and the sharing of stories can expand one's imagination or challenge perspectives. *Potential* value is the realisation that the dissemination of knowledge can also be intensified through experiences perceived outside of direct networking, by retrospectively looking back at experiences. This benefits personal and social development and the development of the ability to learn. *Applied* value can be viewed as using the knowledge learnt within a community by taking the initiative and adjusting its form to use in varying environments. *Realized* value is concerned with the significance of the action taken and its outcome on those it was intended for. Finally, *reframing* value is the notion that the amalgamation of learning through social interaction in a community lays the foundations for re-examining achievement and how it is structured. März et al. (2018) also point to the importance of multi-layered partnership. Sustainable innovation requires support on different levels: the policy-level (district, government), the school level and the teacher level. In the next section, we discuss factors that might influence the participation of teachers' in PLNs, regardless of the levels of success and structuring of the organisation of the networks in place.

4 Important factors for success at the teacher level

The success of PLNs is often indicated as being based on teachers' willingness to participate, their willingness to cooperate with others and their motivation. In terms of the development of a network, one starting point is that PLNs grow from the bottom up, without pressure or obligation from above (Hall & Hord, 2006). Consequently, PLNs in development-oriented systems are heavily dependent on teachers being self-motivated (Sutherland, 2004). Why are some teachers prepared to function in a PLN and why are others not? Motivation can be very different among teachers and is in part dependent on the purpose of the network.

4.1 Teachers' motivation to participate

Self-determination theory (SDT) differs from other motivation theories in that it emphasizes the quality of the individual's motivation rather than the quantity of motivation (Vansteenkiste, Lens, & Deci, 2006). Traditionally, motivation psychology makes a distinction between intrinsic and extrinsic motivation. Differences in the quality of motivation are related to the extent to which extrinsically motivated behaviour is regulated autonomously or in a controlled manner. Behaviour regulation indicates why people do things, or in the specific case pertaining to networks, why teachers are or are not motivated to participate in a PLN. This variation might be explained because teachers feel that they have to participate, for example, because the headteachers or local stakeholders expect them to do so (controlled regulation). It is also possible that teachers participate because they would feel embarrassed if they don't (introjected regulation), because they can see the importance of a PLN (identified) or because they like working together with colleagues in a PLN (autonomous). SDT states that autonomous motivation is always of better quality than controlled motivation and will lead to the perseverance of those involved, even when things go wrong (Vansteenkiste, Lens, & Deci, 2006).

4.2 Teachers' attitude

The cognitive and affective components of teachers' attitudes with regard to membership of PLNs are also an important motivating factor. An attitude is a complex combination of personal characteristics, standards, values, feelings, ideas and opinions, which determine how a person behaves in a particular situation (Krathwohl, Bloom, & Masia, 1971). The multi-component model advocated by Sanbonmatsu and Fazio (1990) identifies two components: a cognitive component and an affective component. The cognitive component, applied to PLNs, concerns beliefs, models, preferences and other aspects, which determine what a teacher perceives is the purpose and value of PLNs. The level of involvement will be dependent on the extent to which teachers believe that working within a PLN is a worthwhile activity that constitutes a valuable element of ongoing professional learning. The affective component is the part of the attitude in which teachers feel an emotional attachment to the focus of the network and make the choice whether they will engage in a PLN on the basis of what they feel. This component concerns to what extent a teacher feels comfortable in a PLN and how enthusiastic a teacher is about working within a PLN or if an individual teacher experiences feelings of anxiety about their involvement (Sanbonmatsu & Fazio, 1990).

However, conditions for creating well-functioning learning communities are not only situated on the micro-level of team learning but also on the intermediate meso-level of the school and the macro-level of communities within schools, education sectors and government, each with their own possible interventions and with specific interactions amongst them. Headteachers have been identified as important intermediaries between these levels and key actors in initiating, promoting and sustaining a PLN. It is also important that teacher learning and knowledge sharing within PLNs are institutionalised to prevent an innovation, supported by a PLN, from disappearing (Chapman & Hadfield, 2009; Leenheer, 2002; Verbiest & Vandenberghe, 2002).

The school leader has the responsibility to develop a culture that fosters the development of a PLN. Supportive relationships within school teams are an essential condition to encourage reflective professional inquiry and collaboration needed for learning and knowledge creation (Hall & Hord, 2006; Louis et al., 2010). Furthermore, headteachers hold an important role as educators, since they will have to focus on learning on all levels. Finally, headteachers need to be committed to taking individual roles as architects and organise time and space for teachers to collaborate. The next section will fully elaborate on these different roles of headteachers and their leadership teams.

5 Important factors for success at the headteacher level

It is difficult to see how a PLN could develop in a school without the active support of leadership at all levels. Leadership is therefore an important resource for PLNs, in terms of headteacher commitment and shared leadership.

5.1 Leadership practices

Research has shown that professional learning communities (Stoll et al., 2006) and other forms of teacher teams (Vangrieken, Dochy, Raes, & Kyndt, 2015) do not arise naturally or without deliberate purpose. It seems that many teachers prefer working on an individual basis rather than working together which is not a conducive starting position for developing this kind of initiative. Successful developments of different forms of learning networks will depend on the way headteachers embed these initiatives into their school policy and school structures (Stoll et al., 2006). Hargreaves (2006) argued that the expected presence of collegiality in PLNs specifically invokes institutional and structural conditions, which

emphasise the important role of the school leader. There is a need for deliberate support of this endeavour, within an appropriate environment that fosters collaboration.

Shaping this kind of professional development model cannot be done within a traditional top-down hierarchical model of leadership. To be able to reach this goal, a specific kind of inclusive, cooperative leadership is expected from colleagues. Crucial to success is a strong focus on improving core educational processes which take place in schools as a basis for consistent school development (Hallinger, 2003) and the use of participatory practices to assure inclusive educational processes. Creating school and network structures in which different forms of learning communities are implemented and fostered by appropriate development conditions are an essential starting point (Schelfhout, 2017). As part of these learning communities, a bottom-up school development focusing on educational processes for students and staff, will be essential. Creating opportunities for the headteacher to delegate tasks, share responsibility across the school leadership team and to induce more involvement of teachers in well-defined work groups, is a required practice. Different forms of teacher teams and deliberate encouragement to interact could contribute to these goals (Schelfhout, 2017). Facilitators of teacher teams can become a kind of 'liaison officer' for the school leader, which will happen in two ways. Firstly, these coaches of the desired process will gradually start to encourage a group of teachers to work on and improve certain aspects of their educational tasks in an informed way. This can happen in a self-regulated way in that the group, as a team decides which topics they will work on. A shared sense of purpose will be created by the coach in respect to how expectations are set and monitored. Process coaches do not only create encouraging tasks but also coordinate and sometimes even steer said tasks. Secondly, these coaches can become important contacts for headteachers. The headteachers will be able to:

- ask the process coaches for advice on specific (and growing) expertise in a certain field (the focus of the teacher team);
- monitor the progress made in these teacher teams, based on results and data jointly developed within the teacher teams;
- take into account the results and conclusions defined by the data stemming from the different teacher teams: to discuss with the process coaches new initiatives to be taken on by the team, in line with school policy and school development;
- coordinate the interaction between and among the different forms of teacher teams.

In this way, we can gradually arrive at an elaboration of the concept of 'shared instructional leadership' as put forward by Marks and Printy (2003) in which different lines of thought related to school leadership converge. The concept of instructional leadership, where the school leader focuses on steering primary educational processes, is realised through the collaborative work of the teachers (Hallinger, 2003). In this convergence of leadership models the directive and top-down elements of the model have been broadened and deepened with insights from the research on transformational leadership (Leithwood & Jantzi, 2006) and shared leadership (e.g. Leithwood, Harris, & Hopkins, 2008). The concept of transformational leadership requires the school leader to create a vision that inspires the school staff. The process focuses on optimising individual and collective processes of problem-solving and learning. In this way, a culture of professional collaboration is created in which teachers are encouraged towards continuing professional development and common problem solving (Leithwood & Duke, 1998). Therefore, transformational leadership is rather focused on capacity building for school development and less on direct coordination, control and supervision of the instructional processes (Verbiest, 2014). Criticism of the concept of transformational leadership is that transformational leaders do not always have an explicit focus on the primary processes of teaching and learning. Strong transformation-oriented leaders, therefore, could hinder their teachers in implementing their teaching tasks (Marks & Printy, 2003).

In shared leadership, the school leader recognises leadership activities in an interactive web of different leaders and followers in different situational constellations (Hargreaves, 2006). Marks and Printy (2003) integrated these different lines of research on school leadership into an overarching concept called 'shared instructional leadership'. Verbiest (2014) indicates that in this form of leadership the school leader works by stimulating the involvement and development of teachers and cooperating with teachers to optimise the primary process. The headteacher is not the only one leading this primary process but rather guides the teachers that lead the primary process. We assume that the successful development of a PLN will depend on the way in which different conditions are met, at the school and teacher levels. In summary, within schools, there is the need for

- shared goals and visions;
- shared leadership;
- a culture of inquiry and;
- supportive relationships and trust.

Furthermore, we also suggest that teachers need to be motivated and have positive attitudes towards involvement in a PLN, given the need for membership to be voluntary.

A headteacher can have a positive impact on both conditions for the success of a network at the teacher and school level. In the case of this project, the important question is: what are the competencies needed for establishing the roles of headteachers in a networking school?

5.2 Three essential roles for headteachers

On the basis of research undertaken by Verbiest and Timmerman (2008) on the roles of the school leader in the development of professional learning networks, a significant range of skills and knowledge required to run successful networks can be grouped into three roles: The role of ‘culture developer’ means support for the formation, dissemination and embedding of shared values, views and standards in the service of an inclusive professional learning culture. The role of ‘educator’ means fostering the intensity and quality of the individual and collective learning processes of team members so that profound learning takes place. Finally, the role of ‘architect’ means building structures, processes and systems in schools and amongst schools that enhance personal and interpersonal learning capacity development. In Table 1 we combine the roles proposed by Verbiest and Timmerman (2008) with school policy factors that have with a clear impact on the development of PLNs as put forward by Stoll et al. (2006) and Stoll (2010).

Table 1: The key roles of headteachers on creating PLNs

<p>The role of ‘culture developer’</p> <ul style="list-style-type: none">• Leaders have to be committed to creating professional learning communities (Mulford & Silins, 2003).• Leaders will have to create a learning culture (Fullan, 1993).• Leaders will have to create a climate of trust and positive working relationships (Louis et al., 1995).
<p>The role of ‘educator’</p> <ul style="list-style-type: none">• Leaders will have to focus on learning on all levels (Leithwood & Jantzi, 2006; Louis et al., 1995).• Leaders will need to be role models (Stoll et al., 1995).

The role of ‘architect’

- To facilitate exchange between teachers, the school needs to be organised to allow time for staff to meet and talk regularly (Louis et al., 1995; Stoll, Fink, & Earl, 2005).
- Opportunities for professional exchange need to be further facilitated by physical proximity (Dimmock & Walker, 2004).
- To promote, sustain and extend PLNs, schools will need external support in the forms of networking and other partnerships (Leithwood, Jantzi, & Steinbach, 1998).

The headteacher as culture developer

Fullan (1992) argued that any attempt to implement new practices, such as a PLN, which neglects school culture is doomed to fail because school culture influences teachers’ readiness for, or resistance to, change. Thus, an important condition for PLNs is that there is a learning culture within the school. Fullan (1992) also suggests that a culture that enhances learning acknowledges the different interests of all stakeholders, focuses on people rather than systems, makes people believe they can change their environment, makes time for learning, takes a holistic approach to problems, encourages open communication and believes in teamwork.

Research has also shown that a learning environment requires a culture of trust and supportive relationships (Bryk & Schneider, 2002). Leaders will need to create a climate in which teachers trust each other, are not afraid to admit their mistakes and/or ask for help and where positive working relationships exist (Louis et al., 1995). Leaders and teachers need to be willing to question their assumptions and practices and possibly adapt their personal framework of long-held norms and beliefs. Due to a changing context there may be a need for approaches to learning to also change, in order to meet the needs of a dynamic society. It is essential that schools serve the diverse needs of their community and embrace opportunities to explore new cultures, new talents and new approaches to learning. PLNs can offer the conditions in which teachers can learn together, build and exchange knowledge and ideas and a medium where they share advice within a safe learning culture (Fullan, 1992).

The role of educator

As stated above, leaders will have to focus on learning on all levels (Leithwood, Jantzi, & Steinbach, 1999; Louis et al., 1995). Headteachers need to focus created network activities on enhancing teacher learning in

order to broaden and deepen their professional knowledge, skills and attitudes. The final aim is enhancing the learning of all students, no matter their gender, race, culture, social background or educational needs. It is important that the school leader functions as a role model in this regard.

The role of the architect

Important preconditions to implement and sustain PLNs are resources such as time, space and opportunity to cooperate. A headteacher who wants to support PLNs in school and beyond also needs to provide the right organisational structures that allow teachers to meet and work together. To facilitate exchange between teachers, schools need to allow time for staff to meet and talk regularly (Louis et al., 1995; Stoll, Fink, & Earl, 2005). Opportunities for professional exchange need to be facilitated by physical proximity (Dimmock & Walker, 2004), digitally, or a combination of both forms of communication.

As an architect, the school leader not only needs to construct facilitating structures within the school but will also need to actively build bridges with external partners (Leithwood, Jantzi, & Steinbach, 1998; Rosenholtz, 1998). Professional Learning Networks comprise of ties within schools and across schools, which are important from a learning perspective. Headteachers cannot consider their schools an island but rather they need to be responsive to external partners and networks to cooperatively learn and develop a joint response to the challenges of a constantly changing environment.

Summary

This theoretical framework indicates that Professional Learning Networks (PLNs) may have shades of interpretation for varying purposes they fulfil in different contexts. However, there does appear to be a broad consensus that a PLN consists of a group of people sharing and critically interrogating their practices in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way (Mitchell & Sackney, 2000; Toole & Louis, 2002). This type of collaboration can facilitate inclusive practice. The theoretical framework identifies key characteristics of PLNs, including shared values and vision, collective responsibility, reflective professional inquiry, collaboration, the promotion of group and individual learning and shared leadership. Discussion of enhancing factors at the network level (*formality, strength, depth, availability of expertise, width*)

learning activities (*focus, design, orientation*) and the teacher (*motivation, attitude*) are indicative of the areas of knowledge and understanding required by leaders to ensure the success of PLNs. Finally, three important roles are identified for the school leader to implement and sustain PLNs, taking into account these important conditions at different levels. These roles will be used as guiding principles for the development of training modules for headteachers.

PART II

HEADTEACHERS EXPERIENCE AND NEEDS FOR LEADING PROFESSIONAL LEARNING NETWORKS – QUALITATIVE RESEARCH

In phase two of the project, our objective was to determine the perceived needs of school leaders in relation to their existing roles within their schools and associated Professional Learning Networks. Our intention was to gain insight into the experience and competence of these leaders and how they understood the purpose and nature of their roles and professional development requirements in this context. Five of the project team institutions identified five cases and undertook in depth interviews with headteachers that were recognised as having experience working across networks. The intention was to base the construction of the modules on both the theoretical framework and the practical knowledge deduced from the evidence gathered from the practice setting. These two sources enabled the team to develop the questionnaire used to widen the evidence base, discussed in detail in the next section of this document. In this part of the baseline study we present the qualitative case study interview design, the results of the analysis of data and the developing recommendations for the construction of the questionnaire and subsequently, the training modules.

1 Methodology

The aim of collecting data by conducting interviews with headteachers from primary schools (ISCED 1 and 2) is to provide qualitative evidence gathered from experienced practitioners and utilise their responses to gather wider detailed views from school leaders about their areas of leadership confidence and the areas for enhancing leadership competence. Our intention was to focus on networking and the potential impact they have on the inclusive nature of education, engendered through the collaborative practice of working in networks. We hoped to utilise the evidence from the experienced practitioners to apprise and develop this specific topic of inclusion but it was not addressed by respondents in all partner countries involved in the case study, but only by those for whom

diversity and inclusion is crucial. We collected examples of good practice in the field of school and teacher networking with the help of the headteachers involved in the project (five in each country except (ES)). Some of these cases are added as appendices to this document.

