

Networked Professional Learning

Citation for published version (APA):

Littlejohn, A., Jaldemark, J., Vrieling - Teunter, E., & Nijland, F. J. (2019). Networked Professional Learning: An Introduction. In A. Littlejohn, J. Jaldemark, E. Vrieling-Teunter, & F. Nijland (Eds.), *Networked Professional Learning: Emerging and Equitable Discourses for Professional Development* (pp. 1-11). Springer.
https://doi.org/10.1007/978-3-030-18030-0_1

DOI:

[10.1007/978-3-030-18030-0_1](https://doi.org/10.1007/978-3-030-18030-0_1)

Document status and date:

Published: 01/01/2019

Document Version:

Publisher's PDF, also known as Version of record

Document license:

Taverne

Please check the document version of this publication:

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Chapter 1

Networked Professional Learning: An Introduction

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Keywords Networked Professional Learning; informal learning; teacher education; higher education

Our starting point

Over the past decades a new form of professionalism has emerged, characterized by factors of fluidity, instability and continual change (Beck, 2000; De Laat, Schreurs, & Nijland, 2014). These factors diminish the validity of traditional career trajectories, where people would learn the professional knowledge they needed to follow a vocational pathway (Billett, 2001). New forms of professional development that support agile and flexible expansion of professional practice are needed (Tynjälä, 2008). Ideally these forms of development would be integrated into work, rather than being offered as a form of training in parallel to work (Felstead, Fuller, Jewson, & Unwin, 2009). Through the integration of work and learning, professionals could develop new forms of practice in efficient and effective ways.

At the same time, the digitization of work has had a profound effect on professional practice (Huws, 2014). This digitization opens up opportunities for new forms of professional learning mediated by technologies through networked learning (Littlejohn & Margaryan, 2014). Networked learning is believed to lead to a more efficient flow of complex knowledge and routine information within the organization (Coburn, Mata, & Choi, 2013; Reagans & Mcevily, 2003), stimulate innovative behaviour (Coburn et al., 2013; Moolenaar, Daly & Slegers, 2010; Thurlings, Evers, & Vermeulen, 2014) and result in a higher job satisfaction (Flap & Völker, 2001; Stoll, Bolam, McMahon, Wallace & Thomas, 2006). In this respect, networked learning can be perceived as an important perspective on both professional and organizational development.

There is evidence that professionals learn in informal networks, yet networked learning has been largely invisible to professionals, managers and organisations as a form of professional development (Milligan, Littlejohn, & Margaryan, 2013). One reason could be because learning in networks requires specific competences that have to be acquired either through practice or in educational training, bringing new forms of professionalism.

Another reason could be because learners may determine their own learning pathways, rather than relying on a teacher or trainer to guide them. These pathways may include observing colleagues who have greater expertise (Billett, 2011) or learning through working (Eraut, 2000). In these situations, learners may seem invisible. Alternatively, they may stray across traditional boundaries as they learn (Daniels, Edwards, Engeström, Gallagher, & Ludvigsen, 2013). This book, *Networked Professional Learning*, critiques the potential of networked learning as a platform for professional development. The concept of learning through work is, therefore well established and the use of the network as a medium for learning expands beyond the notion of 'Professional Development' which often is considered as formal, structured learning towards a more fluid and embedded form of learning for work which we term Networked Professional Learning.

The book draws together the work of 35 experts across 6 countries spanning 3 continents, including Denmark, Sweden, the Netherlands, Australia, Israel and the UK. The book will be of interest to researchers in the area of professional and digital learning, higher education managers, organizational Human Resource professionals, policy makers and students of technology enhanced learning. A unique feature of the text is that it not only provides examples of Networked Professional Learning, but it questions the impact of this emerging form of learning on work practice and interrogates the impact on the professionals of the future. To achieve this goal, the book is structured into three sections that explore networked professional learning from varying different perspectives, questioning what are legitimate forms of networked professional learning (Part 1 on Networked Professional Learning across the Professions), how new forms of professional learning impact the Academy (Part 2 on Higher Education) and what is the value creation that Networked Learning offers education professionals (Part 3 on Teacher Education).

