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Enabling professional development networks: How connected are you?

Inaugural Address

spoken in abbreviated form at the public acceptance of the professorship in Professional development through social networks, at the Scientific Centre for Teacher Research of the Open Universiteit of the Netherlands on Friday, 7 December, 2012

by

Prof. dr. Maarten de Laat
Introduction

Chair of the Board,
Dear family, friends and colleagues,
Ladies and Gentleman,

In this address I would like to present an account of how networked learning as an aspect of social learning can further enhance how we think about and structure professional development in organizations. The work carried out by LOOK\(^\text{1}\) – Scientific Centre for Teacher Research – at the Open Universiteit of the Netherlands (OU) concentrates primarily on the professional development of teachers. LOOK has a special focus on continuing professional development, open and distance learning and learning in the workplace. This focus makes it ideally placed at the Open Universiteit of the Netherlands because of its dedication to lifelong and distance education. Our centre is more concerned with informal learning as an aspect of the professional development of teachers, because this issue is somewhat off the beaten track; most initiatives (by other well respected centres) deal with formal teacher training. As we shall demonstrate later on, however, it is important for informal learning to be taken seriously.

Professional development: Is there a problem?
There is a growing concern in the Netherlands (Martens 2010; OCW, 2010; Onderbouw-VO, 2008; Rinooy Kan, 2007) and elsewhere (Lieberman & Miller, 2001; Wei, Darling-Hammond, Andree, Richardson and Orphanos, 2009), about maintaining teacher quality and promoting a professional learning culture within schools (Kessels, 2012; Nieuwenhuis, 2012). Martens (2010) presents an overview of challenges that our school system is faced with, including, but not limited to expected teacher shortages, multicultural education, keeping up with the on-going ICT revolution and the rapid pace of innovation in our knowledge-based society. Martens argues that these challenges have a serious impact, not only on the professional development of teachers, but also in terms of our thinking about how we approach the professional development of teachers in terms of educational research. We need to adopt a broader perspective on professional development. Time and again, researchers have reminded us that good education needs competent teachers (Hattie, 2009; Kendall & Marzano, 2008) and that a focus predominantly driven by formal education and training simply is not enough (Hargreaves & Fullan, 2012; Knight, 2002; Lieberman & Miller, 2001; Wei et al., 2009). These researchers emphasise making a connection between professional development policies and their relevance to day-to-day practice and the difficulties that teachers experience during their teaching.

\(^{1}\) www.look.ou.nl
The overall problem that I intend to present in this address is the overshadowing dominance of formal education in our professional development practices, practices that are largely informal. This formal approach restricts professional autonomy and reduces professionals\(^2\) to marionettes in a Punch and Judy show, rather than creative human beings capable of improvising and having a will of their own. There is a growing concern about teacher autonomy, and there is a need for increased professional space (Windmuller, 2012), teacher autonomy over management control (Forrester, 2000) and active professional participation in policy change and innovation (Onderwijsraad, 2001). Most managers, including even school leaders, tend to think about learning in terms of education. Formal education enjoys pride of place because people’s perceptions of learning have largely been influenced by their own experience of learning. Perceptions that were formed when they were going to school. Learning has been institutionalised. Anything else – any learning that is not institutionalised – is called experience and it is developed slowly over the years through hard labour in practice. While it certainly has value, it is mostly ignored in terms of empowering professional development. For most people, experience is something that is only given respect on a CV, where, ideally, it helps you to get better jobs.

**Turning a blind eye?**

Making a better connection between formal and informal learning will help to make professional development efforts sustainable. That is not easy, however! In this presentation, I shall argue that we face a double-blind problem that casts a shadow over the potential success of informal learning. This problem has to do with invisibility. Invisibility on the part of learning and on the part of research.