In February and March of 2018, interviews were conducted with headteachers in 5 countries (excluding Spain). The results presented in this section will serve as a basis for the questionnaire design. They will also initiate the consultative process to inform co-creation of the training modules. The criterion for selection was that the teacher had a certain level of experience with leading networks known to the partner institutions. Altogether, 14 group or individual interviews with 29 headteachers were conducted. A semi-structured interview protocol was used, and field notes were taken. Participants answered open-ended questions in detail. The project team agreed that the interview process could be conducted with individuals or in groups.¹ SE, BE and SI conducted group interviews, while CZ and UK conducted individual ones. We used the pre-agreed interview schedule based on the team's critique of the theoretical framework, with the following topics:

- linking networking with teaching and learning;
- focus of topics for networking;
- teachers' motivation for networking;
- the role of headteacher in networking;
- the benefits of networking;
- headteachers' strategies for supporting and sustaining networks;
- limits, challenges and headteachers' needs.

The analysis follows the interview schedule. The terms “networking” and “collaboration” were used almost synonymously by respondents, therefore we decided to use “networking” as a general overarching term in this analysis.

2 Results of the interview analysis

2.1 Linking networking with teaching and learning

Strong links between networks and teaching and learning are evident from all reports and in three of the five reports, current areas of focus were specifically identified by the interviewees. BE partners reported that networking has not been a common practice in their schools as of yet

¹ Abbreviations indicate particular country: BE – Belgium, CZ – Czech Republic, SE – Sweden, SI – Slovenia, UK – United Kingdom.

while SE partners claimed that “networking within a school is by far the most common form of networking.” CZ and SI partners provided a more extended analysis in this section. With headteachers in CZ, three broad categories that illustrate the links between networking and teaching and learning were identified: networks aimed at developing specific competencies of students, networking aimed at the development of curriculum and teaching methods and networking to support the learning culture of schools and the work of headteachers. In CZ² for example, teachers described the design and implementation of existing workshops for students and their parents. They *“meet at training and they have agreed that they could organise something like this because of the opinion that children did not have awareness of crafts.”* They also report on *“networks of teachers for science subjects and humanities”* (CZ5) and about sharing experiences among partner schools where *“teachers share experience, they attend lessons of other teachers to find out how to work with materials”* (CZ1). Headteachers currently work in relatively stable networks in which they share experiences and provide consultations as *“schools have similar problems, so they provide mutual inspiration to each other”* (CZ1).

SI headteachers referred to the importance of feedback among teachers for professional learning: *“It is very important that teachers get feedback about where they are but also the approval of their practice. Critical judgement leads to improvement of their work”* (SI1). Similar to CZ, SI headteachers pointed to the importance of subject groups and to their “cross-school cooperation” (SI5). SI4 linked networking to quality of teaching: *“You can develop your practice most effectively if you can learn from each other.”* On the basis of this strong response we can conclude that the interviewed headteachers are very supportive of networking among teachers, within and among schools, as they realise the potential for professional development.

2.2 Focus of topics for networking

Our partners in the 5 focused countries reported a variety of topics in connection to networking. Some topics were quite specific, such as multicultural topics (CZ), developing digital literacy (SI), networking aimed to support school specialisation (SE, UK, CZ), while other topics reported were rather general, such as networking to enhance professional learning in the (UK). Therefore, it was rather challenging to compile a fully meaningful categorisation.

2 Abbreviation and numeral indicate respondents from particular countries.

We identified the following areas of network focus:

- **development of student competence**, i.e. crafts (CZ), use of technology in learning and teaching (UK, SI), adapting teaching methods to all students' needs (SE), programmes to strengthen students' responsibility for their own learning (SI), and others;
- **development of curriculum and teaching methods**, i.e. improvement of formative and summative assessment (SE), development of mastery in maths (UK), "complete reconstruction of inadequately organised teaching" – block teaching (CZ), developing new teaching courses (BE), developing programmes for gifted students (SI), and others;
- **school leadership development** which is explicitly mentioned by SI, UK and SE partners and implicitly by the CZ and BE partners;
- **supporting school specialisation** reported by CZ, UK and SE partners.

In some cases, the aims and benefits of networking are mentioned in this section, such as "great benefits in terms of professional development and joint learning" (UK3) or, "very effective cooperation and a lot of mutual learning" (SI4). Several other topics were identified in most of the case studies that are related to specific context-based projects.

2.3 Teachers' motivation for networking

The responses of headteachers to questions about teachers' motivation for networking indicated different motives for involvement in networks. While very little was said about challenges in this area, our SE partners reported that "headteachers have to work harder to motivate some of their teachers in lower secondary (grade 7–9)" and our BE partners stated that "it is not easy to motivate teachers to join PLNs". The theoretical framework identified factors of autonomous, as well as controlled motivation in some settings. The categories are presented according to this distinction.

Factors of controlled motivation

- **the growing need for co-operation in education** - i.e. new trends in school policy, political and developmental trends, such as the requirement for inclusive education (CZ), new trends in school policy (UK), "as a response to the growing external influence on schools – of parents or ministry" (SI);
- **social pressure** – "as more and more of the schools are being pulled in [to some of the powerful networks] all of the time" (UK), a similar issue is reported by the CZ partner;

- ***self-protection*** – to meet certain external requirements (UK) or to protect the school against closing down (CZ): “The impulse was a teacher response that the school could become a sinking ship and they had to mobilize” (CZ4);
- ***financial motives*** – in the case of UK and CZ.

Factors of autonomous motivation

- ***improvement at the school and the personal level*** – was reported by all partners: in most cases, it can be understood as being initiated by intrinsic motivators, such as developing better opportunities for children (UK4), developing stronger professional relationships among teachers (SI), or building self-regulated networks to develop the curriculum for certain groups of students (SE);
- ***sharing and developing teaching practices and thus building new knowledge*** – in professional dialogue (UK), for a “changing generations of children” (SI3), “by visiting each others’ classrooms” (SE1);
- ***teachers’ self-actualisation leading to higher professional confidence*** – by developing new skills, “being aware that they are not alone in the problems” (SI5), being aware that “collaboration is the only way forward for the core of leadership group” (UK1) or by being an inspiration for other teachers inside and outside their schools (CZ).

2.4 Role of headteachers in networking

The overall finding in this section is that the headteachers should ***primarily be the instructional leaders*** by taking up the role of an expert in the subject of collaborative networks. They need to be knowledgeable about the purpose of the network and ensure the strategic direction of the activity by asking the right questions, offering suggestions related to content, and giving feedback related to the content. Very often respondents referred to a headteacher’s role as a motivator as well as a facilitator of networking in the school and among schools. “One cannot expect the networking will happen in a self-explanatory way” (SI2).

The answers are clustered into four categories:

- ***initiator*** – by proposing projects, starting the process, having a clear vision about learning within the school, “bringing good examples to school” (CZ2);
- ***motivator*** – in the case of the UK, this type of role is related to coaching culture, in CZ and SI, the headteacher as a role model is emphasized;

- **facilitator** – i. e. creating the right conditions and structures when it comes to networks on both the internal and the external level (SE, CZ, SI), “getting teachers’ to feel ownership and be confident in their shared capacity to improve” (UK1);
- **controller** – (by monitoring) such as being a member of a monitoring committee (UK), reporting at meetings, reading reports (CZ), “constantly being there and evaluating progress” (SI3).

Additionally, the headteacher in SI5 understood his role as “a connector among different school initiatives”, the BE partner added the role of communicator in terms of communicating “what is the goal of the networking and how this is aligned to the ‘bigger picture’”. UK partners pointed to the relational nature of networking.

2.5 Benefits from networking

Respondents revealed several benefits related to networking. They were very similar, with nuanced answers. The key benefit for a school as a whole was reported as enhancing and/or developing the learning school culture: “Networking of teachers within schools has a strong impact on school climate (it strengthens relationships among teachers as well as relationships between the teachers and headteachers) and this shapes the culture of a learning school” (CZ). Networking with the purpose to improve and develop learning” (SE) is a key motivator for network activity. Most benefits listed in the reports can be divided into two clusters: namely, benefits for teachers and benefits for students.

Benefits for teachers

- **developing professional practice** – such as methods of work (didactics) (CZ), “improving quality of teaching by developing appropriate teaching methods” (SI3), developing formative assessment (SE);
- **sharing knowledge and skills** – i.e. “how to pass on their knowledge and skills while passing on experience and sharing their knowledge in a network of colleagues” (CZ), common problem solving (SI);
- **developing a common professional language** – “when it comes to lesson plans, instructions to the students or teacher interpretation of documents” (SE); “what counts for one teacher also counts for another teacher” (BE);
- **acting beyond the classroom walls** – “leaving the classroom – teachers visiting colleagues” (SE), “developing creativity by networking among schools” (SI).

Benefits for students

The benefits listed below are closely related to the benefits for teachers, especially in regard to the development of their professional practice, with a more indirect impact on students:

- ***experiencing new teaching approaches*** – such as collaborative learning (SI), assessment for learning (SE), adjustments for age (UK), better alignment of teaching methods for assessment (BE);
- ***more motivated teachers, more motivated students*** – “intrinsic motivation is important for both” (SI1);
- ***using external resource experts*** – for the benefit of students, i.e. in inclusive education (SE, CZ), specific projects (SI).

CZ partners emphasized personal student development, such as tolerance for other cultures, realising priorities in career orientation and establishing better relationships among themselves and with teachers. SE partners even pointed out improved results in languages. Additionally, benefits for school management, parents and community were mentioned in the CZ report.

2.6 Headteachers’ strategies for supporting and sustaining networking

It was challenging to distinguish between the role of teachers in networking and their role in supporting and sustaining said networking. In fact, “creating conditions for networking” is the common denominator under this heading. At a more specific level, the following categories were drawn out:

- ***fostering school culture for networking*** – by “sense making and sense giving” (SE), “internal climate of the school and school culture for the success of networking” (CZ), “fostering a culture of mutual professional respect” (UK), “being there and encourage” (SI);
- ***being a role model*** – by participating in networks (SE), “being there” (SI), “acting as a role model” (BE);
- ***initiating networks*** – such as “initiating peer observations” (SI), “building a team at school” (CZ);
- ***sustaining networks*** – by monitoring and evaluation (SI), aligning the vision (BE), “systemic quality work” (SE3) and “support during a long period” (SE5).

Human resource management, with the focus on staff development was also mentioned in the reports as a general condition for networking.

2.7 Limits, challenges and the needs of headteachers

Limits and challenges are related to preconditions for networking. It is interesting that the involvement of the headteacher in school networks

was seen as a precondition for successful networking in schools, although no specific question was posed to the respondents.

The following categories were identified:

- ***building a culture of collaboration*** – i.e. BE and SI partners stated that “teachers are not used to co-constructing knowledge” while UK partners pointed out the “need to work on a relationship based on mutual respect”;
- ***headteachers’ knowledge*** – in this area, it was explicitly mentioned by CZ, SI and SE partners; it seems that networking among headteachers could be one of the significant sources of knowledge and experience, also leadership style seems very significant for networking (SE, SI, CZ, BE);
- ***resources*** – i.e. lack of time and space caused by teachers’ overload and/or teachers having a number of different projects;
- ***teachers’ motivation*** – related factors such as lack of trust among teachers (SI), percentage of teachers on short term contracts (SE), understanding the importance and benefits of collaboration (SI, UK, BE), unpleasant past experiences (CZ);
- ***policy support*** – including financial resources (CZ), or “building infrastructure to make sure that they are secure in their own school as well as being able to support schools in their alliance “(UK1)”.

The limits and challenges are related to the setting and dynamics of specific schools, both locally and nationally. The categories identified are experienced to a different extent in each setting.

Summary

The overview of the interview evidence describing the situation related to school networking indicates that networking within and amongst schools is a relatively common feature and a growing trend in all partner countries. It seems that the complexities of challenges and changes have an impact on and are seen as contributing to this development. It is also evident that networking is understood as an important strategy to promote school development and an underpinning principle supporting the need for teachers and schools to learn from each other. In some cases (CZ, SE), collaboration among schools and with external agencies was explicitly worded in official documents.

School networks were often initiated by external agencies as a response to current challenges. Students' marks are one of these challenges. SE partners, for example, referred to declining results on PISA, and our UK partners specified a decrease in "measured performance (Examination and SATS results and Ofsted inspection)." BE partners also reported on external pressures for closer collaboration amongst schools, such as a requirement for developing a number of transversal competencies among students and students who will require more cross-curricular and project-based work. Similarly, CZ partners stated that "*networking and mutual support are ways in which Czech schools can react to the requirement for inclusive education.*" In Slovenia, school networks have become "ever more popular with educational politicians" in the case of initiating changes and/or large-scale reforms in different areas.

The management of change or implementation of innovative projects are seen as the most common triggers for networking, such as Networked Learning Communities (UK), European Social Fund and other EU-funded projects (CZ), or Networks of Learning Schools (SI). There is also strong evidence that school-based projects focused on school improvement by networking are common, over different time frames, in all partner countries. They have been developed as a response to challenges schools or nations are facing. Inclusive education was mentioned by CZ and SE partners. In SI, networks have been employed in way of initiating and piloting large-scale reforms, such as modernisation of vocational education, curricular and organisational reform of basic education, as well as setting and implementing a national system of evaluation of quality. Different actors initiate and support networks in partner countries, at the national level such as the National Agency for Education (SE), the National College for School Leadership (UK), the National School for Leadership in Education and National Education Institute (SI), and the Ministry of Education, Youth and Sports (CZ). In the case of specific initiatives, other agencies and organisations were mentioned by CZ and UK partners. BE partners did not report on recent specific support but they do still work with local education institutions and organizations.

The analysis results of the interview evidence indicate that headteachers are very much inclined to networking amongst teachers (within and also amongst schools) and they realise the potential for professional development. They reported a variety of networking topics, such as the development of curriculum and teaching methods, the development of student competencies and the development of school leadership. According to in-

terview responses, teachers were motivated to participate in networking both autonomously and by controlled mechanisms. Headteachers, therefore, have to be motivators as well as facilitators of networking, within and amongst schools, using different strategies such as fostering school culture for networking, being a role model, and initiating and sustaining networks.

Headteachers reported that despite being aware of the potential of teacher networking for professional development as well as for school improvement, they also described that they face several challenges in their practice. These are mainly related to establishing preconditions for teacher networking. One of these challenges pertains to headteachers and networking itself. The interviewed headteachers felt that they lack adequate knowledge about networking and networking topics. They also expressed that the collaborative culture is deficient in schools and that there is also a lack of resources, lack of teacher motivation and lack of policy support. The analysis of the interviews indicates that the following topics can be included in the training modules:

- the nature and benefits of networks for improving teaching and learning;
- (organisational) conditions for effective networking;
- headteachers' role in initiating, developing and sustaining networks;
- the motivation for networking at the headteacher and the teacher level;
- building and fostering the culture of networking (related to the previous items).

PART III

HEADTEACHER EXPERIENCE AND NEEDS FOR LEADING PROFESSIONAL LEARNING NETWORKS – QUANTITATIVE RESEARCH

On the basis of the project results presented in Part I and II, a questionnaire was developed (see Appendix 2) and distributed to headteachers in all six partner countries, with two purposes. Firstly, to get an overview of the views of a wider group of those leading learning networks, regarding teacher networking in schools and across existing networks, with a focus on the role of the school leader in this process. Secondly, to identify the developmental needs for headteachers to successfully fulfil the complex role of leadership within these networks. This report consists of a short description of the methodology used, a presentation of the results and an analysis of the evidence gathered. It also presents the findings concerning the need to meet training needs for headteachers in professional development programmes.