Part one explores networked professional learning across a number of professions, focusing on troublesome themes, such as new forms of professionalism, boundary crossing and the role of the 'invisible learner'. Universities have played an important role in providing forms of professional development. Thus, the second question focuses on how evolution of Networked Professional Learning is influencing Higher Education. This question is explored in the second part, by examining key themes including the role of Higher Education in professional development and the necessary changes in teaching practices and mindsets. The third part of the book situates Networked Professional Learning within a broader educational, economic and social context, raising questions around the development and roles of the teachers of the future. Each section is outlined below:

Part I: Networked professional learning across the professions

Contemporary work requires continual learning aligned with work. This means that professionals are likely to learn through the activities they carry out as part of their job than through formal training or education. Once professionals have reached a particular level of expertise the continually need to learn new concepts or develop novel forms of practice. The learning they need might not be available through a pre-prescribed curriculum with 'known' outcomes, or the knowledge they need to learn might best be learned through practice. This means they work together with others to develop new forms of practice, as a form of professionalisation. This way of working and learning requires different professions to cross boundaries and to work together to formulate these new practices. For example police and dentists might work together to formulate new ways of detecting early signs of domestic abuse from dental records. This form of working together delineates who is the 'tutor' from who is the 'student', emphasising another form of boundary crossing. Tutors' roles shift to guiding

students in the network to collaborate and expand their practice, while the students shift back and forth between acting in ways that would conventionally be understood as tutors and as learners (demonstrating the theme of boundary crossing). One issue in professional, networked learning is that the 'invisible' learner, who may be observing and not contributing, or may be following his/ her own learning pathway. How do tutors know these people are learning? Conventionally tutors are the people who provide guidance and knowledge, but in circumstances where roles are alternating between tutor-student, this relationship is more complex. In this sense some 'learners' may be acting as 'tutors' and thus may be invisible as learners (foregrounding the theme of the invisible learner). These issues are significant for networked learning within professional contexts. This section explores these various issues, presenting illustrative examples.

For example, in *Professional learning in Open Networks*, Dalsgaard, Chaudhari and Littlejohn trace how midwives self-regulate their learning in Massive Open Online Courses. The authors outline how a validated survey instrument was used to measure self-regulated learning in MOOCs. The survey was distributed as a post-course online survey to 2039 enrolled participants. 217 participants completed the questionnaire, equivalent to a response rate of 11, higher than the normal response rate in MOOCs.

The analysis identified seven specific factors that influence the ways midwives learning in the MOOC. The study provides evidence that midwives' approach to networked learning is aligned to their practice, with findings suggesting that the midwives' learning in the MOOC was characterised through self-reflection and expansive critical thinking. Boundary crossing is illustrated, as participants act as learners while, at the same time, indirectly or directly teaching other MOOC participants.

The theme of learning in MOOCs is expanded by Dalsgaard and Gislev in the chapter on *New educational formats for professional development*. Whereas the previous chapter focused on the pro-activity of a large number of learners., this chapter explores the actions and intentions of those who, from a tutor's point of view, appear to be disengaged. Here, the authors highlight that networked professional learning has to accommodate learners who appear 'invisible'. The authors' motivation for writing this chapter originates in an interest in the so-called 'dropouts'; non-completing or disengaged participants of Massive Open Online Courses (MOOCs). They term this group 'invisible learners', defined as the non-active and disengaged participants of MOOCs, who do not participate in and complete the course activities and possibly also drop out of the course. The chapter characterises different learner groups in MOOCs, and discusses which educational formats can accommodate invisible learners to achieve their professional development needs. The chapter is based on an empirical study of an open online course designed specifically for different types of learner engagement by allowing for different levels of participation. The study draws on 11 interviews and a questionnaire answered by 51 participants. The analysis identifies five different levels of participation, named students (enrolled), attendees, members, observers and visitors. The chapter concludes that activities and assignments of students and attendees in a MOOC can provide a key centre for networked learning activities of invisible students that use these activities as part of or as an extension of their own professional practices.

The first two chapters consider professional networked learning as a form of online learning. Yet learning at work often is blended, integrating online activity with face-to-face interaction. This final chapter in this part of the book examines professional networked learning as a form of blended learning. Organisations have to prepare their workers to deal with crisis situations, such as a school shooting, extreme weather flooding, a health pandemic and so on. These

circumstances make it difficult to anticipate what needs to be learned and how, because it is impossible to know in advance who will be involved and what they need to be able to do. The chapter examines networked roleplay exercises where employees learn to deal with crisis situations. The chapter considers these learners in terms of a community of inquiry, since it is assumed that learning communities create awareness, trust, and support knowledge sharing, all of which are necessary pre-conditions for people working together in crisis management situations. The study found that various types of communities may develop within a crisis situation: home communities, cohort communities, specialist communities and local working groups. These expanded views of communities could be used to help plan informal Networked Professional Learning in the future.