It is often the case that there is more to things than meets the eye. There are hidden values and interesting phenomena beneath the surface that will help us to understand why things are as they are. It may help to think of an iceberg as a metaphor. Since the unfortunate incident with the Titanic 100 years ago this year, everybody has known that an iceberg dead ahead is clearly not something to be trifled with. The mountain that can be observed is often no more than one-fifth of its entire volume. When one looks at the iceberg under the water, you will find that there is much more to it than originally met the eye, influencing the way the iceberg drifts and what is visible above water and what is not. Something similar can be said about informal learning in organisations. It’s there and it is largely responsible for what organisations know and how they act. But it refers to knowledge that is implicit, integrated in day-to-day action. Formal learning has an important place within professional development, but it is not all there is. Lovett & Cameron (2011) for example state that 40% of the influences on teachers’ and school leaders’ professional development come from books, seminars, and articles. The remaining 60% of the influences are made up of contacts with

\(^2\) Although our centre is focused on teacher professional development we would like to widen our focus somewhat and reflect on professional development in organizations more in general. This is why we prefer to speak of professionals in general.
Introduction

colleagues, experiences with students and their families, and their everyday practice-based experiences.

I would like to invite you to take a deep breath and embark on a journey under water to explore the things that are not directly visible to us, things that have an important impact on performance and learning within organizations. This is a journey that we need to take; we cannot afford to simply turn a blind eye much longer.

Invisible learning

When I talk about ‘invisible learning,’ I am referring to the informal learning that is embedded in work practices where professionals encounter challenges that require a learning process in order to solve them. This learning is more than just experiential learning, involving everyday problem-solving. Informal learning has a profound impact on one’s ability to perform successfully in the workplace. As an example, ask yourself how you mastered the software that you run on your computer, or how you successfully acquire new funding or projects? You will find that the answer has much to do with on-the-job learning, not with something that was taught during a course. Making a deeper connection with this informal learning is important to be able to understand and explain the knowledge and reasoning that is behind professional activity; in turn, that will help to make learning a core part of everyday action rather than a handy by-product.

The organisation that you will encounter under the water is loosely connected, complex and somewhat chaotic, driven by everyday needs. It tends not to follow the clearly outlined contours and hierarchy that we present formally to the outside world. The same is true for learning. When professionals encounter unexpected incidents during their work, they need to change their behaviour or procedures if they are to be able to proceed. These changes often involve learning. The informal learning approach integrates working and learning, rather than having them placed outside of daily work routines, as the formal approach tends to do.

Formal learning refers to planned education and training initiatives provided by experts, resulting in a diploma or certificate (Boud & Hager, 2012; Knight, 2002). Informal and non-formal refer to learning that happens outside this formal structure. Non-formal is often used to refer to deliberate and planned learning activities such as workshops or coaching, without being certified, leaving informal to cover all learning that happens in a more or less unplanned way, fuelled by spontaneous interactions and incidents that require learning to solve them. Informal learning therefore typically
displays a bottom-up structure, embedded in the working culture and regulated by the professionals themselves.

Much of this informal learning leads to the creation of new knowledge with the potential to innovate how things are done within organizations (Kessels, 2012; Verdonschot, 2009). This type of learning is relational rather isolational (Lave, 2012). Informal learning is done in collaboration with colleagues and peers. It is therefore – inherently – a social activity (Lave & Wenger, 1991; Wenger, 1998). People develop interconnected relationships that provide support, shared risks, trust, access to information and knowledge. These relationships result in an open and engaging social ‘web’ that facilitates learning, development of professional capital, and how things get done (Christakis & Fowler, 2009; Cross, Parker & Sasson, 2003; Cross & Parker, 2004; Hargreaves & Fullan, 2012; Thomas & Seely Brown, 2011; Villegas & Reimers, 2003). The importance of these relationships, which enable professional development, is emphasised by what we call networked learning (Goodyear, Banks, Hodgson & McConnell, 2004; Haythornthwaite & De Laat, 2011; Lieberman & Wood, 2002).