1 Methodology

The target group for the questionnaire was headteachers in compulsory school systems in each participant country. In all participating countries, headteachers were obligated to take part in formal pre-training or in-service training therefore the survey consists of headteachers with some kind of formal training for their job. A range of methods for determining the sample were discussed, but due to the general reluctance of busy professionals to complete the questionnaires and the varying conditions of the education systems of the project partner countries, an opportunity sample was the basis of distribution for the questionnaires. The nature of the respondents differed only in the fact that they were leading networks in diverse settings comparatively, and also under different national and local policy conditions, but in all cases, they were responsible for the strategic leadership of their institutions.

1.1 Questionnaire and data collecting

The questionnaire was designed on the basis of a theoretical framework developed for the project and on the results of the case study interviews conducted in the earlier phases of the project. The questionnaire consists of the following sections:

1–4: Basic respondent data

5: Teachers involved in networks – 8 items (1 of them open)

6: Topics for networking – 8 items (1 of them open)

7: Conditions for networks – 7 items

8: Purpose of networks – 8 items (1 of them open)

9: Characteristics of professional learning networks – 10 items (1 of them open)

10: The role of the school leader – 10 items

11: Challenges in relation to creating professional learning networks – 13 items (1 of them open)

12: Training requirements – 10 items (1 of them open)

13: Other comments.

It was published online in September 2018 and was closed in the middle of November 2018. The questionnaire was sent out in digital form, in the languages of each of the six participating countries. Each partner country was responsible for selecting and inviting potential respondents to complete the questionnaire with the intention of having 50 informants from every country. The majority of the respondents were headteachers who had taken part in training activities within the institutions participating in the LeLeNet project. Other ways of addressing school heads were also used, e.g. contact lists from governing bodies for education, or by approaching other institutions or networks offering professional learning for headteachers with a plea for help or by approaching schools/headteachers directly. The questionnaire was sent to approximately 1,600 headteachers and the response rate was generally low, from less than 10 percent in the Czech Republic, to a bit over 30 per cent in Sweden and Slovenia. Different strategies were used to raise the response rate. In some countries, two reminders were sent. With others, motivators were used like promising possibilities to participate in professional learning activities within the project. We are aware that the population studied is not representative, nevertheless, our objective was not to undertake a representative study but to map the situation and the training needs of headteachers in the area of networking for learning, in the efforts to prepare a training module on the basis of data provided and the interviews conducted for the project.

The design of the questionnaire incorporated open questions where headteachers had opportunities to develop in depth and detailed answers. The intention was to add to the information gathered through the interview process regarding the state of leadership in terms of networking in each country. Answers were received but were very short and difficult to interpret or categorise in a valid way. We therefore decided not to include them in the analysis but to use them as examples when relevant, to support the Likert scale responses from the questionnaire. For the purpose of this project, the analysis of interviews completed earlier in the project provided us with relevant detailed information on networking activity.

1.2 Respondent information

The total number of respondents who were invited to fill in the digital questionnaire was 348, but for the analysis, we used the first 50 valid responses per country. This means that the analysis was deduced from 290 valid responses. For section 5–12 we consider an empty answer as a “Don’t know – not applicable”. This means that we do not have any empty or unfinished responses to these questions. The summary consists of the valid (and therefore used) responses to this analysis per country and the total number of responses (Table 2).

Table 2: Numbers of respondents by countries

Country		total cases	valid and used cases	unused cases
UK	United Kingdom	40	40	0
SI	Slovenia	67	50	17
SE	Sweden	64	50	14
ES	Spain	56	50	6
BE	Belgium	64	50	14
CZ	Czech Republic	57	50	7
Total		348	290	58

When looking at the respondents as a group in itself, the majority of headteachers were female (66%) (Table 3). This reflects the imbalance of headteacher gender in the participating countries. Variously, in Spain, the questionnaire respondents included were more male headteachers at 48%. This gender imbalance of the leadership population can be influenced by structural differences concerning, for example, the educational level (or type of school) but gender difference among headteachers was not analysed any further in this study. The average length of work experi-

ence of case respondents was eight years and the largest group was headteachers from primary schools, comprising of 43% (Table 4 and 5).

Table 3: Respondents by gender

Gender	BE	CZ	UK	ES	SE	SI	Total
Female	76%	64%	60%	52%	70%	72%	65,86%
Male	24%	36%	32,5%	48%	30%	28%	33,10%
Prefer not to say			7,5%				1,03%
Total	100%	100%	100%	100%	100%	100%	100%

Table 4: Years of service as headteachers

Country	Mean	Std. deviation
BE	3,87	5,14
CZ	11,28	9,98
UK	6,24	4,72
ES	7,52	6,54
SE	6,98	4,11
SI	11,91	7,66
Total	8,04	7,25

Table 5: Level of education/type of school

	UK	CZ	SE	BE	SI	ES	Total (%)
Pre-school/ early years	1	16	32	44	1	29	25,05%
Primary education	27	9	43	48	50	36	43,38%
Lower second- ary education	13	47	20	0	46	29	31,57%
Total	100%	100%	100%	100%	100%	100%	100%

A relevant factor when looking at the type of school is that in some countries, pre-school/early years education is separate from primary schools, while in other countries, these two levels are part of the same institution. The same situation applies to lower secondary schools and secondary schools that are separate in some countries and managed jointly in others. Furthermore, some countries have primary schools and lower secondary schools managed in conjunction.

Table 6: Size of the school

Country	Number of students		Number of teaching staff	
	Mean	Std. deviation	Mean	Std. deviation
BE	285,52	141,86	31,16	17,80
CZ	357,96	237,16	26,14	16,58
UK	559,90	329,10	29,63	24,27
ES	581,92	434,58	49,44	34,53
SE	364,38	202,97	29,88	16,48
SI	493,16	223,76	52,18	22,48
Total	435,93	295,24	36,69	24,96

Looking into gender, years of experience and the types and sizes of schools may yield some interesting information but this is neither necessary nor relevant in the context of our study and considering the non-representative nature of the sample, would not contribute directly to the analysis of the questionnaire data.

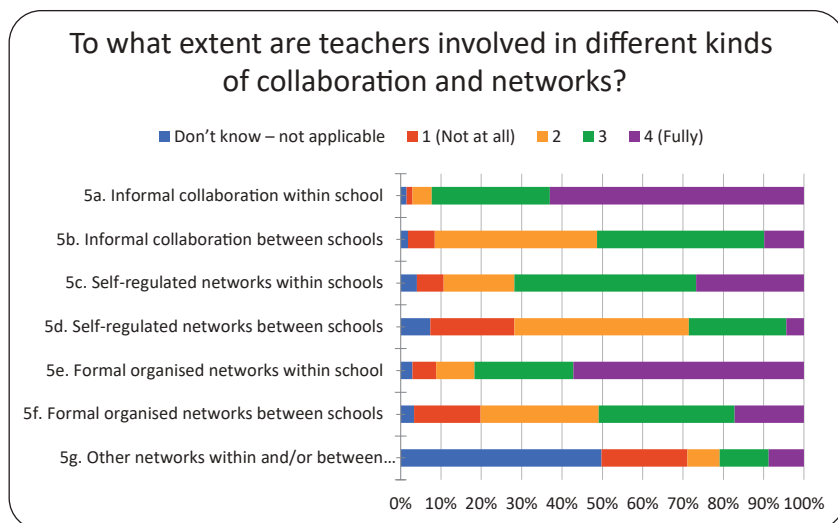
2 Results – Networking practices in schools

This section of the report summarises the results for sections 5–12 of the questionnaire. The Likert scale provides the structure for the chart against the options presented under each question. These options were developed from information provided by the theoretical framework and the interview evidence. In the structuring of the questionnaire and through analysis, it was hoped that the shared/common language of network activity would be comprehensible and resonate with respondents from all countries. This did alleviate some of the difficulties concerning completion of the questionnaires that were evident in the responses to the open questions.

The results are presented both as percentages and as means, based on responses from all 290 informants (Graphs 1–8) and without considering the notable differences among the samples from the six participating countries. In Appendix 3 you can find tables and graphs based on the means for each country involved in the study and a comparison of mean index values is presented based on cumulative indexes from the different questionnaire sections. The indexes are used to compare the summarised information obtained by each country in regards to the size of school, gender and length of experience of the school leader, which generally relate to the purpose of this study.

2.1 Teachers involvement in collaboration and networks

In question five the headteachers had to estimate to what extent teachers in their schools are involved in different kinds of collaborations and networks. Nearly all headteachers indicated that all or almost all of their teachers were involved in informal collaboration and also participated in informal organised networks within their own school. Nearly 75% of the headteachers estimated that self-regulated networking is going on in their schools.



Graph 1: Teachers involvement in collaboration and networks

Table 7: Teachers involvement in collaboration and networks

To what extent are teachers involved in different kinds of collaboration and networks?	Mean	Std. deviation
5a. Informal collaboration within school	3,54	0,66
5b. Informal collaboration between schools	2,56	0,76
5c. Self-regulated networks within schools	2,95	0,87
5d. Self-regulated networks between schools	2,15	0,81
5e. Formally organised networks within school	3,35	0,88
5f. Formal organised networks between schools	2,53	0,96
5g. Other networks within and/or between schools	2,18	1,12

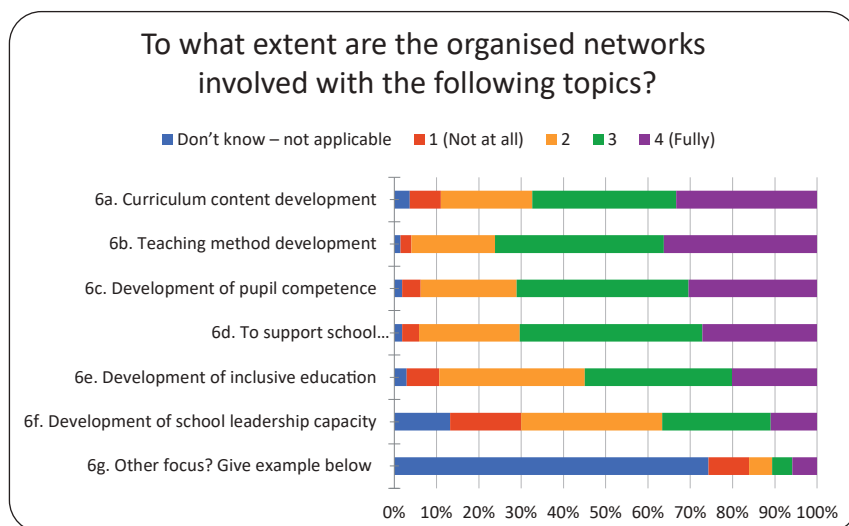
Collaboration and networking between schools exist but to a lesser extent than within schools. Approximately half of the headteachers responded that a few or none of their teaching staff are involved in informal collaboration or self-regulated networks. 20% of the headteachers stated that all of their teaching staff are engaged in formally organised networks between schools. In the open responses, the respondents gave examples of networks that exist in their own schools. Often mentioned were networks or collaborations between primary and secondary schools within the community, with other institutions in society or with schools abroad. Different reasons for networking were given, for example: subject groups (maths), project-oriented collaboration (exams, sports days, didactic issues) and support networks. Formal networks were explained as often being initiated by the headteacher or as a requirement from an external body like the National Agency of Education.

Conclusion

Collaboration and networking (both informally and formally organised) between teaching staff is happening in schools in all 6 participating countries. Teachers are more involved in networks within their own school rather than between schools. There is an apparent variety of existing networks and varying needs to be considered in relation to the role of the headteachers and their training needs. We need to be aware that we know very little about how informal and formal networking is perceived by the respondents and it needs to be explored further in the training modules.

2.2 Topics for networking in schools

The participating headteachers were also asked to select and describe the topics focused on in the more formally organised networks in their schools. The topics chosen in this part corresponded to the responses provided by those interviewed in the case studies.



Graph 2: Topics for networking in schools

Table 8: Topics for networking in schools

To what extent are the organised networks involved with the following topics?	Mean	Std. deviation
6a. Curriculum content development	2,98	0,94
6b. Teaching method development	3,13	0,80
6c. Development of student competence	2,98	0,84
6d. To support school specialisation/development/improvement	2,97	0,82
6e. Development of inclusive education	2,68	0,88
6f. Development of school leadership capacity	2,38	0,93
6g. Other focus? Give an example below	2,29	1,17

The organised networks were to a large extent involved in teaching method development (approximately 75%). According to respondents, topics related to developing curriculum content, student competences or supporting school specialisation were also frequent within the school networks (65–70%). To some extent, organised networks were also utilised in the development of inclusive education (50%). It could be further argued that teaching method development and curriculum content networks would also enhance inclusive education as they would focus on the needs of the students. The majority of responding headteachers did not focus

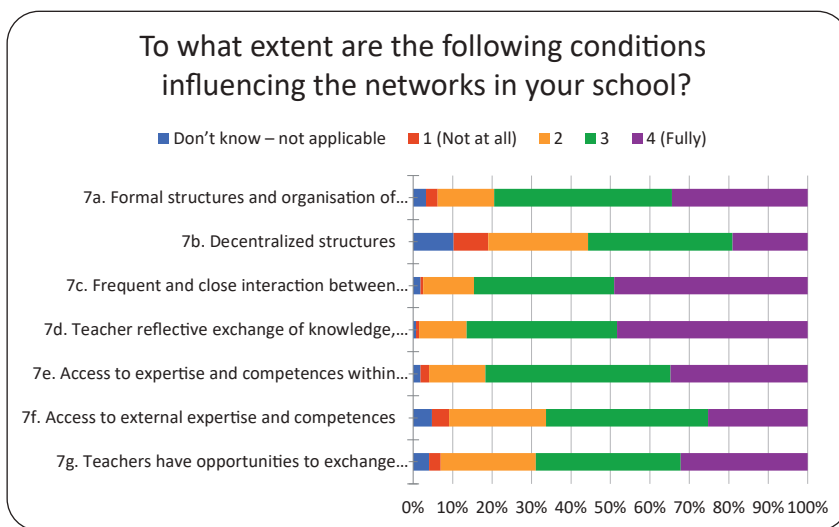
their school networks on the development of school leadership capacity. In the open answers to Other focus? (6g), the respondents gave examples such as “common problems”, “cultural topics”, “ICT as a tool for learning”, “assessment”, which could all arguably be making contributions to the inclusive nature of education in schools. Lesson planning, addressing the curriculum and support for students with special educational needs were also specified. Some of these topics overlap with or contribute to the foci in the given alternatives.

Conclusion

The existing organised networks in our participant schools are immersed in topics fundamental to the process of teaching and learning (i.e. teaching methods, developing curriculum content) but also seem to have specific topics on their agenda. The topics given in the questionnaire make room for varying interpretations so the result presented does not give a very clear picture other than indicating that there is an extensive range of activity. This can signify that the schools are meeting their strategic objectives through networking.

2.3 Conditions for networks

Factors that are important for professional learning network activities are listed in the theoretical framework. Many of these factors were also mentioned by the interviewees such as the level of the network structure, the degree and strength of the interaction between teachers, access to expertise, and the scope of networks were mentioned. Our investigation of conditions for existing networks reveal some of these factors but did not allow for more depth in this question.