Part II: The impact of Networked Professional Learning on the Academy

Networked professional learning has an impact on higher education. This impact includes potential changes in what the university is and should be. Among others, this development implies challenges to higher education practice and changes in the way professionals at the universities teach, research and reach out to the surrounding society. In other words, professional development within higher education needs to adapt to the societal and technological changes and challenges. This process emphasises professional development in terms of being a networked phenomenon where learning is linked to both internal as well as external networks. Such professional development features hybrid educational settings where older boundaries between different educational settings dissolve and possibilities to cross boundaries are important.

Professional development in higher education is a phenomenon that needs to be discussed at different levels. It relates to changes at the individual level and the transformation of practice at the organisational level. Simultaneously, higher education aims at developing professionals. This aim includes students and their teachers as well as supporting professional development within working-life. For higher education staff this implies two different and intersecting tasks. First, the mission to prepare students for working life in such a qualitative way that students are able to understand the value of a lifelong professional development perspective in their future working lives. In other words, prepare them to perform professional development. Second, higher education staff should be able to perform professional development within their own practices.

The section includes different issues of networked professional development in higher education. These issues emphasise the embridgement of earlier formal professional development initiatives with informal networked professional learning occurring in workplace settings. Some of these issues aim at philosophical questions, others more clearly relate to details in the preparation for and performance of professional development. The section will discuss how networked learning practices impacts the design of professional development. Issues related to that theme include learning design, ontological and epistemological assumptions for design, design as an emerging phenomenon, and teachers beliefs of design. Moreover, the section also includes discussions of the boundaries of higher education, for example, how boundaries between higher education and the surrounding society change. Another discussion relates to how higher education transforms the society and how society transforms higher education. Particularly, this relationship also links to formal, informal and non-formal aspects of professional development and the transformation of practices.

The section starts with a chapter that emphasises the university as a networked and hybrid phenomenon linked to the surrounding society. Toft Nørgård, Mor, and Bengtsen explore this theme in their chapter “Networked learning in, for and with the world”. The chapter starts with a theoretical overview of the configuration and development of three modes of the university, including the ivory tower (mode 1), the factory (mode 2) and the network (mode 3). Subsequently follows a developed framework for the mode 3 university embracing a presentation and integration of learning principles organisational guidelines, and pedagogical formats. The chapter then introduces two categories of educational patterns for learning in and with the world at the networking university; bringing education into the public – learning *in* the world and bringing the public into education – learning *with* the world. This description also includes examples of concrete educational design patterns. Finally, a discussion follows that emphasises three dimensions for students’ learning *for* the world through hybrid networks at the mode 3 university; networked learning for the world as citizenship, networked learning for the world as trust, and networked learning for the world as ecology. The chapter mainly contributes with a developed the notion of the networking university along with its implicated teaching and learning practices.

As in the preceding chapter, Young Pedersen, Caviglia, Gislev, and Hjortskov Larsen discuss the networked hybrid university and its link to the surrounding society. In the chapter “Learning in hybrid protopublic spaces: Framework & exemplars”, the authors explores the theme in the light of the idea of protopublic spaces. The authors propose a framework for the analysis of collaborative inquiry in hybrid protopublic spaces that broadens the perspective on networked professional learning. The chapter presents theoretical assumptions and primary sources of inspiration from different lines of research for the proposed framework. By focusing on the, the authors applies these theoretical groundings to identify three interconnected assumptions that function as building blocks for networked professional learning. The authors combines the notion of ‘collaborative inquiry’ and its expansion into ‘Connected Curriculum’ with the idea of ‘hybrid protopublic spaces’ as potential sites of learning at the boundaries of higher education and beyond. The main finding of this explorative study is the identification of various categories and parameters that constitute the framework. These include multiple connections, modes of knowledge, role-models, and spaces of application. The chapter comprise and analyse three exemplars of hybrid learning spaces within the proposed framework: an open online course, an open journal, and a civic data hackathon. It also include a discussion of opportunities and challenges about creating new and supporting existing spaces for collaborative inquiry that connects higher education with society. The chapter concludes with directions for future work for incorporating these spaces into existing practices and possibly using the framework for the design of new practices.

The following chapter discusses networked learning in higher education as a design phenomenon. “Designs for learning as springboards for professional development in higher education” by Konnerup, Ryberg, and Thyrré Sørensen argues that the field of Learning Design research holds interesting thoughts and conceptualisations for networked professional development. The authors identify some tensions within the broad landscape of Learning Design and more specifically the Larnaca Declaration. With the argument that there are two distinct ideas underpinning the notion of sharing learning designs, the authors introduce the terms ‘plans for action’ versus, ‘resources for reflection’. Further they identify different voices in the field, alternating between seeing Learning Design as a means for ‘effectiveness’ versus for ‘reflexiveness’, and suggest two different views of how to empower and support teachers in developing learning designs. The chapter include a discussion of contemporary challenges for networked professional development. Further it discusses whether the notions of Learning

Design have a tendency to assume that researchers and teachers are designing for relatively well-known problems and contexts. Further, by drawing on conceptualisations from Engeström, it suggests that learning designs also can be viewed as ‘springboards for development’. The authors conclude that design and Learning Designs should not only be thought of as predefined design ideas or as incremental exploration based on retrospective reflections on existing courses. They mean that that these concepts also can conceptualise learning designs as dynamic, experimental opportunities for collective design of new practices or what we term ‘springboards for development’.