Networking is very familiar to everybody. Social interaction is a basic human need (Ryan & Deci, 2000) and networking is natural and is part of almost everything we do. We rely, for example, on other people to help us in need, to provide information and to make decisions. Networking is also seen as an important part of your job. We are encouraged by our managers to build networks; they help us to acquire new clients or projects, for example, or to gain access to consultants or experts for specialized tasks. A similar phenomenon can be observed when one looks at networking as a way to improve learning and development. Here, too, everybody knows from personal experience that friends and acquaintances can teach us a lot. But it seems that even though managers very much recognize and believe in this approach, they find it difficult to manage and facilitate networked learning within their organizations.

The core of this problem lies in the informal nature of such learning. These types of activities are spontaneous (Bolhuis, 2009), ad hoc (Schulz & Geithner, 2010), hidden and disconnected from how the organization is formally structured (Cross & Parker, 2004). These informal activities take place outside the boxes of the formal organizational chart – they remain implicit, or under water, if you will – with the consequence that the benefits of these informal activities rarely appear on the manager’s radar screen. It is as if the average manager can only deal with activities that can be controlled and planned for (Knight, 2002) – activities that can be put into Gantt charts, spreadsheets and work-time registration systems, and are therefore formally accounted for. One possible reason for this management approach is that many managers today are too disconnected from the primary processes of the organization. According to Mintzberg, we need managers, not MBAs. Today’s managers overemphasise a scientific approach, making them calculating managers instead of engaging managers (Mintzberg, 2004). This management comes with its own set of tools and language that are used to get a grip on the organisation and meet the specific challenges of improving it, making it run more efficiently and keeping the shareholders happy. The side effect of this approach is that it emphasizes the distance between what Homan and others call the
formal and the informal organization (Homan, 2006). The formal organization is the one that we all recognize: it is the organizational structure that is nicely described in flow charts and graphs. To quote Cross and Parker (2004), however, “when you:

put an organizational chart in front of most employees from line workers to executives ( ) they will tell you that the boxes and lines do not really capture the way work gets done in their organization. ( ) Most will be quick to acknowledge the critical influence that networks of informal relationships have on work and innovation of any importance. (p.vii)

The informal organization is therefore where the real action happens (Brown & Duguid, 2000; Cross & Parker, 2004; Homan, 2006; Kessels, 2012). From a professional development point of view it is important to get in touch with this reality and find a way to facilitate the learning that these social relations make possible. Rather than putting the emphasis on management control, the emphasis should be on promoting and enabling access to social spaces in which people learn and solve work-related issues.

Enabling social learning is obviously not only a responsibility of managers. In a changing learning culture, the ball very much lies with the professionals as well. Professionals need to be able to demonstrate that being given autonomy, trust and space will have paybacks for the organization. They need to demonstrate active participation in organizational change processes. They need to live their role as innovators rather than simply carrying out tasks. Being a professional requires an attitude towards lifelong learning, not only for one's self, but also for one's peers. A popular saying in teacher professional development and re-emphasised in the government coalition agreement for the Dutch national government that took office in November 2012 (2012) is that educational quality begins with good teachers (Lieberman & Miller, 2001; Martens, 2010; OCW, 2008). This involves more than changing an MBA management style. It involves an organization-wide approach that needs to be implemented in harmony multiple organizational levels working closely together (Hodkinson & Hodkinson, 2005).

Invisible research
In addition to invisible learning, there is also an invisibility problem with regards to conducting educational research. In this regard, it could be argued that we face a double invisibility problem here. Educational research used to be a discipline concerned with changing teaching practices. Martens (2010) has shown, however, that educational research has become disconnected, and has begun to chase its own tail. Teachers nowadays have very limited awareness of research that is being done, because, being published in international research journals, it is inaccessible to them. Furthermore, research designs – for good research reasons – oversimplify the complex world in which teachers work, making it difficult for results to have practical implications. This means, in turn, that research results have trouble finding their way to teaching practices. The results remain mostly
under water and are unseen by those who can use them to make a real change in educational practice.