Graph 3: Conditions influencing existing networking in schools

Table 9: Conditions influencing existing networking in schools

To what extent are the following conditions influencing the networks in your school?	Mean	Std. deviation
7a. Formal structures and organisation of networks	3,14	0,77
7b. Decentralized structures	2,73	0,90
7c. Frequent and close interaction between teachers	3,34	0,73
7d. Teacher reflective exchange of knowledge, ideas and norms	3,34	0,72
7e. Access to expertise and competences within the network	3,15	0,74
7f. Access to external expertise and competences	2,91	0,83
7g. Teachers have opportunities to exchange and share knowledge and ideas with others outside the network	3,03	0,84

Conclusions

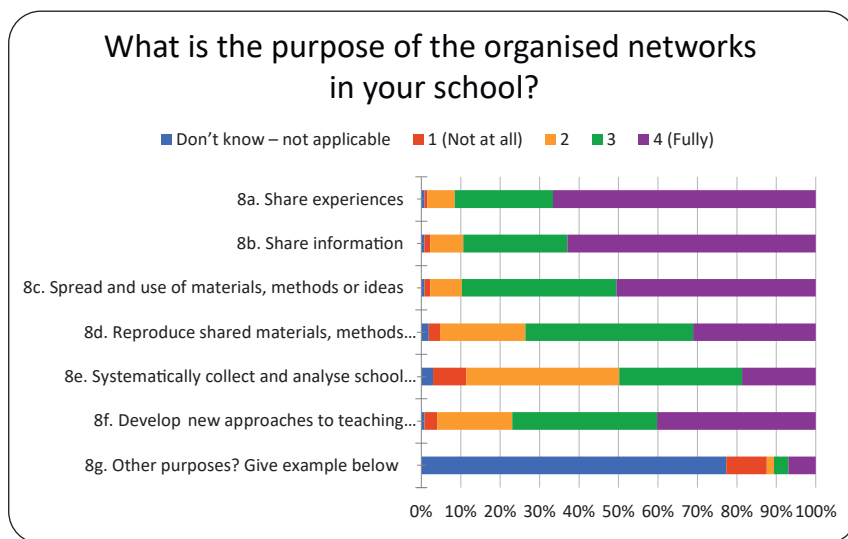
All of the listed conditions, except decentralized structures, scored rather highly as influencing conditions, according to the respondents. The most recurrent conditions were *frequent and close interaction between teachers* and *reflective exchange of knowledge, ideas and norms*. This appears

to support the theoretical premise established by the literature review and suggests that conditions for the success of networks are recognised by participants. The main exception communicated by the respondents was *access to external expertise and competences* which was the factor with the least impact on existing networks in their schools.

2.4 Purpose of existing school networks

Networks in general, are designed to bring together like-minded people with similar interests, but the professional learning networks are more than just opportunities to share good practices or find reassurance to support individual practice. The core idea of professional learning networks is that teachers are encouraged to discuss, question, reflect on and adjust their own professional practice. When asking teachers about the main purpose of existing networks we wanted to get a picture of the extent to which the existing networks can be seen as professional learning networks. The respondents indicated that in regards to the purpose of organised networks, they felt that the most common goal was to share experiences and information as well as to disseminate materials, methods and ideas. These activities ensure that learning and teaching are consistent, that they meet the learning objectives and that they save time. Teachers can of course also benefit from the sharing of ideas and resources.

Furthermore, it is quite common that networks involve engaging in developmental activities, either in the reproduction of shared materials or by developing new approaches to teaching challenges. The least common of the listed purposes of organised networks was that teachers systematically collect and analyse data in order to create new knowledge about their teaching or about students' learning. Some other purposes are mentioned and expressed in general terms in the open answers, such as inspiring and learning from each other or strategic development, e.g. in relation to ICT.



Graph 4: Purpose of school networks

Table 10: Purpose of school networks

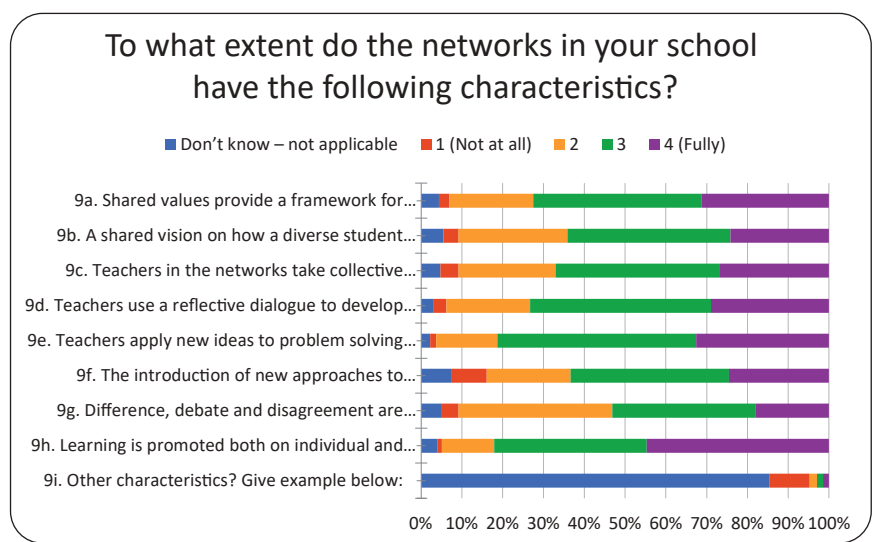
What is the purpose of the organised networks in your school?	Mean	Std. deviation
8a. Share experiences	3,57	0,66
8b. Share information	3,52	0,70
8c. Spread and use of materials, methods or ideas	3,4	0,69
8d. Reproduce shared materials, methods or ideas	3,03	0,80
8e. Systematically collect and analyse school-based data	2,63	0,88
8f. Develop new approaches to teaching challenges	3,14	0,83
8g. Other purposes? Give an example below	2,32	1,28

Conclusion

The responses to this question highlight the point that although there is a lot of networking happening in schools, within many networks, teachers do not seem to go further than to just exchange ideas. If the purpose is to develop inclusive professional learning networks, this raises some implications concerning the role of the school leader, such as the need to design network activities that enhance deeper learning and create comprehensive professional learning networks. This is an essential part of the leadership role within learning networks.

2.5 Characteristics of school networks

This subject takes its point of departure from the research of Jackson and Timperley (2007). They have identified characteristics of network-learning activities shown to be important in enhancing collaborative learning. Some of the key characteristics that are stressed in the theoretical framework for the LeLeNet project are: shared values and vision; collective responsibility; reflective professional inquiry; collaboration and the promotion of group and individual learning. These key characteristics are addressed in the questions below.



Graph 5: Characteristics of school networks

Table 11: Characteristics of school networks

To what extent do the networks in your school have the following characteristics?	Mean	Std. deviation
9a. Shared values provide a framework for collective decision-making in the networks	3,06	0,8
9b. A shared vision on how a diverse student population can be seen both as a strength and a challenge for teaching and learning	2,91	0,83
9c. Teachers in the networks take collective responsibility for the learning of students	2,96	0,84

To what extent do the networks in your school have the following characteristics?	Mean	Std. deviation
9d. Teachers use a reflective dialogue to develop and share new knowledge	3,02	0,81
9e. Teachers apply new ideas to problem-solving and generate solutions	3,14	0,73
9f. The introduction of new approaches to teaching are considered unachievable without collaboration within a network	2,84	0,92
9g. Difference, debate and disagreement are viewed as the foundation stones of improvement by the teachers	2,70	0,84
9h. Learning is promoted both on the individual and group level	3,31	0,74
9i. Other characteristics? Give an example below	1,62	1,00

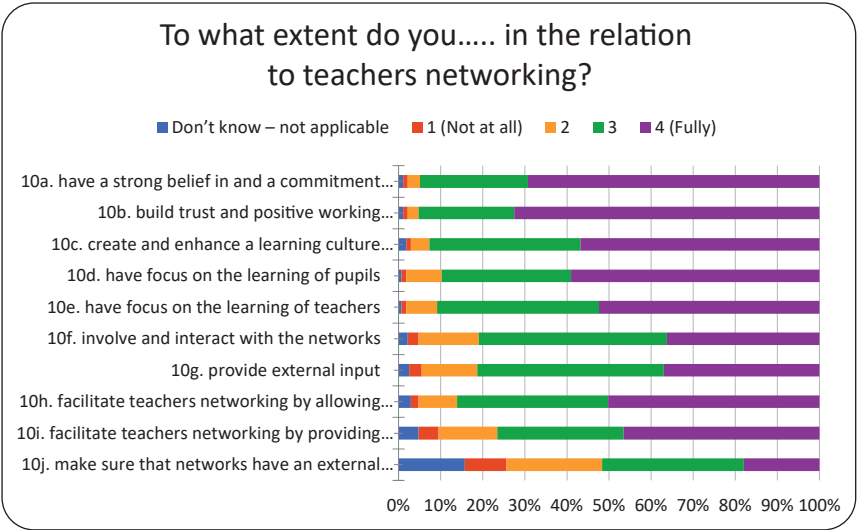
More than 50% of the respondents indicated that all listed characteristics are present, to a large extent, in all or almost all networks. Characteristics that were most highly rated by the respondents are: learning is promoted on both the individual and the group level (9h), that teachers in the networks apply new ideas to problem-solving and generate solutions (9e) and also that shared values provide a framework for collective decision-making in the networks (9a). The notion that differences, debate and disagreement are the foundation stones of improvement of practice, had the lowest score (9g). In the open answers, there were a few additional characteristics mentioned, such as the support for teachers in distress and the transfer of knowledge within the network.

Conclusion

This section of responses affirms some of the core ideas relating to networks as the answers often overlapped with those given for and related to activities, topics, purposes or already listed characteristics of existing networks. Sharing experience and ideas is highly scored as the purpose of the networks, indicating that the concept of learning adhered to by respondents could be sharing and applying new ideas. The recognition that there is a shared vision on how a diverse student population can be seen, both as a strength and a challenge for teaching and learning, is a positive outcome, given that a central concept in this project is that PLNs can foster inclusive education.

2.6 Role of the headteacher

The statements in the questionnaire on the roles of the school leader in the development of professional learning networks are grouped according to the research done by Verbiest and Timmerman (2008) and can be seen in the interview evidence. Consequently, the analysis addresses the responses in these groupings: ‘culture developer’, ‘educator’, and ‘architect’.



Graph 6: Role of the headteacher

Table 12: Role of the headteacher

To what extent do you..... in the relation to teachers networking?	Mean	Std. deviation
10a. have a strong belief in and a commitment to collaboration and networking for learning	3,65	0,59
10b. build trust and positive working relationships within school	3,68	0,57
10c. create and enhance a learning culture among staff	3,52	0,63
10d. have focus on the learning of students	3,51	0,69
10e. have focus on the learning of teachers	3,43	0,68
10f. involve and interact with the networks	3,18	0,76
10g. provide external input	3,16	0,77

To what extent do you..... in the relation to teachers networking?	Mean	Std. deviation
10h. facilitate teachers networking by allowing time	3,35	0,74
10i. facilitate teachers networking by providing space	3,21	0,89
10j. make sure that networks have an external supervisor and/or contact with other networks	2,69	0,93

In the role of the school leader as a ‘culture developer’, many of the respondents answered that they have a strong belief in and a commitment to networking for learning and that they, as headteachers, have an important role in building trust and positive working relationships. They also recognise the need to disseminate and strengthen the values, views and standards in the service of creating a commonly supported professional learning culture. In their role as an ‘educator’, they maintain focus on the learning of students and teachers. They foster focus on the quality of the individual and collective learning processes of team members to ensure that profound learning takes place. Finally, in their role as an ‘architect’, they facilitate teachers networking by allowing time and providing space for said networking. The headteachers find that the networks having an external supervisor/contact, in cooperation with other networks, is the least important of their activities. However, the literature and interview evidence suggests that the building of network structures, of sources and of systems, will enhance personal and interpersonal capacity development.

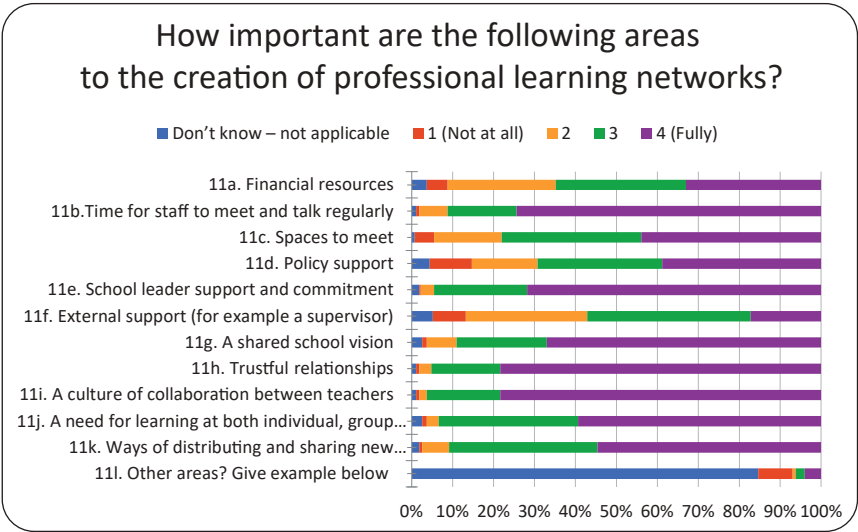
Conclusion

All three roles (culture developer, educator and architect) received high scores, therefore (and in accordance with their answers) the headteachers already seem to be aware of these different roles. Not many headteachers viewed it as a priority to organize and cooperate with an external supervisor or to open up to other partnerships. Since these informed respondents have experience in all three roles, it seems valuable to make use of this experience in the training modules in order to clarify the role, explain further practices, and to give and receive feedback on them.

2.7 Important factors for Professional Learning Networks

In the analysis of the interviews, some pre-conditions for successful networking in schools were identified. The categories were: building a culture

of collaboration; headteachers' knowledge and attitudes to networking; resources in terms of time and space; teacher motivation and policy support.



Graph 7: Important factors for creating Professional Learning Networks

Table 13: Important factors for creating Professional Learning Networks

How important are the following areas to the crea- tion of professional learning networks?	Mean	Std. deviation
11a. Financial resources	2,95	0,91
11b. Time for staff to meet and talk regularly	3,66	0,64
11c. Spaces to meet	3,17	0,88
11d. Policy support	3,01	0,99
11e. School leader support and commitment	3,67	0,56
11f. External support (for example a supervisor)	2,70	0,85
11g. A shared school vision	3,59	0,67
11h. Trustful relationships	3,75	0,53
11i. A culture of collaboration between teachers	3,76	0,51
11j. A need for learning at the individual, group and school levels	3,55	0,61
11k. Ways of distributing and sharing new knowl- edge to others	3,47	0,65
11l. Other areas? Give an example below	2,09	1,31

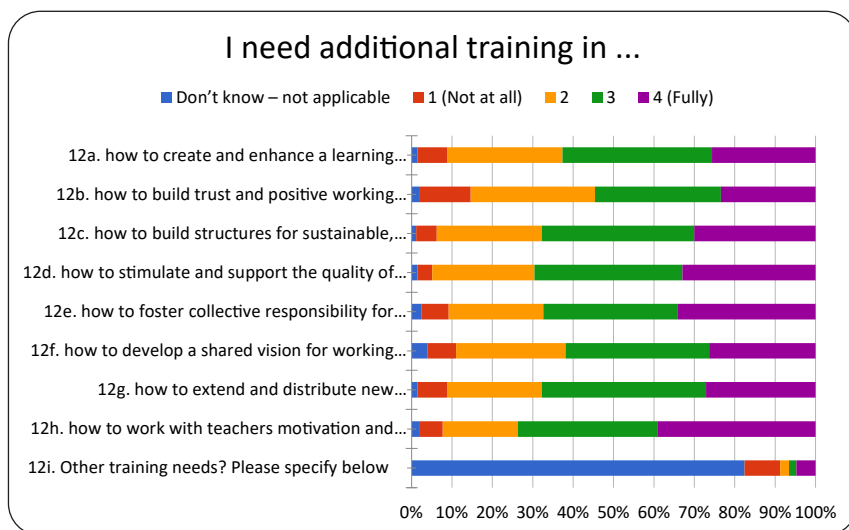
The general picture provided by the headteachers involved in this study outlined that all the addressed factors were seen as important for creating professional learning networks. According to the respondents, the most important areas are trustful relationships among staff (11h) and existing culture of collaboration between teachers (11i). School leader support and commitment (11e) also scored highly, as well as a shared school vision (11g). A need for learning at the individual, group and school levels (11j) seems to be crucial. Of lesser importance is having ways to distribute and share new knowledge with others (11k) and also the need for external support (11f). Not much importance was given to policy support (11d). With regards to resource-related preconditions, time for staff to meet and talk regularly (11b) was much more highly valued than spaces to meet (11c) and financial resources (11a). The open answers were diverse but point to school culture related conditions such as motivation, open communication and again, trustful relationships.