The intersection of design and learning is also a theme discussed by Hansen and Bonderup Dohn in their chapter “Design principles for professional networked learning in 'learning through practice' designs”. The authors aim at present a coherent theoretical conceptualization of the ways in which learning designs organized as “learning through practice” can prepare students for future professional practice as well as facilitate different patterns of engagement and knowledge transformation. The authors analyse three prototypical learning designs: 1) case-based learning, 2) design-based learning, and 3) simulation-based learning. In the chapter networked learning is understood as learners' connecting of contexts in which they participate and as their restitution of knowledge, perspectives, and ways of acting across these contexts. In the chapter the authors distinguish learning designs of 'learning through practice' by engaging practices outside the formal educational system as ways of developing curricular understanding and, reciprocally, as providing grounds for concretisation of curricular content through its enactment in practice. By viewing these learning designs as networked learning the intention is to highlight their potential for supporting certain connection forms between learners' experiences in target practice and educational practice. The authors argue that case-based learning establishes a relationship of inquiry between the learner and the target practice. They mean that the relationship established in design-based learning is an innovation with the aim to support learners in developing understanding of practice through changing it. Finally, the chapter emphasises the establishment of simulation-based learning as relationships of imitation of target practice and engagement in ‘as-if’ practice.

The chapter “Teachers’ beliefs about professional development: Supporting emerging networked practices in higher education” by Jaldemark, Håkansson Lindqvist, and Mozelius conclude the section of higher education by linking professional development and emerging networked learning practice to teachers beliefs. It takes as point of departure changes that relate to social and technological development. These changes have an emerging impact on higher education. The authors emphasise that this lead to emerging networked practices that professionals and the organisations they work within need to respond to. An answer to this challenge to higher education is efforts in professional development. This chapter discusses teachers’ beliefs about such professional development. Particularly, it focuses on how professional development projects foster and support networked practices in higher education. The study was based at a Swedish university and included the dissemination of beliefs of teachers from three different departments that participated in two development projects. The data comprise data from semi-structured interviews with 19 teachers. The results of the chapter reveal that professional development concerns beliefs on both individual and collective levels. Within these levels teachers relate their professional development to both social and technological networks.

Part III: Networked Professional Learning in Teacher Learning Groups

Teachers' work is often structured in a way that allows little room to connect and collaborate and, traditionally, teaching practice is highly solitary. This isolated position can harm teachers' continuous learning and development. In response, educational institutes such as teaching institutes and schools, increasingly regard learning in real life social networks as beneficial for facing change and solving problems that are too complex to solve individually. A networked learning perspective may provide insight into the way the networks contribute to teacher professional development. Face-to-face social learning networks with the purpose to stimulate teacher professional development, have been elaborated in several studies. These studies use different terms to describe the social learning idea, such as learning networks, communities of practice, and learning teams. Although each social learning perspective has its own angle, teacher networks in general can be observed as teachers working and discussing practice issues while sharing a similar focus on learning. To account for the natural dynamics in such groups, Vrieling, Van den Beemt, and De Laat (2016) have coined the overarching concept of teacher-learning groups (TLGs). In this section, four examples of networked professional learning in TLGs are elaborated. The chapters leave from different perspectives representing school management, value creation, knowledge creation and learning experiences.

In the chapter *Learning to teach in a remote school context – exploring the organisation of teachers' professional development of digital competence through networked learning*, Pettersson and Olofsson take a school management perspective. They investigate an upper secondary remote school in northern Sweden that consists of four schools located in four different municipalities. The school management has the ambition to create conditions for teachers' professional development of digital competence through collaboration between teachers who are geographically separated from each other. The authors use the Cultural-Historical Activity Theory to explore possibilities and challenges in how teacher professional development of digital competence can be organised, facilitated, and sustained. The findings show that the development of teachers' digital competence requires a school management that is supportive in creating a culture of change that can be sustained beyond single teacher professional development actions and activities. Moreover, teachers need support to elaborate and negotiate on what type of tools, rules, roles, and divisions need to be added to the activity for the networked professional learning to take place and to proceed both in a short-term and long-term perspective. It is also shown how the school management needs to be sensitive to when and how the TLG is in need of encouragement and external support, that is, the importance of finding a balance between when the learning network can be self-organised and when it is in need of being externally directed with support from the school management.