The second problem, of course, is that it is extremely difficult to study what you cannot see. Research in the domain of informal learning is therefore often avoided because of complexity issues that cannot be controlled for and because of inferior notions about practice-driven research (McKenney & Reeves, 2012), making it harder to get such research published in research journals. Goodyear (2011) indicates, however, that educational research will move away from golden standard large-scale studies driven by hypotheses, towards small-scale design that informs practice. This leaves the question of how small-scale designs can provide the building blocks for more long-term and fundamental research?

Over the course of this address, I shall show that the invisibility problem due to the implicit nature of informal learning and the invisibility of educational research need to be addressed in order to conduct meaningful research that contributes to an increased understanding of informal learning in the workplace as well as research that has direct relevance and impact in practice (Martens, 2010; Martens, Kessels, De Laat & Ros, 2012).

I shall begin by first presenting our centre’s approach to professional development. This is followed by a discussion of why social networks have an important role to play and how networked learning helps us to take a relational perspective on learning. After discussing some current research findings and emerging problems in the area of networked learning I will end with a presentation of our research programme, based on a practice driven research approach.
Professional development: the tension between formal and informal learning

“Amid much talk of ‘teacher quality’, there are renewed efforts to deprofessionalize teaching, to fast-track teacher preparation and licensure procedures, to disband tenure, and to devalue teacher experience, discretion, and knowledge in everyday classroom decisions. We think it is time to reiterate the message of our first book, that teachers are at the centre of all efforts to reform and improve schools.” (Lieberman & Miller, 2001, p. viii).

In this section, I shall explain in further detail the tension between formal and informal learning.

I said in the introduction that it is important to revisit professional development in organizations by opening our eyes to the invisible informal learning activities that are taking place. I want to examine further the question of why informal learning is important and argue that we need new metaphors that will help to bring informal learning into focus. Being able to see both formal and informal learning also comes with new challenges. Instead of contrasting them, we need to develop a hybrid form of informal-formal learning. A form that requires a different role from management. A form that expands a culture of learning by creating social learning spaces for professional development.

Informal learning in the midst of practice

Our centre’s approach of professional development is concerned with the continuous ability to perform in the workplace and adopt or perhaps even lead the changes necessary to be able to continue to do a specific job or occupation. According to Boud & Hager (2012), professional development implies that professionals continuously develop their own capacities, but always – in part at least – in response to happenings in their professional environment. This approach locates professional development precisely in the middle of where the action takes place, i.e. where the work is being done.

While our approach places professional development in the midst of professional practice, it seems that most of the control that is asserted on professional development lies ‘outside’ the scope of the professional. To a great extent, professional development initiatives (and its budget) are under the influence of the organization, which is often dealt with by the manager, in line with the Human Resource Development policies. Professional development is seen from the perspective of the organization’s needs and to a lesser extend the needs of the professional. One of the consequences is that the capacities of a professional are predominantly evaluated in terms of what a person cannot do or how he/she needs to change, rather than trying to elevate this person’s potential to perform. This is a subtle difference, but a major difference in perspective when it comes to empowering professionals in their autonomy (Forrester, 2000; Windmuller, 2012). The effect of this top-down approach is that professional development
initiatives are largely planned and coordinated beyond the control of the professional. The outputs of those initiatives predominately result in the development of formal training, such as refresher courses given by experts, in-house training, or personalized learning programmes.