Conclusion

These results further reinforce the importance of addressing the three roles of the school leader and the associated leadership competence. Although the leadership skills associated with the role of culture developer and educator are more familiar amongst the headteachers in the case study, there is recognition of the need for the development of competence in the area of the architect, especially in managing the challenges and benefits of cooperative working between institutions.

2.8 Headteachers' training needs

In the final question, the respondents were asked to appraise their own training needs on a scale of 1 (Not at all) to 4 (Fully). The competencies addressed in this section also take their point of departure from the three essential headteacher roles identified by Verbiest and Timmerman (2008) and those described in the theoretical framework mentioned earlier.



Graph 8: Headteachers' training needs

Table 14: Headteachers' training needs

I need additional training in ...	Mean	Std. deviation
12a. how to create and enhance a learning culture among staff	2,81	0,90
12b. how to build trust and positive working relationships within school	2,65	0,98
12c. how to build structures for sustainable, personal and interpersonal capacity development	2,91	0,87
12d. how to stimulate and support the quality of individual and group learning processes	3,00	0,85
12e. how to foster collective responsibility for student learning	2,96	0,92
12f. how to develop a shared vision for working in networks	2,85	0,90
12g. how to extend and distribute new knowledge within the organisation	2,88	0,89
12h. how to work with teacher's motivation and commitment towards professional learning networks	3,07	0,91
12i. Other training needs? Please specify below	2,14	1,28

On average, about two-thirds of the headteachers in this study claimed to need at least some additional training in the areas mentioned, to better lead professional learning networks in their schools. That means they see the need to develop their role as cultural developer when it comes to creating and enhancing a learning culture amongst staff (12a), to build trust and positive working relationships within the school (12b) and to develop a shared vision for working in networks (12c).

Additionally, the evidence indicates that the headteacher's role as educator needs to be developed, especially in working with teacher motivation. The commitment towards undertaking professional learning networks (12h) scored higher than the other listed training needs, even among this good group of respondents with considerable experience. Furthermore, the need to learn more about how to stimulate and support the quality of individual and group learning processes (12d) and how to foster collective responsibility for student learning is a recognised area of need (12e). Finally, the architect role needs to be developed further, for example in how to build structures for sustainable, personal and interpersonal capacity development (12c). The recognition that the school leader's role in building teacher commitment to networks and the role of supporting the distribution of shared knowledge emerging from network activities, is evident as an area of leadership learning that needs to be improved.

Suggestions in the open answers for areas of further training, which to some extent correlate with the topics above are: how to intermix participation in networks and work with students, communication techniques for managers and how to deal with colleagues who only do the minimum. There were some rather diverse but aligned examples given, such as analysis of research findings, assertiveness and communication training and significantly, to educate staff in dealing with stressful situations. One respondent suggested a forum where headteachers could share good examples of their development work concerning stressful situations, which indicates the importance of the school leader as a role model and the need for networking experiences for the headteachers themselves, to ensure a fuller understanding of the range of networking skills required for successful outcomes.

Conclusion

These results comparatively confirm that the areas identified by Verbiest and Timmerman (2008) also correspond to the training needs expressed by the respondents. It is difficult to distinguish from these results whether

some specific areas of training needs are more prominent than others. For a more specific picture, it might be relevant to do a more in depth analysis of the responses at the country level (see Appendix 3).

Summary of findings – questionnaire

The results of the questionnaire indicates that the topics identified may be included in the training modules. The modules need to develop a shared language of professional learning for leading networks by clarifying the differences between types of collaboration, formal or informal networks and professional learning networks and to not use them synonymously. It is clear that without these areas of leadership development there are implications (for both teachers and headteachers) of a lack of awareness of the challenges of working in networks. There is a need to deepen the notion of learning in relation to professional learning networking, to make clear what characterises the concept of learning in this special context and to model this concept of learning in the training modules.

The three roles – architect, cultural developer and educator, encompass the challenges related to leading professional learning networks and are well suited to be part of a relevant framework for the training module, planned for headteachers. To be considered is the point that headteachers have experience acting in different roles as leaders of teachers' networking and try to use their experience in the training. An analysis of the questionnaire data, strictly on a national level, is recommended when adjusting the training module to a specific national context.

Baseline study conclusions

The LeLeNet project addressed the question of how collaborative networks, which are a source of learning and innovation in schools, can be characterised. The project team believes that learning networks can help teachers to manage, among other things, the increasingly diverse populations supported by schools through an inclusive approach to education. Networks are groups of people (generated within and amongst schools) working together on a given task or activity. To highlight the innovative aspect of networks, we have adopted the term Professional Learning Networks (PLNs) for our project. Our goal was to identify and describe which factors and/or conditions facilitate learning processes through collaborative networks and the role of school management in these processes. In the second phase of the project we used the outcomes of our evidence gathering about the needs of school leaders to design the contents of educational modules for the school management. We wanted to identify the real experience and the needs of headteachers in the area of creating and maintaining a PLN and to identify some of the challenges of building PLNs in schools. To answer these questions, we studied professional literature and also conducted interviews and questionnaires with headteachers.

The LeLeNet project has identified PLNs as a means of support learning and development of a diverse education workforce enabling teachers to address challenges of a diverse student population. The core idea of PLNs is that teachers are encouraged to discuss, question and adjust their own professional practices, starting with the sharing of ideas, insights and specific didactical approaches. An emphasis on a practical orientation to training within an atmosphere of a collective endeavour is suggested as a way of optimising the learning processes of all students. However, sharing of experience, materials and procedures may not always be enough. PLNs generate new findings, promote on-the-spot learning and can have a significant impact on changes and innovations in teaching and in schools. True collaborative learning networks are characterised by sharing values and visions, collective responsibility, reflectivity, cooperation, as well as individual and group learning. The factors supporting the success of PLNs concern both the levels of activities and structures of networks, such as topics, activities, degree of formality of relationships,

depth of interactions, breadth and permeability of networks and the expertise of individuals in the network. Motivations and attitudes of teachers towards cooperation and networking and the overall school culture supporting cooperation and learning processes are equally important factors determining the success of networks.

The main focus of the project is the leadership, support and management of PLNs in schools, by headteachers. On the basis of the literature used, we consider their support an essential condition for the successful functioning of collaborative networks operating within and amongst schools. We argue this case from the point of view that activities and tasks of a headteacher in leading learning networks can be captured in three roles in the area of PLNs: the role of culture developer, the role of educator and the role of architect.

In an effort to identify the experience and the needs of headteachers, we conducted interviews with 29 headteachers in five countries and using questionnaires, we collected data from 290 headteacher respondents from six countries. The results show that headteachers are significantly inclined to support networking among teachers within and also between schools as they realise the potential for professional as well as school development. Headteachers have more experience in managing networks within schools than in collaborating between and amongst schools. Informal networks and collaborative groups within schools are not always managed primarily by headteachers. The results of the study reveal a wide range of topics on which teachers collaborate. However, their main focus is on topics directly related to the main educative processes of shared learning, teaching methods, developing curriculum content and in a few cases, inclusive education practice. Headteacher experience indicates that networks in schools serve not only to facilitate sharing and the exchange of experience but that they actually support learning processes at both the individual and group level. This seems to be a positive aspect, although evaluating the real benefits of PLNs (i.e. impact on students' learning) may be a weaker aspect of the management. At the same time, headteachers are aware of their important role in supporting the PLN and realise that networks will work better if the headteacher is committed to harnessing the collective energy of the professional staff. In their opinion, the culture of cooperation at school, the climate and trust amongst teachers and their commitment and their willingness to cooperate are also crucial for the success of networks. Therefore, headteachers strongly perceive their role as promoters of the culture of cooperation and learning.

Adversely, many school leaders did not consider it important to provide external supervisory support for the success of PLNs.

It seems that if and when headteachers talked about obstacles for the development of PLNs, then it was in relation to concerns about their own lack of knowledge in terms of networking and networking topics. The challenges of working in networks are often issues relating to a lack of resources, teachers' motivation and policy support, at both the local and national level. Professional learning needs are felt in a number of areas, most notably in the area of skills to motivate teachers to cooperate and ensure the quality of learning and the professional development of teachers. However, as the communicated educational needs were related to all areas of PLN management, we decided to conceive the structure of educational modules in the above-mentioned triad of roles: the headteacher as culture developer, the headteacher as educator and the headteacher as architect. Particular attention has been paid to the topics the headteachers indicated in their responses to open questions in both the interviews and the questionnaires, such as education and learning gains from PLNs, conditions for effective PLNs, motivation for work and management of PLNs, as well as support and culture. The study forms the basis for the creation of training modules in networking for school leaders. At the same time, it may serve as study reading for headteachers, lecturers, teachers and other supporters and professionals interested in the subject of networking.

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Appendix 1 Examples of good practice of networking in partner countries

BELGIUM

A learning community for school leaders

Working with learning communities for school leaders is part of a broader school development program ‘Shared Educational and transformational Leadership by means of Learning communities (SEALL)’, which is implemented in a growing number of schools that are part of the school group ‘Stedelijk Lyceum Antwerpen (City College Antwerp)’. More information can be obtained from the project leader Prof. Dr. Wouter Schelfhout.

A. The global intention of the professional development project

General goals

- Avoiding the professional development model “transfer of knowledge”. Instead: knowledge and ideas should be applied in a specific manner (and adapted to individual school needs and capacity); need to try out in daily practice.
- Transcending professional development merely related to rather delineated goals (ex. class visit, performance appraisal ...). Also focusing on school and quality development and all factors related to them, with attention to shared educational and transformational leadership.
- Reflecting on the possibilities provided by different forms of teacher learning communities to work on school development and the support of the school leader herein.

Pursued a professional development model: interaction between

1. Team learning in a learning community

With the following characteristics:

- Inspired by (1) Frameworks, (2) Examples from colleagues from their own school contexts
- Social motivation, stimulation, converting inspiring frameworks into policy action
- Put policy action into practice
- Giving feedback, to a group, with due attention to: (1) Learning process, (2) Support (customised to different levels of development in schools), (3) Practice deprivatisation.

2. Further individual follow-up by the pedagogical advisors involved, helping to convert general theoretical frameworks into concrete policy action

As part of this process, where necessary:

- Helping in the thinking process
- Start up
- Support (possibly by coaches).

B. Content and course of the learning community for school leaders

Session 1:

Framework concerning shared educational and transformational leadership by means of learning communities (SEALL)

1. Getting acquainted with and doing an overview of course content
2. Introduction and quality framework, a challenging and inspiring framework and starting point
3. Introduction into school development plan and global self-evaluation
4. Reference framework: the need for different forms of quality assurance and development
5. Global self-evaluation, complemented by action
6. Choosing themes to work on in groups
7. Arrangements for the upcoming session
 - Working in smaller groups
 - Always in the school of one of the participants
 - Assignment.

Interim assignment between session 1 and 2

- Start the self-evaluation, linked to quality reference framework for the chosen theme
- Decide which topic of the quality framework will be used for reflection
- Illustrate with existing materials or forms of approach already tested by the school.

Session 2: SEALL by different forms of learning communities

1. Framework: 'shared leadership, and subject groups as learning communities'
2. Examples from practice
3. Start-up 'Working with a school development plan (SDP)'.

Possible layout and content of a school development plan, including practice examples by the participants (if possible)

- General self-evaluation
- Concrete project plans regarding quality development
- Brainstorming.

Discuss the 'quality questions' from the quality audit framework, linked to chosen themes, and review

- In which way can these insights be used to implement policy in the classroom?
- How can this be elaborated and organized?
- How can we overcome hindering factors at the individual and school levels?

Adapted to the school, further processing of these ideas

- Conclusion and engagement
- Create action plans in 'SDP' as preparation for session 3

- Think of illustrative ‘stories’ and practical examples.

Session 3: Discussing practical examples + discussing an approach

1. A practical example provided by a school
 - Illustration and discussion
 - Tour in school and classes.
2. A practical example brought by the learning community coach
 - About the chosen theme, e.g. evaluation policy, care policy
 - Discussing project plans about evaluation (approach related to vision development – approach related to teacher departments as learning communities).
3. Discussing engagements for next session
 - Start with developing concrete, school-specific project plans (or a self-chosen template) about themes, using forms of learning communities
 - School leaders must point out what challenges they are faced with and what questions they still have about learning.

Between session 3 and 4: process coaches support individual principals and elaborate on approach

1. Assignment ‘elaborate policy-based-actions, adapted to the school context’
 - Some schools have already started initiatives and want to support further execution – It’s important to examine this further and find solutions for challenges/problems
 - Some principals have not started to reflect on a possible approach
 - Together with a process-coach who is quite familiar with the school.
2. Organising the following session
 - Check which of the participants are ready and willing to introduce projects to the group as part of session 4
 - Not everyone is obligated to take part in the next sessions: commitment is necessary
 - School leaders who are not ready can further elaborate on this for next session.

Session 4: Concrete design questions, to be discussed in group

1. Introducing the project plan per school
 - Work around concrete existing/new projects in school, using learning communities
 - At least 2 principals, maximum 4 per session
 - Discussing challenges/questions in the group. Giving feedback on concrete forms of approach with due attention to:
 - (1) Learning process in learning communities, (2) Support (adapted to various levels of development in schools): elaborate concrete forms of approach.
2. Follow-up

Prepare the project plan, a brief reflection on further individual succession by the involved pedagogical advisor where needed: design of the approach, start-up, support (by training process coaches).

Session 5 and further: Concrete design questions, to be discussed in group

- Same approach as session 4
- Alternated with specific moments of input on chosen themes.

Last session: presentation

- Each principal presents the elaborated approach, within the same format
- Sharing experiences, challenges and questions
- Further feedback on applying the SEALL-model (cfr. session 1).

THE CZECH REPUBLIC

Methodological sheets for foreign pupil education at school P: example of an internal teacher network supporting inclusive education

Topic and aim of the network

The topic of the internal network at school P is quality improvement in the education of foreign pupils and support for teachers across the school in this field.

Motivation (starting points)

Attended by 680 pupils, school P is a big school in a large city. Among these pupils, there are 40 foreigners (Ukrainian, Slovak, Vietnamese, Russian, French, Polish, Croatian, Jordanian, Romanian, British and Syrian) and approximately 20 more Vietnamese pupils with Czech citizenship from families in which Czech is not spoken at home so they have different challenges using the language. Limited knowledge of Czech is apparent during the learning process, in all subjects. When working with these pupils, teachers reported that they have to rely on their own intuition and experience. They use the support measures available, such as teacher assistants, alternative ways of testing, allowing extra time for task solutions, adapted evaluation of results, and so on.

The diversity of pupils in this school is changing as the Czech Republic is opening its borders to other European as well as non-European countries, therefore the subject matter of foreign pupils is increasingly arising in discussions at teacher meetings and there is a growing need to create at least a basic framework to facilitate their education.

Teachers/schools involved and the role of the headteacher

With the support from a European project within the operational programme *Prague — a pole of growth*, the leaders of the school established a teacher group whose aim is to create a methodological aid for teachers of foreign pupils and to create functional support for pupils with different mother tongues. The following members of the group were involved:

- a school psychologist
- a special educator (project guarantor)
- two teachers (authors of the methodological material)
- four assistants for foreign pupils (4th and 5th-year students at a faculty of education)
- the deputy headteacher
- the assistant of the headteacher
- teachers in school clubs/library.

The setup of the team was planned during the preparation of the project. Its members held regular monthly meetings during the whole project, over a two year period. The members of the team had roles that were clearly defined.