Van Amersfoort, Korenhof, Nijland, De Laat, and Vermeulen inform us about *Value creation in teacher learning networks*. This chapter explores the concept of value creation in two TLGs that aimed to promote and facilitate teachers' networked professional learning. The study investigated how value creation is affected by contextual factors. The findings show little differences in teachers' networked learning activity itself, however substantial differences in leadership commitment, time and opportunity for networked learning and voluntary network participation were observed. Overall, the findings show that participating in TLGs may direct teachers to redefine their idea of what learning could be like and reframe the value of consulting their peers for learning. The combination of committed leadership and mandatory involvement in TLGs appeared to have helped teachers to gain positive networked professional learning experiences.

In Analysing social learning of teacher-learning groups that aim at knowledge creation, Vrieling, Wopereis, Van den Beemt, De Laat and Brand-Gruwel make use of the ‘Dimensions of Social Learning (DSL) Framework’ to study the social configuration of a TLG of teacher educators that aimed to develop a new curriculum for aspirant primary school teachers. The framework distinguishes four dimensions with 11 indicators corresponding to these dimensions that can bring the social configuration of TLGs into view. The first dimension, Practice, indicates the necessity for a relationship between the knowledge created and shared in the group and teachers’ day-to-day activities. Domain and Value creation, the second dimension, is referred to as the sharing of experience and expertise among group members. When group members work interdependently with a shared purpose and responsibility for collective success, the group can demonstrate a Collective Identity (third dimension). The final dimension, Organization, exhibits how the group is organized. Because the TLG in this case study created a sustainable knowledge base necessary to implement a new teacher training curriculum, an extended version of the framework (DSL-extended, abbreviated as DSL-E) was needed to reveal indicators for sustainable knowledge-creation. Informed by the Social Capital Model and the Value Creation Framework (see the former chapter in this section), the usefulness of the DSL-E Framework for analysing sustainable knowledge creation of TLGs was explored. Results show that the DSL-E Framework is helpful to identify indicators for sustainable knowledge creation. First, the use of the DSL-E Framework revealed the collective knowledge working identity as indicator. A gradual development of distributed leadership as well as an inquiry-based attitude appeared necessary ingredients in this matter. Second, institutional value creation was found an important indicator for sustainable knowledge creation. This indicator says that TLGs should involve all stakeholders when starting a joint enterprise and connect actions to institutional goals right from the start.

In MakerSpaces in schools: Networked learning among teachers to support curriculum-driven pupil learning in programming, Spante, Johansson and Jaldemark inform us about MakerSpaces settings. This can be defined as places equipped with various materials that can be used to construct things, in order to enhance creativity and cross-disciplinary collaboration. The study searches for learning experiences of teachers in Swedish K-6 schools that participated in a top-down networked professional development project that focuses on integrating computer programming into the curriculum. The Value Creation Framework (see the former chapter) was used to monitor A TLG of 15 selected teachers from 16 schools. During 12 meetings in two years, the teachers discussed their experiences of integrating programming in their educational settings. Although some teachers were initially skeptical about the project, the results indicate that teachers experienced that participating the TLG helped them to develop their professional attitudes, knowledge, and practices.

Discussion

The discourse on Networked Professional Learning is situated within the broader economic, societal and education contexts, providing an understanding of whether and how Networked Learning is responsive to the evolving needs of professionals situated within different sectors. Each of the chapters in these sections draws on empirical data, providing critical insight into the possibilities offered by Networked Professional Learning, as well as exploring issues and challenges surrounding the implementation. These ideas are drawn together in a summary chapter by Peter Goodyear in which he argues that Networked Professional Learning operates at two levels: collaboration with others to learn how to tackle a current task, and collaboration with others to improve one’s capabilities for tackling future tasks, providing it with a designerly quality which frequently involves inquiry, reframing and action. Design inquiry

combines a search for what is true, what is real and what is ideal. Design action involves composing and connecting: bringing people, tasks and things into a unified whole. He positions design as an expert professional activity (offering a professional service) and as a vernacular activity (everyone designs). Combining these perspectives, Goodyear sketches a future for Networked Professional Learning with social innovation at its heart and the co-design of collaborative services as a unifying practice.

These ideas, of course, form the beginning of a discourse which we hope you, the readers, will critique, debate and expand. We hope you enjoy the book!

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