The literature on professional development increasingly calls for more bottom-up oriented perspectives for sustained professional development connected with everyday organizational life and work (Boud & Hager, 2012; Hargreaves & Fullan, 2012; Marsick & Volpe, 1999; Pahor, Skerlavaj & Dimovski, 2008). While the controlled organizational approach tends to focus on individual skills and knowledge acquisition, the practice-driven approach tends to focus more on informal processes and sees learning as a way of participation and becoming. Researchers, policymakers and stakeholders in the world of professional development and education have shown an increasing interest in informal learning, also referred to as non-formal learning, incidental learning, spontaneous learning or work-based learning (Eraut, 2000; Marsick & Watkins, 1990; Smith, 2008). There is an increased awareness that most of what professionals do is learnt informally (Clark & Hollingsworth, 2002; Richardson & Placier, 2001). This impact of informal learning on performance in practice is shown below (see figure 1) by Moore (1998). In this graph, the importance of informal learning on the ability to adopt and adapt is highlighted.

![Figure 1: The impact of informal learning on the ability to perform](image)

Informal learning tends to deal with implicit knowledge, embedded in day-to-day practice and is a result of spontaneous learning activities (Billett, 2001; Davenport & Prusak, 2000; Eraut, 2000; Marsick, 2001; Star & Strauss, 1999; Timmermans, Bowker, & Star, 1998). Informal learning in the workplace is often described as observing how others do things, asking questions, trial and error, sharing stories with others and casual conversation (Marsick & Watkins, 1990).

A shared observation is that the social aspect of informal learning is often overlooked. We need to pay more attention to the social and cultural aspects that characterize informal learning in the workplace (Smith, 2008), rather than keeping our focus mainly...
on learning outcomes and products that are being developed. That will require organizations to review their approach to professional development and try to move from a results-driven culture towards a culture that embraces the value of being engaged in social learning processes. This calls for rewarding engagement in practices where professionals are connected in networks and communities, where learning is situated and integrated, and aims at solving real work problems. Hargreaves (2003) illustrated both formal and informal approaches to professional development by contrasting a bottom-up approach to learning in teacher networks and communities with a controlled and planned approach through the provision of corporate training (see table 1).

<table>
<thead>
<tr>
<th>Professional Learning Communities</th>
<th>Performance Training Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transform knowledge</td>
<td>Transfer knowledge</td>
</tr>
<tr>
<td>Shared inquiry</td>
<td>Imposed requirements</td>
</tr>
<tr>
<td>Evidence informed</td>
<td>Results-driven</td>
</tr>
<tr>
<td>Situated certainty</td>
<td>False certainty</td>
</tr>
<tr>
<td>Local solutions</td>
<td>Standardized scripts</td>
</tr>
<tr>
<td>Joint responsibility</td>
<td>Deference to authority</td>
</tr>
<tr>
<td>Continuous learning</td>
<td>Intensive training</td>
</tr>
</tbody>
</table>

The table illustrates that the two perspectives come with a fundamental different approach and language for speaking about and appreciating learning and development. It seems that we need to extend our vocabulary and perspective to be able to understand both approaches to learning. Or to put it another way, we need to embrace other metaphors capable of accommodating informal learning.

**Changing metaphors**

Knowledge acquisition and transfer are approaches to learning that have gained immense popularity and have become the industry standard. As I argued above, however, professional development is not simply a matter of knowledge acquisition being transferred from one context to the other. Commitment to professional development means commitment to organic growth, anticipating the changing nature of work practices.

Boud & Hager (2012) argue strongly for a change in how professional development is approached. They illustrate the need to change the metaphors used to address professional development as well as the importance of locating it in professional practice. They state that professional development has been moved away from learning activities driven by professionals, towards a systematised and codified organization that has consequences for professionals’ continued professional registration that will, in many cases, have an impact on one’s ability to carry on his or her profession. A similar regis-
Institution strategy has been implemented in the Netherlands by the Ministry of Education to get a grip on teacher professional development. This systemic approach, known as a performance registry, is currently being used to track and register the professional development of teachers. Boud & Hager argue that this could have the opposite effect to what was intended. Instead of professionals taking responsibility for their own development, they become the object of surveillance. That is simply because it is easier to measure attendance of formal professional development courses than anything else – i.e. the impact it has on actual professional development. The consequence is that professional development has become synonymous with recording professionals’ participation in courses or seminars (Boud & Hager, 2012). These systemic approaches emphasise the control over professional development by management and HRD policies (Forrester, 2000), where development is planned, tracked, budgeted and therefore easily publicly accounted for. Professional development in this approach is simply a matter of knowledge acquisition during a one-day seminar, hosted by a motivational (and expensive) speaker.