The project was guaranteed by the special educator, who was responsible for the professional part of the project, involving report writing and the observance of deadlines. The administrative and economic part of the project was managed by the assistant of the headteacher. The two teachers in charge of the professional part of the methodological manual were supported by the practical experience of the assistants, the school psychologist and the special educator. All members of this group co-wrote the manual and verified the recommendations in the practices. Teachers working in the school clubs, the library and the study centre were in charge of supportive leisure activities meant to integrate pupils with different mother tongues. They helped them to prepare for lessons and gave them recommendations for reading in Czech.

An important role within the network was played by the deputy headteacher, who looked at the project from the viewpoint of school leadership and created conditions for teamwork. The role of school leaders can be described in three stages:

- Stage one: the headteachers, in cooperation with other teachers, identified the need for pupils (with different mother tongues) to be supported by all teachers; they discussed the options and possibilities of this support with the members of the school counselling centre (school psychologist, special educator), then initiated them. Furthermore, the group in fact wrote the project, looked for suitable financial resources and composed the starting setup of the team.
- Stage two: once the project was accepted, the headteachers maintained contact with the team (mainly through the deputy headteacher), created conditions for project implementation and saw to administration support, the hiring of personnel (student assistants) and the dissemination of information about the work of the team to other teachers and people outside the school.
- Stage three: when finalizing the methodological manual, school leaders planned and prepared to sustain and further develop the results of the project, while they also monitored the use of the methodological manual inside the school, created concrete conditions for its further development and made it possible to disseminate the outcome elsewhere (e.g. by means of the school web site).

Benefits

The outcome of the cooperation outlined was a methodological textbook for working with foreign pupils. It contains methodological sheets describing various activities for children with different mother tongues, designed to support social integration in a new setting and facilitate the learning processes (work sheets, didactic aids, diagnostic materials, games, suggestions for social activities, and so on). It is a methodology used by teachers, assistants and special educators today. It is available in Czech at <https://www.zskunratice.cz/ucitele/projekt-oppnr-inkluzie-cizincu>

The manual is now in pilot use in classrooms where needed. It is continuously updated according to remarks made by teachers and assistants. Due to its short period of use, the impact on pupils has not yet been fully evaluated, but the material is alive and the network of cooperating teachers continues to exist, collecting feedback on the manual and developing it further.

The outcome of the project is meaningful to both pupils and teachers. Teachers started reflecting on the problems of foreign pupils from a wider perspective and accepted a wide range of potential support. The coordination between teachers and assistants, as well as between teachers and school counsellors, has been enhanced. Various school leaders' supervising activities such as methodological support from the deputy headteacher to assistants have been developing since the manual was implemented.

The school succeeded in gathering a group of motivated university students who became assistants, supported by the school psychologist, special educator and deputy headteacher. Also, these assistants collaborated intensively with class teachers who had pupils with different mother tongue in their classes. Therefore, the project was also important for these university students, who were developing into prospective potential teachers for the school.

Applicable in a wider context, beyond this school, the methodological manual is freely available. The whole team had a positive experience during the project and people in the school have convinced themselves that their expertise is valuable and could be offered to other schools in its current formed and also further developed.

Limits

Each new project and specifically working within a network of teachers, has its risks. When intensively working on this project, the workload was felt as onerous by the members of the school counselling centre, teacher assistants and class teachers, who had to cooperate closely. Due to the intensity of cooperation within this network, challenges arose when one of the assistants ended her studies early and left the city. It was then necessary to redistribute her work among the remaining assistants.

Another rather unforeseeable risk was the attitude of the parents connected to the school. Thanks to enhanced public awareness and the education of the parents (the school is a regular school in a location inhabited by middle and upper class families, not a socially exclusive place) they understood and supported the project processes taking place at the school. They recognised the improvement in individual support for their children, from the school. They were satisfied with it and rather paradoxically, relinquished more care and responsibility to the school. It eventually became a challenge for the school to maintain cooperation with the parents of pupils with different mother tongues.

SLOVENIA

Primary school (PS) Dobje

Description of the school

Primary school Dobje and its pre-school unit is a smaller, modernly equipped public institution in the region of Savinja. The staff is professionally qualified. 175 children attend the school and the pre-school, a team of 36 teachers work there, and the entire staff is made up of 47 people. The headteacher is assisted by a deputy, with a 30 % share of employment in this position.

The use of ICT at PS Dobje

In line with syllabi and using the 'lifelong in the 21st-century' approach to learning, we use ICT in all grades and in all subjects. Practically, it means that pupils work two hours per week on a computer or tablet. We have a computer and an interactive board in each classroom. Consequently, teachers and pupils at this school are skilful users of technology. Technology is intelligently included in the curriculum and we have introduced modern teaching methods. We are most proud of the inclusion of formative assessment in the Cloud (we use 365 Cloud because of its free access to services, being a part of the contract agreed upon by the Ministry of Education, Science and Sport and Microsoft). Our pupils use digital notebooks for formative assessment in order to self-assess and self-evaluate their progress, while at the same time, teachers have access to, and an overview of, pupils' work. The model was developed by the Institute of Education, in cooperation with the EU-folio and ATS 2020 projects. We are constantly monitored by coordinators from the Institute of Education. We have also participated in the project by introducing e-contents where teachers introduce the use of e-textbooks under the mentoring of the counsellors from the Institute of Education (through observing lessons).

Due to effective cooperation with the Institute of Education and due to our innovative teaching approaches, we were awarded the Blaž Kumerdej Award in February, 2016. In November 2015, we were recognised as a Microsoft Innovative School for meaningful and didactically exemplary teaching strategies. Within two years, 16 teachers have been recognised as Microsoft innovative teachers. This title does not mean that teachers use ICT randomly (it has to be mentioned that we have a license for Windows for all computers so every pupil can use Word, PowerPoint, Excel, and One Note) but that they know and estimate how to motivate pupils to use ICT, how to develop student creativity and independence, how to teach them critical thinking, problem solving, decision making, and risk assessment, particularly by taking the reverse role to develop student responsibility for their work and promote their talents. Such an approach does not put teachers in the centre as the only source of knowledge. There are very few entire-class lessons and consequently, pupils are motivated and take responsibility for their own learning. These approaches result in the fact that creative and independent

learning has been a value in our school for the past few years and has also been recognised at the state level. For the last four years, 10 to 20 percent of our pupils have been awarded gold recognition awards in different contests and more than 50 percent earned silver awards. It shows us that we are doing well and that we have succeeded in teaching our pupils how they should plan their learning, set goals, set criteria, identify strengths, collect evidence and evaluate their knowledge. ICT is of great help to us in all our activities.

Teachers regularly present their work at national and international conferences. Every year, lesson observations for headteachers are organised in agreement with the Institute of Education. This year, we were selected as a case of good practice within the Partnership for Changes project.

Phases in the introduction of C 365

At the end of 2013, one of our ICT specialist teachers and the headteacher were informed about a project that offered the possibility to use Cloud 365 (C 365) in regular lessons, in projects, for interpersonal communication among the staff and with sharing documents. We formed a larger team of teachers (the ICT specialist, four teachers and the headteachers) who outlined what we were doing and where we would like to go. By 2012, we had agreed on our vision, namely: We are an open and innovative school where creativity and knowledge for living are being developed. During the self-evaluation process, we have also established that gaining knowledge must become our value. We share common goals, namely that we would like our pupils to:

- be motivated;
- develop creativity;
- think critically;
- identify, present and develop their talents;
- develop independence;
- be able to solve problems;
- make decisions;
- estimate risk;
- be responsible for their own knowledge.

We set the following priorities:

- to train all staff to be able to work with C 365;
- at least one third of the teaching staff should identify and create opportunities to use C 365 in their teaching and pilot them;
- teachers using C 365 in their lessons should report on it and demonstrate their practice to other teachers at staff meetings.

Phases:

1. The ICT specialist and the headteacher arranged the formalities for obtaining the licenses.
2. The ICT specialist ensured appropriate speed of data transmission (as we do not have the possibility of digital optical connection) so all the work in C 365 must and can be carried out on-line.

3. The ICT specialist provided a C 365 account for all staff members.
4. At the end of 2013, the team of experts presented their work in C 365 during a collective training session, for all staff. The staff received their user names and passwords; they signed into the new environment and had a quick look at it during the training.
5. All teaching staff got the task of getting familiar with this new e-environment during their holiday time and were asked to specifically think about how to use a OneNote digital notebook in their lessons, as support for paper notebooks.
6. Before the beginning of the school year, we agreed on who would pilot C 365 (some teachers by their own initiative, some due to their work on the project ATS 2020). We formed an extended team for the pilot implementation of digital notebooks in lessons.
7. It was established that C 365 will also be used for sharing documents (joint development of the annual plan, reports at the end of the school year, invitation letters, etc.).
8. In September 2013, all pupils received user names and passwords for C 365, and parents were informed during our common parents' meeting and later also at the individual class parents' meeting. The 1st grade class tutor had a special meeting with parents to introduce them to C 365.

Course of activities

According to the annual plan, the team identified the topics that would be appropriate for the digital notebook. The headteacher assisted teachers during the first lessons by helping pupils sign into C 365 and help them get familiar with the software. No special problems were identified by the pupils.

Some informal groups emerged in the staff room. Teachers discussed and investigated the possibilities of how to use C 365 and what could be done with pupils in the classroom. First, digital notebooks were developed. Pupils were very motivated to learn. After the school year 2014/15, six teachers used digital notebooks regularly. All knowledge and experience were shared amongst teachers and a lot of self-learning was carried out by teachers.

The extended team realised that digital notebooks were useful and appropriate, particularly for formative assessments. Evidence and examples of good practice with the digital notebook, to support formative assessment, were presented and shared by four teachers, during the final staff meeting of the school year.

In 2015/16 we set the goal that every teacher should implement the use of C 365 in at least one part of the syllabus, as support for formative assessment. Thus, all staff were included in the usage of C 365. During that school year, we started to inform the wider public about our work with C 365 and our positive results. We invited teachers and headteachers from other schools to observe lessons. After a discussion with our headteacher, teachers could

decide if and who will open his/her classroom door to the wider public by giving demonstrations of good practice with C 365. Eight teachers took on this opportunity, which means one third of our teaching staff.

In 2016/17, we started with short learning walks with our teachers. The aim was to encourage other teachers, who had not used C 365 before that, to use it in their classrooms.

Informal discussions about the use of C 365 took place in the staff room. We recognised that we had become a tighter teaching/learning community because of the use of C 365. Our learning community is characterised by:

- team learning, building a shared vision, system thinking;
- continuous learning, encouraging innovativeness, linking technology and learning, changing teams;
- connected and simultaneous collaboration during all processes, responsiveness and adjustment of all elements, interdependence.

We have developed an open way of teaching which means that pupils:

- are capable of self-motivation;
- can search for information by using different technologies;
- play a key role in the learning process.

The role of the headteacher

The headteacher initiated changes and piloted them into practice. She supported all innovations and changes and she encouraged the teaching staff to use the opportunity to explore and develop their professional practice. She supported coordinators and monitored and evaluated all phases of the process. She observed lessons in order to evaluate progress and consulted with teachers when needed. She understood the pupils' needs and informed the parents about changes.

Benefits of participation in the introduction of C 365

Teachers:

- do self-learning;
- collaborate;
- act as a learning community;
- are motivated to work;
- introduce changes in teaching;
- put pupils in the centre of the learning process;
- introduce formative assessment;
- present good practice of using C 365 at international conferences;
- build on their self-image;
- build on their own practice.

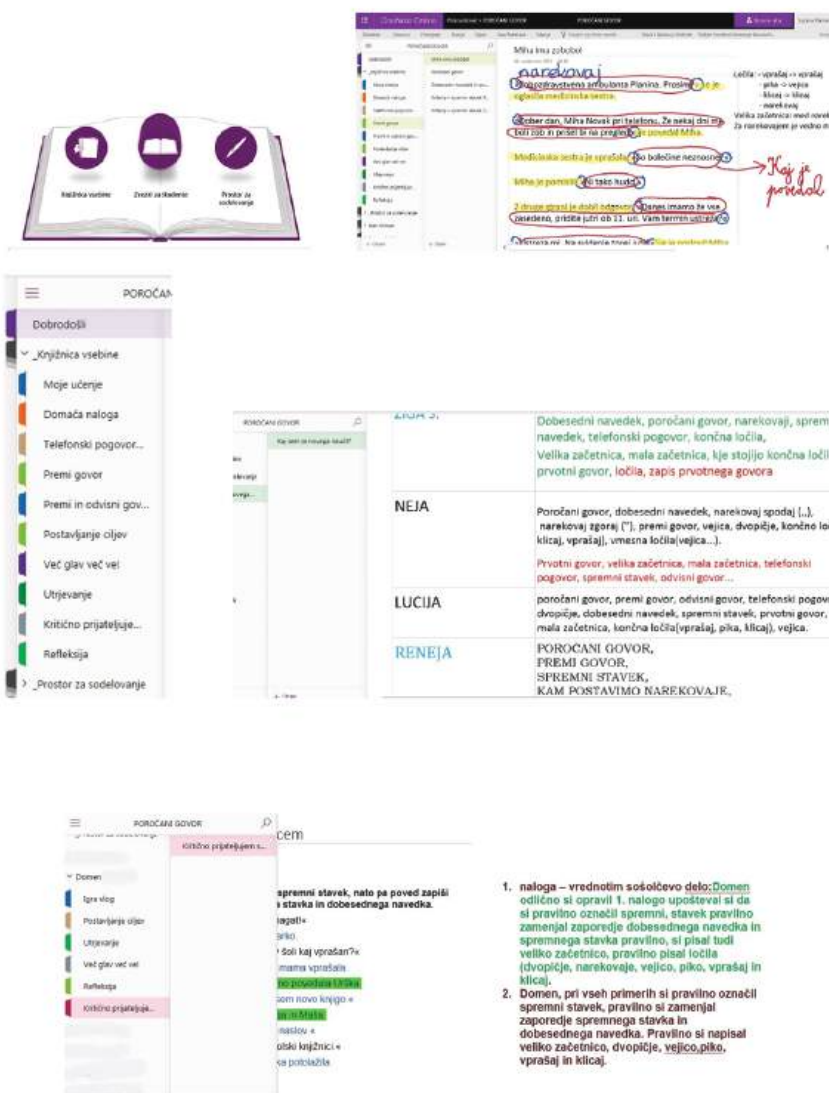
Pupils:

- are motivated for learning;
- responded – even lower achievers are successful in using ICT;
- achieve excellent results at international competitions;
- use ICT independently (have become more ambitious users of modern technology);
- can set criteria and goals;
- self-assess their knowledge.

Headteacher:

We developed a connective team of teaching staff who:

- do not hesitate to introduce changes in their practice;
- are able to develop good practice;
- can follow trends in teaching;
- can present their work to the wider public.



Picture 1: An example of a digital notebook as support to formative assessment

SWEDEN

A school working very systematically to integrate students from classes with students of special needs (in Swedish “grundsärskolan”) with the rest of the school.

The concrete example given was teacher co-operation while teaching about World War 2 in History. The aim is to develop inclusive education both from a more structural level (sharing rooms and practical arrangements) to the pedagogical and learning levels.

Involved teachers/schools and the role of the head

Co-operation between “grundsärskolan” (students of special needs) year 1 and secondary school year 9. The teachers working in the secondary school made the lesson plans, all students in year 1 and year 9 were involved.

The role of the headteacher is to enhance class goals, put them in the forefront and to make them possible through structures and other conditions.

Scheduled time for cooperation between teachers

The overall aim is to increase teacher competences and gain more knowledge about pupils with special needs.

Activities are evaluated regularly.

Motivation (starting points)

Co-operation between the different school levels started five years ago. The starting points for this example are:

- A shared definition of inclusive education;
- Learning areas for both staff and students;
- Headteacher showing the importance of developing inclusive education;
- Pupils of “grundsärskolan” are included as much as possible in secondary school life;
- More co-operation between teachers;
- All staff participate.

Benefits

The school now has a shared definition of inclusive education. The students from the special needs comprehensive school are more socially included and are participating more socially and actively than before.

Focus on the pedagogical part of inclusive education.