In a similar vein, Hodkinson & Hodkinson (2005) conclude that in, the UK, for example, policy approaches to teacher professional development are over-focused on the acquisition of measurable learning outcomes, short-term gains, and priorities that are external to teacher needs. The acquisition and transfer approach puts the emphasis on a cognitive (individualist) approach where, via a process of instruction, predefined content will be taught based on a curriculum provided by experts. The idea is that, once this information has been taught, people could transfer and use this knowledge in different contexts, where and when it may be applicable. Over several years, this teaching model has been criticized, and researchers have been calling for a broader appreciation of what professional development entails. This implies that we are in need of an improved theory of professional development (Knight, 2002) by changing its metaphors (Büchel & Raub, 2002; Hargreaves & Fullan, 2012; Hodkinson & Hodkinson, 2005; Lave & Wenger, 1991; Sfard, 1998; Smith, 2008; Wenger, 1998). Boud & Hager (2012) put the emphasis on the fact that professional development is an on-going process. They emphasise terms such as organic growth, evolution, gradual unfolding and see professional development as a process of becoming, where professionals continuously develop their own identity and abilities in response to events in their professional environment. In their view, “learning is a normal part of working, and indeed, of most other social activities. It occurs through practice in work settings from addressing the challenges and problems that arise. Most learning takes place not through formalised activities but through the exigencies of practice with peers and others, drawing on expertise that is accessed in response to need. Problem-solving in which participants tackle challenges that progressively extend their existing capabilities and where they learn with and from each other appears to be a common and frequent form of naturalistic development” (Boud & Hager, 2012, p.22). In this view, the main metaphors that we should be using are participation, construction and becoming. Boud and Hager’s statement reads as a strong plea for placing professional development in a social context where professionals work and learn together, changing and innovating both their professional practice as well as who they are. Enabling this
Professional development: the tension between formal and informal learning

perspective of learning involves being in touch with one’s professional colleagues, building the networked connections needed to participate in constructive professional dialogues about what it means to become a professional, and being able to perform in the workplace. Professionals in demanding jobs especially are often faced with complex issues and Lohman (2006) found that they rely on others to a great extent to solve work-related problems. Although professionals may be informed about new approaches individually during training workshops, it is through their informal social networks with colleagues that they learn how to interpret, embrace, share, compile, contextualize and sustain this new knowledge (Baker-Doyle & Yoon, 2010; Lane & Lubatkin, 1998).

Finding a balance: informal-formal learning

Instead of playing the blame game and starting endless discussions about which approach is better; formal or informal, we think it’s better to try and make use of the best of both worlds and pick the fruits of both formal and informal learning. The idea here is to try to find a new balance between formal and informal learning. Formal learning has an important place in professional development, but our argument is that this approach gets too much attention. Formal learning opportunities represent just the tip of the iceberg when considering the full range of learning that takes place. However powerful this informal learning may be, there is a problem when it comes to utilizing it: Informal learning activities are mostly ad hoc, spontaneous and invisible to others. As a consequence, informal learning in organizations goes undetected and is therefore hard to assess, manage and value (Wenger, Trayner & De Laat, 2011).

How can we embrace what we cannot see? Based on the conclusions above, we should not try to lift the entire iceberg out of the water. This would imply making all learning formal. Research and personal experience has taught us how important informal learning is, but, at the same time, it gets ignored or overlooked within organizations when it comes to leveraging its capability. Or, in Knight’s terms (2002): informal learning is important but its importance is insufficiently appreciated. Regardless of how powerful informal learning may be, there is a problem when it comes to making it a real asset within organizations. Almost all of the projects in our research programme deal with the fundamental question: How to create space for informal learning and enable social learning spaces without formalizing them?