Experience – limits, challenges

The obstacles to inclusive education are not the students. It’s more about how teachers and the headteacher think about inclusive education, what’s possible, and the culture of the school.

Follow up (sustainability)

This example of good practice is a part of a five-year project on inclusive education. To make it sustainable, the school has scheduled time during the school year, to focus on inclusive education.

UNITED KINGDOM

UK1 A school company (Consortium)

The Consortium is a network of 13 primary schools within one County in the UK. The collaboration began as a 'Teaching School Alliance' funded directly by the UK government. In order to be funded in this way, there had to be a lead school that had an 'outstanding' rating from 'Ofsted' (Office for Standards in Education) and the school had to meet various criteria to receive funding. Unfortunately, after a fairly short time, the lead school lost its status as it received only a 'good' rating from Ofsted.

As a result of this difficult situation, the Consortium was set up as a not-for-profit limited company. It has formal structures around financial management, a directorship and other characteristics of a limited company. The Consortium's strategic agenda is driven by school leaders, not external agendas. The company is owned by 13 schools, while the risk of running the 'company' is shared by all the headteachers of the participating schools. The schools are led by headteachers that can really see that collaboration is the only way forward and they are the core leadership group. The Consortium also has buy-in options (of professional learning and other services) from more than three-quarters of the schools (approximately 150 schools) across the County. "They want to work with us because we will continue to meet needs, be affordable and represent local school needs, but draw on practice from all over the country" (UK1) The headteachers involved are so committed and altruistic. They want to help all the schools and do not make any financial profit from the business.

Our programmes are much more affordable for schools and the benefit for the 13 schools within the Consortium is that they get to direct and actually influence what we do. They know the issues in their school are common to others. If you are one of the schools in the Consortium, you get your seat at the table to say 'I really think we need to look at this as a theme' or 'I really don't think this part of what we do is working'. Consequently, with this local strategic overview, the offer appeals to many across the County. The company led by these 13 schools supports a wider group of schools across the County and has an impact on 30,000 pupils. The decision-making group is a "flat structure where we do not have one school in a lead role and I think that's how we've been able to sustain" (UK1) the collaboration. The Consortium leads a lot of different networks, in different subject areas and involves different groups of staff that bring groups of schools together e.g. maths subject leaders, early years leaders, SENCOs and more, to work on developing their practice so that there are those sort of subject-specific support groups for teachers in their area of teaching. Smaller groups then work on themes that they have identified as important, in their teaching setting.

“That is why the Consortium is in such a fantastic position because it’s led by headteachers and the way that it works most effectively for us is that the agenda is led by the headteachers, operating in a network. It is very current, it is very relevant, it is very representative of a lot of primary schools across the County and address the key needs and the things people want to look at and know more about. However, the programme of development is not managed by those schools, it’s managed by me (headteacher) and my team. We haven’t got a day job in school, we are not distracted by the everyday workload and *have a degree of independence.*” (UK1)

The groups have an understanding of local needs and represent a very large, specific geographical area. They have clear protocols and ways of working which have arisen from the cooperative history with the Local Education Authority – they are given a small amount of money by the local authority, “which will probably reduce to zero very, very soon.” (UK1). They support each other and so they identify with the schools that are more vulnerable and the other schools support those schools and they set up peer networks for new headteachers. They conduct audits to determine where they have strengths and where there are areas in need of development, and they do CPD together, they do moderation, they do whatever they decide they need to do together.

Appendix 2 Questionnaire

Leading Learning by Networking

Dear Headteacher,

We would be very grateful if you could take the time to fill out this questionnaire.

Our ERASMUS+ project has been funded to develop a programme to support leaders of networks. We have developed this questionnaire in order to find out how you are leading learning by networking and to what extent you and your staff are involved in networks. We also wish to learn about your professional development needs in this field.

The educational landscape is constantly changing which means that professionals in school constantly have to adapt their approaches to teaching and learning. Professional learning networks have been shown to provide the conditions that foster teachers' learning and development. Collaboration between teachers can occur in many different forms, both spontaneously or formalised. In this questionnaire, we used the term *professional learning network (PLN)* for any group who engage in collaborative learning with others, outside of their everyday community of practice, in order to improve teaching and learning in their school and/or school system.

ABOUT THE HEADTEACHER

1. **Gender**
☐ Female ☐ Male ☐ Prefer not to say
2. **Years of service as Principal**
Years: _____

ABOUT THE SCHOOL

3. **Type/level of school**
☐ Pre-School/Early Years
☐ Primary Education
☐ Lower Secondary Education

4. Size of the school (number of pupils, teachers)

Number of pupils: _____

Number of teaching staff: _____

(If responsible for more than one school, please state the number of schools you are responsible for: _____)

NETWORKING PRACTICE IN THE SCHOOL

5. Teachers involved in networks

Select a response in the range from 1 (NOT AT ALL) to 4 (FULLY).

To what extent are teachers involved in different kinds of collaboration and networks?		1	2	3	4
a	Informal collaboration within school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Informal collaboration between schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Self-regulated networks within schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Self-regulated networks between schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Formal organised networks within school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Formal organised networks between schools	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Other networks within and/or between schools. Give examples	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. Topics for networking

Select a response in the range from 1 (NOT AT ALL) to 4 (FULLY).

	To what extent are the organised networks involved with the following topics?	1	2	3	4
a	Curriculum content development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Teaching method development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Development of pupil competence	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	To support school specialisation/development/improvement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Development of school leadership capacity	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Other focus? Give example	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Conditions for networks

Select a response in the range from 1 (NOT AT ALL) to 4 (FULLY).

	To what extent are the following conditions influencing the networks in your school?	1	2	3	4
a	Formal structures and organisation of networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Decentralized structures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Frequent and close interaction between teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Teacher reflective exchange of knowledge, ideas and norms	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Access to expertise and competences within the network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Access to external expertise and competences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Teachers have opportunities to exchange and share knowledge and ideas with others outside the network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

8. Purpose of the networks

Select a response in the range from 1 (NOT AT ALL) to 4 (FULLY).

	What is the purpose of the organised networks in your school?	1	2	3	4
a	Share experiences	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Share information	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Spread and use of materials, methods or ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Reproduction of shared materials, methods or ideas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	Systematically collect and analyse school-based data	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	Developing new approaches to teaching challenges	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Other purposes? Give example	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

9. Characteristics of professional learning networks

Select a response in the range from 1 (NOT AT ALL) to 4 (FULLY).

	To what extent do the networks in your school have the following characteristics?	1	2	3	4
a	Shared values provide a framework for collective decision-making in the networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	A shared vision on how a diverse student population can be seen both as a strength and as a challenge for teaching and learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Teachers in the networks take collective responsibility for the learning of students	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Teachers use reflective dialogue to develop and share new knowledge	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	To what extent do the networks in your school have the following characteristics?	1	2	3	4
e	Teachers apply new ideas to problem solving and generate solutions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	The introduction of new approaches to teaching are considered unachievable without collaboration within a network	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Difference, debate and disagreement are viewed as foundation stones of improvement by the teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	Learning is promoted both on the individual and group level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Other characteristics? Give an example	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

10. The role of the headteacher

Select a response in the range from 1 (NOT AT ALL) to 4 (FULLY).

	To what extent do you ... in relation to teachers networking?	1	2	3	4
a	have a strong belief in and a commitment to collaboration and networking for learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	build trust and positive working relationships within school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	create and enhance a learning culture among staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	have focus on the learning of pupils	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	have focus on the learning of teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	involve and interact with the networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	provide external input	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	facilitate teachers networking by allowing time	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	facilitate teachers networking by providing space	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	make sure that networks have an external supervisor and/or contact with other networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. Challenges to creating professional learning networks

Select a response in the range from 1 (NOT AT ALL) to 4 (ESSENTIAL).

	How important are the following areas to the creation of professional learning networks?	1	2	3	4
a	Financial resources	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	Time for staff to meet and talk regularly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	Spaces to meet	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	Policy support	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	School leader support and commitment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	External support (for example a supervisor)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	How important are the following areas to the creation of professional learning networks?	1	2	3	4
f	A shared school vision	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	Trustful relationships	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	A culture of collaboration between teachers	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	A need for learning at both the individual, group and school level	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
j	Ways of distributing and sharing new knowledge to others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
k	Other areas? Give example	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

12. Training requirements

Select a response in the range from 1 (NOT AT ALL) to 4 (ESSENTIAL).

	I need additional training in . . .	1	2	3	4
a	how to create and enhance a learning culture amongst staff	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
b	how to build trust and positive working relationships within the school	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
c	how to build structures for sustainable, personal and interpersonal capacity development	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
d	how to stimulate and support the quality of individual and group learning processes	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
e	how to foster collective responsibility for student learning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
f	how to develop a shared vision for working in networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
g	how to extend and distribute new knowledge within the organisation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
h	how to work with teacher motivation and commitment towards professional learning networks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
i	Other training needs? Please specify	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. Other comments

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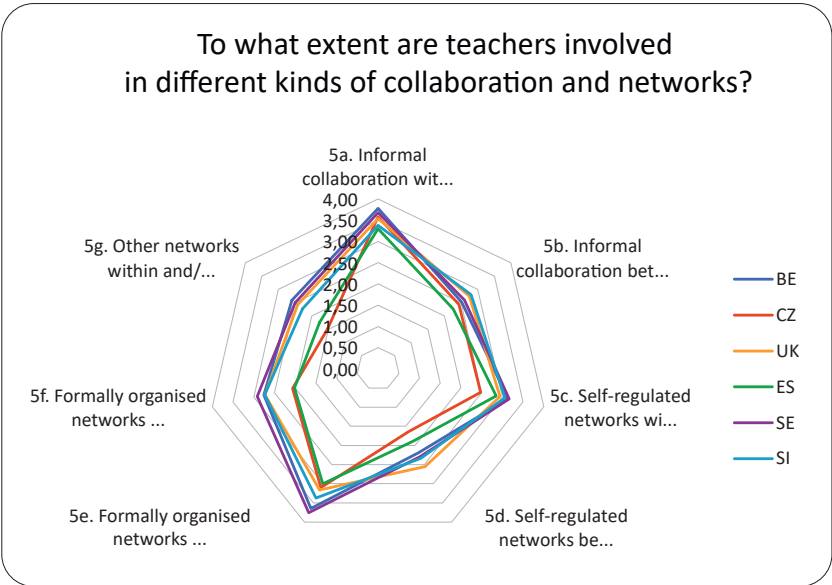
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Thank you! Results will be available on the project website.

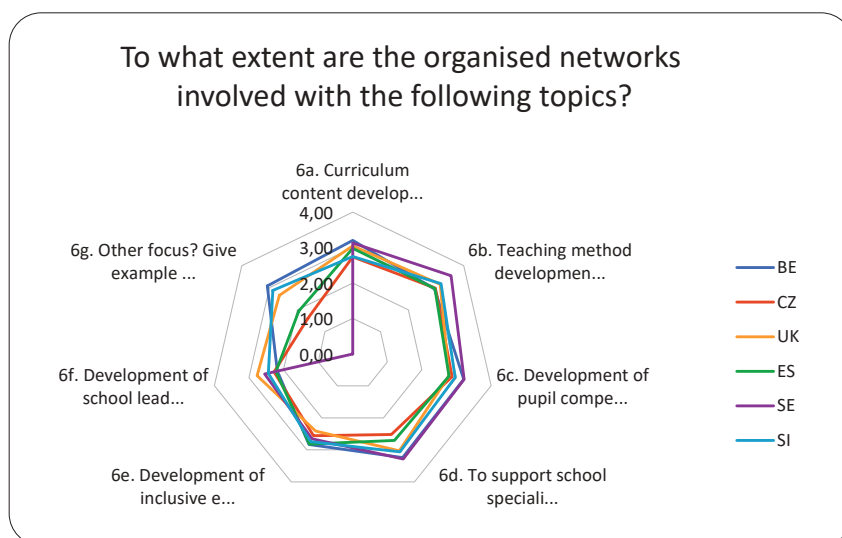
Appendix 3 Results by countries and the aggregate level of analysis

The following tables and graphs show the results as means for each participating country. The scale 1 (NOT AT ALL) to 4 (FULLY/ESSENTIAL).

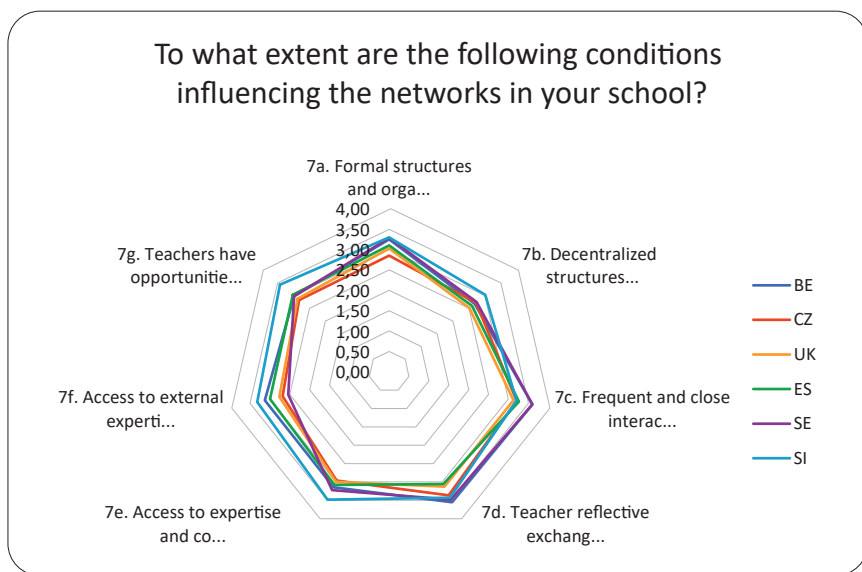
To what extent are teachers involved in different kinds of collaboration and networks?						
	BE	CZ	UK	ES	SE	SI
5a. Informal collaboration within school	3,78	3,58	3,54	3,30	3,68	3,38
5b. Informal collaboration between schools	2,52	2,44	2,75	2,27	2,60	2,80
5c. Self-regulated networks within school	3,14	2,48	2,94	2,85	3,17	3,06
5d. Self-regulated networks between schools	2,19	1,64	2,55	1,89	2,29	2,33
5e. Formally organised networks within school	3,65	3,10	3,16	3,00	3,76	3,38
5f. Formally organised networks between schools	2,76	2,07	2,73	2,02	2,92	2,73
5g. Other networks within and/or between schools	2,59	1,52	2,42	1,76	2,50	2,27



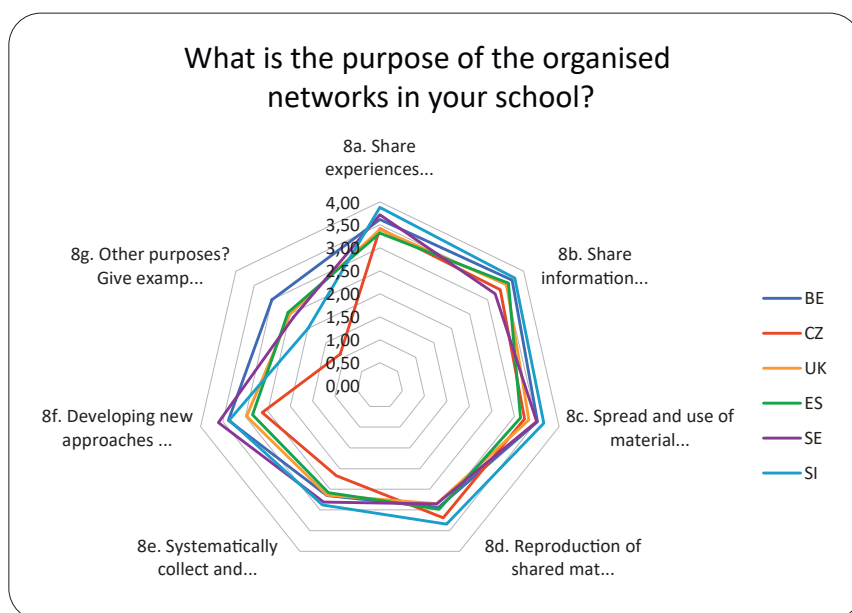
To what extent are the organised networks involved with the following topics?						
	BE	CZ	UK	ES	SE	SI
6a. Curriculum content development	3,20	2,74	3,05	2,98	3,13	2,75
6b. Teaching method development	2,94	2,98	3,15	2,96	3,54	3,18
6c. Development of pupil competence	3,21	2,87	2,78	2,78	3,22	2,96
6d. To support school specialisation/ development/ improvement	3,24	2,51	3,03	2,70	3,29	3,06
6e. Development of inclusive education	2,83	2,55	2,41	2,82	2,65	2,74
6f. Development of school leadership capacity	2,18	2,27	2,76	2,22	2,55	2,44
6g. Other focus? Give example ...	3,08	1,62	2,65	1,95	0,00	2,88



To what extent are the following conditions influencing the networks in your school?						
	BE	CZ	UK	ES	SE	SI
7a. Formal structures and organisation of networks	3,25	2,85	3,03	3,10	3,28	3,30
7b. Decentralised structures	2,68	2,72	2,51	2,60	2,74	3,02
7c. Frequent and close interactions between teachers	3,60	3,21	3,13	3,27	3,60	3,20
7d. Teacher reflective exchange of knowledge, ideas and norms	3,55	3,36	3,13	3,06	3,48	3,43
7e. Access to expertise and competences within networks	3,15	2,96	3,00	3,08	3,22	3,48
7f. Access to external expertise and competences	3,13	2,68	2,76	3,00	2,54	3,32
7g. Teachers have opportunities to exchange and share knowledge and ideas with others outside of the network	2,98	2,83	2,88	3,02	2,98	3,43

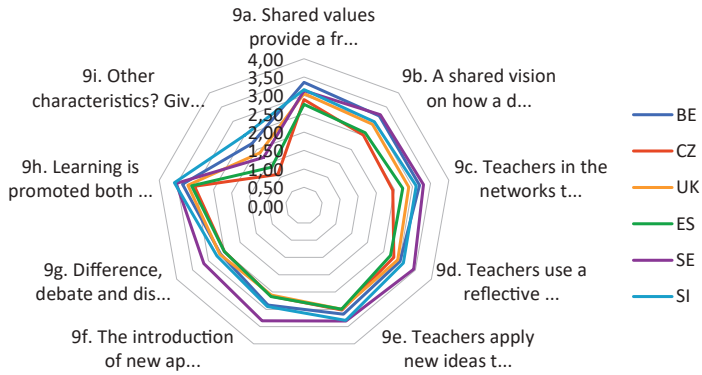


What is the purpose of the organised networks in your school?						
	BE	CZ	UK	ES	SE	SI
8a. Share experiences	3,62	3,42	3,40	3,32	3,72	3,88
8b. Share information	3,68	3,35	3,53	3,58	3,20	3,76
8c. Spread and use of materials, methods or ideas	3,52	3,23	3,33	3,14	3,50	3,66
8d. Reproduction of shared materials, methods or ideas	2,94	3,19	2,85	2,98	2,85	3,34
8e. Systematically collect and analyse school-based data	2,65	2,17	2,64	2,58	2,81	2,88
8f. Developing new approaches to teaching challenges	3,38	2,63	2,97	2,84	3,60	3,36
8g. Other purposes? Give examples	3,00	1,10	2,50	2,56	2,40	2,00

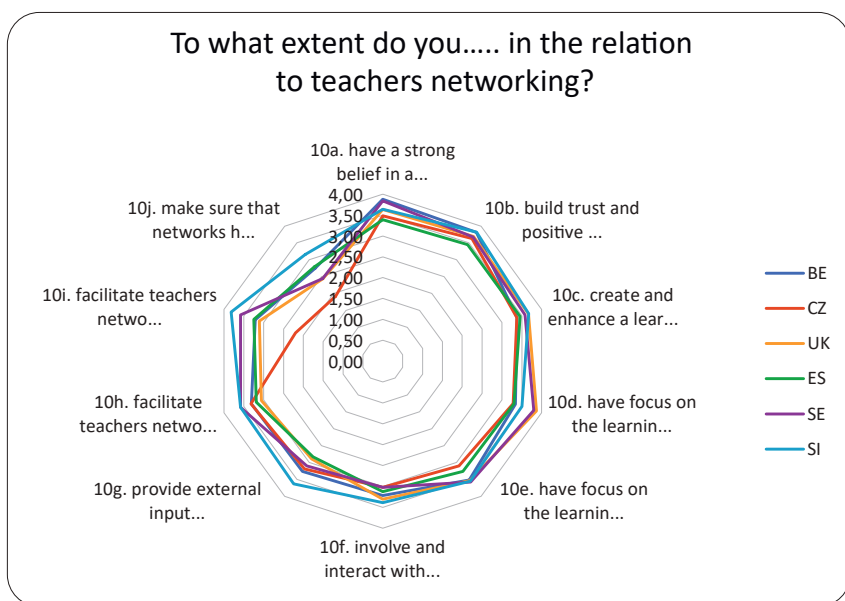


To what extent do the networks in your school have the following characteristics?						
	BE	CZ	UK	ES	SE	SI
9a. Shared values provide a framework for collective decision-making in the networks.	3,35	2,89	3,05	2,76	3,13	3,16
9b. A shared vision on how a diverse student population can be seen both as a strength and as a challenge for teaching and learning	3,19	2,51	2,89	2,60	3,23	2,98
9c. Teachers in the networks take collective responsibility for the learning of the students.	3,19	2,45	2,90	2,73	3,30	3,10
9d. Teachers use reflective dialogue to develop responsibility for the learning of students	3,02	2,82	2,95	2,71	3,45	3,12
9e. Teachers apply new ideas to problem solving and generating solutions	3,14	3,02	3,00	3,00	3,34	3,32
9f. The introduction of new approaches to teaching are unachievable without collaboration within a network	2,88	2,62	2,59	2,63	3,33	2,92
9g. Difference, debate and disagreement are viewed as foundation stones of improvement by the teachers	2,63	2,50	2,64	2,50	3,15	2,74
9h. Learning is promoted both on the individual and group level	3,35	3,02	3,21	3,10	3,53	3,58
9i. Other characteristics? Give examples...	2,20	1,11	1,88	1,36	1,71	2,50

To what extent do the networks in your school have the following characteristics?

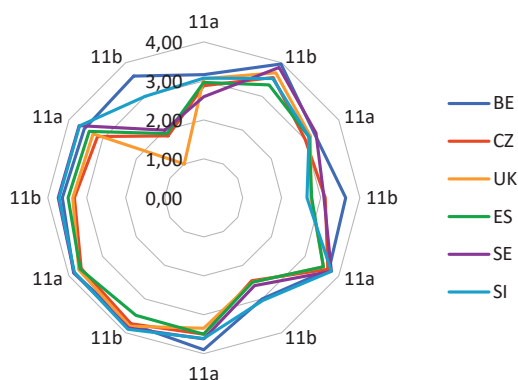


To what extent do you..... in relation to teachers networking?						
	BE	CZ	UK	ES	SE	SI
10a. have a strong belief in and a commitment to collaboration and networking for learning	3,88	3,48	3,63	3,39	3,84	3,64
10b. build trust and positive working relationships within school	3,82	3,63	3,69	3,45	3,68	3,82
10c. create and enhance a learning culture in school	3,38	3,38	3,67	3,46	3,58	3,67
10d. have focus on the learning of pupils	3,34	3,29	3,87	3,31	3,80	3,50
10e. have focus on the learning of teachers	3,52	3,10	3,54	3,27	3,58	3,56
10f. involve and interact with the networks	3,22	3,02	3,31	3,13	3,02	3,39
10g. provide external input	3,27	3,19	2,90	2,83	3,10	3,63
10h. facilitate teachers networks by allowing time	3,31	3,32	3,05	3,18	3,58	3,58
10i. facilitate teachers networking by providing space	3,21	2,20	3,11	3,24	3,58	3,82
10j. make sure that networks have an external supervisor and/or contact with other networks	2,75	1,92	2,44	2,79	2,45	3,16

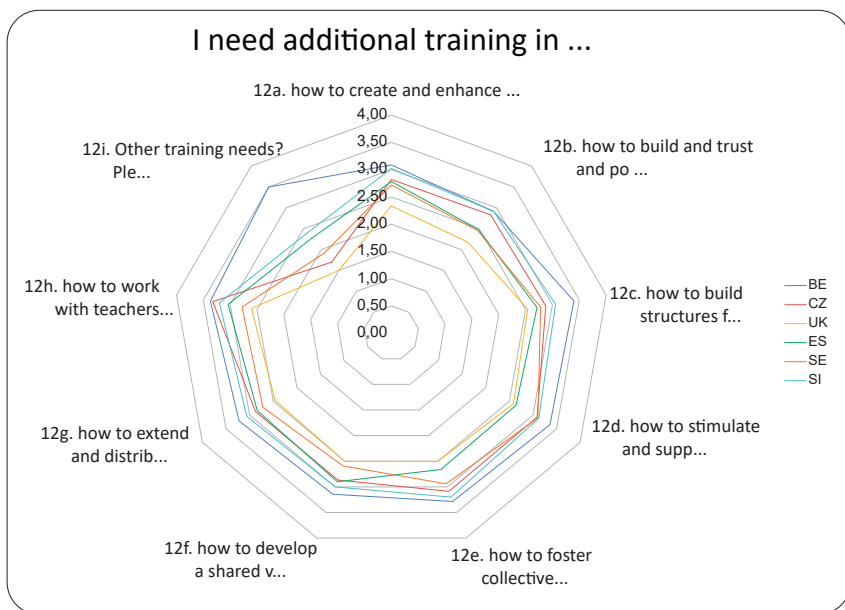


How important are the following areas to the creation of professional learning networks?						
	BE	CZ	UK	ES	SE	SI
11a. Financial resources	3,16	2,87	3,05	2,96	2,59	3,07
11b. Time for staff to meet and talk regularly	3,96	3,56	3,70	3,34	3,86	3,53
11c. Spaces to meet	3,28	3,00	3,15	3,12	3,32	3,12
11d. Policy support	3,64	3,11	2,75	2,77	3,09	2,65
11e. School leader support and commitment	3,70	3,67	3,55	3,54	3,78	3,78
11f. External support (for example a supervisor)	3,00	2,46	2,50	2,50	2,60	3,04
11g. A shared school vision	3,90	3,50	3,35	3,50	3,62	3,61
11h. Trustful relationships	3,74	3,73	3,80	3,48	3,86	3,90
11i. A culture of collaboration between teachers	3,86	3,63	3,70	3,66	3,84	3,84
11j. A need for learning at the individual, group and school level	3,63	3,32	3,36	3,48	3,73	3,71
11k. Ways of distributing and sharing new knowledge to others	3,54	3,15	3,28	3,40	3,69	3,68
11l. Other areas? Give example...	3,60	1,83	1,00	1,90	2,00	3,00

How important are the following areas to the creation of professional learning networks?



I need additional training in ...						
	BE	CZ	UK	ES	SE	SI
12a. how to create and enhance a learning culture amongst staff	3,08	2,82	2,33	2,78	2,72	3,02
12b. how to build trust and positive working relationships within school	2,92	2,83	2,18	2,48	2,46	2,92
12c. how to build structures for sustainable, professional and interpersonal capacity development	3,40	2,88	2,54	2,71	2,78	3,06
12d. how to stimulate and support the quality of individual and group learning processes	3,36	3,08	2,59	2,64	3,10	3,12
12e. how to foster collective responsibility for student learning	3,29	3,09	2,50	2,66	2,94	3,20
12f. how to develop a shared vision for working in networks	3,14	2,87	2,50	2,90	2,59	3,00
12g. how to extend and distribute new knowledge within the organisation	3,22	2,88	2,46	2,84	2,72	3,06
12h. how to work with teachers motivation and commitment towards professional learning networks	3,37	3,33	2,61	3,04	2,78	3,20
12i. Other training needs? Please specify...	3,50	1,70	1,50	2,27	1,92	2,40



The aggregate level of analysis

For the next step of the analysis, calculation of the cumulative indexes based on the thematically defined sets of questions was done. The cumulative indexes were constructed based on the averages achieved from each questionnaire section (the two-item area *Purpose of the data* was not taken into account in further work with the cumulative indexes). Reliability of the indexes was checked using the Cronbach's Alpha coefficient, which is based on mutual correlations of the items and it tests the internal consistency of the index. The recommended value of the Alpha measure is between 0.7 and 0.9. Values higher than 0.9 indicate weak variability, due to stereotypical answers to almost identical question sets. These indexes were used to compare the summarised information obtained from the below-mentioned question sets across the controlled variables (country, sex etc.).

Internal consistency of the questionnaire by areas

	Number of items	Alpha
Teachers involved in networks	7	.645
Topics for networking	7	.728
Conditions for networks	7	.774
Purpose of networks	7	.735
Characteristics of professional learning networks	9	.847
The role of the headteacher	10	.887
Challenges to creating professional learning networks	12	.844
Training requirements	9	.884

Comparison of mean index values

The next section shows a cross-country comparison of the indexes and country profiles presented both in a table and as a graph. The green marked index values point out the maximum mean value for the group and red sections show the minimum value for the group.

Indexes by countries and questionnaire sections

	BE	CZ	UK	ES	SE	SI
5.Teachers involved in networks	2,98	2,48	2,88	2,50	3,02	2,92
6.Topics for networking	2,94	2,59	2,85	2,69	3,12	2,86
7.Conditions for networks	3,21	2,95	2,92	3,02	3,13	3,31
8.Purpose of networks	3,29	2,94	3,09	3,04	3,25	3,47
9.Characteristics of professional learning networks	3,08	2,69	2,88	2,72	3,28	3,11
10.The role of the headteacher	3,37	3,15	3,32	3,21	3,42	3,58
11.Challenges to creating professional learning networks	3,58	3,25	3,27	3,23	3,43	3,45
12.Training requirements	3,23	2,94	2,44	2,74	2,74	3,06

Comparison of mean index values by gender

	Male	Female	Prefer not to say
5.Teachers involved in networks	2,77	2,81	2,44
6.Topics for networking	2,74	2,88	2,68
7.Conditions for networks	2,97	3,17	2,76
8.Purpose of networks	3,08	3,24	2,95
9.Characteristics of professional learning networks	2,78	3,08	2,38
10.The role of the headteacher	3,29	3,39	2,72
11.Challenges to creating professional learning networks	3,24	3,45	2,88
12.Training requirements	2,89	2,88	2,29

Comparison of the mean index values by school leader experience (years of service)

	0 to 3 years	4 to 10 years	more than 10 years
5. Teachers involved in networks	2,77	2,86	2,75
6. Topics for networking	2,76	2,93	2,82
7. Conditions for networks	3,11	3,14	3,03
8. Purpose of networks	3,13	3,20	3,24
9. Characteristics of professional learning networks	2,90	3,04	2,97
10. The role of the headteacher	3,34	3,39	3,31
11. Challenges to creating professional learning networks	3,41	3,30	3,42
12. Training requirements	2,89	2,75	3,00

Comparison of the mean index values by type of school

	Pre-school/ early years	Primary education	Lower secondary education
5. Teachers involved in networks	2,79	2,83	2,74
6. Topics for networking	2,86	2,86	2,77
7. Conditions for networks	3,12	3,13	3,08
8. Purpose of networks	3,17	3,22	3,19
9. Characteristics of professional learning networks	3,05	3,04	2,90
10. The role of the headteacher	3,29	3,36	3,36
11. Challenges to creating professional learning networks	3,43	3,39	3,32
12. Training requirements	2,85	2,88	2,90

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**LEADING LEARNING
NETWORKS IN EDUCATION**

Theoretical Framework and School
Leaders' Perspectives across Europe

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