The ability to embrace informal learning, yet leaving it submerged, requires a change in the organizational learning culture. This involves all layers of an organization with the aim of trying to bring them into a new balance (Hodkinson & Hodkinson, 2005). Implementing this change starts with a different attitude and role from management. A change in their approach changes the boundaries and degrees of freedom that professionals feel in their learning spaces. Management should become a kind of sponsor of informal learning initiatives. We are looking for something that is a bit similar to sponsoring a sports team. A sponsor of a football club does not interfere with how the club is being run and how it prepares for their matches. But it keeps a close eye on
their success and how this success is beneficial to them. In a similar way, our sponsor will not formalize informal learning, but does evaluate how this informal learning benefits the formal organization. This balance is a kind of informal-formal learning environment.

**How can we adopt a culture for informal-formal learning?**

Developing a culture for this kind of informal-formal learning is an important condition for all development to start. People need to be taken seriously, empowered and encouraged to start searching for answers by engaging others. This means that organizations should provide opportunities for what Fuller and Unwin (2003) call expansive - as opposed to restrictive – learning. In their research, Fuller and Unwin found that some organizations provided a culture that values and supports learning and, by doing so, opening doors to various opportunities for professional development activities. They state that expansive learning does not develop overnight. It needs to be valued by both management and staff and requires mutual trust. Hodkinson & Hodkinson (2005) used this model to examine teacher professional development and set out a number of factors (see table 2 below) they found important to help establish a culture of expansive learning in the teacher workplace.

**TABLE 2: Expansive and restrictive learning environments**

<table>
<thead>
<tr>
<th>Expansive</th>
<th>Restrictive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Close collaborative working</td>
<td>Isolated, individualist working</td>
</tr>
<tr>
<td>Colleagues mutually supportive in enhancing teacher learning</td>
<td>Colleagues obstruct or do not support each other’s learning</td>
</tr>
<tr>
<td>An explicit focus on teacher learning, as a dimension of normal working processes</td>
<td>No explicit focus on teacher learning, except to meet crises or imposed initiatives</td>
</tr>
<tr>
<td>Supported opportunities for personal development that goes beyond school or government priorities</td>
<td>Teacher learning mainly strategic compliance with government or school agendas</td>
</tr>
<tr>
<td>Out of school educational opportunities including time to stand back, reflect and think differently</td>
<td>Few out of school educational opportunities, only narrow, short training programmes</td>
</tr>
<tr>
<td>Opportunities to integrate off the job learning opportunities into everyday practice</td>
<td>No opportunity to integrate off the job learning</td>
</tr>
<tr>
<td>Opportunities to participate in more than one working group</td>
<td>Work restricted to home departmental teams within one school</td>
</tr>
<tr>
<td>Opportunity to extend professional identity through boundary crossing into other departments, school activities, schools and beyond</td>
<td>Opportunity for boundary crossing only come with a job change</td>
</tr>
<tr>
<td>Support for local variation in ways of working and learning for teachers and work groups</td>
<td>Standardised approaches to teacher learning are prescribed and imposed</td>
</tr>
<tr>
<td>Teachers use a wide range of learning opportunities</td>
<td>Teachers use a narrow range of learning approaches</td>
</tr>
</tbody>
</table>
We share some of the reservations Hodkinson & Hodkinson (2005) make about this table, mostly because the model seems to present opposing ideal-types, while it is better to treat them as dimensions. Also, these learning environments are placed within an organizational context, where space will for example never be completely expansive. There will always be restrictions, but the aim is to maximise the space available for expansion, allowing professionals to grow constantly. One of the aspects that Hargreaves highlights in expansive learning environments is that learning becomes an integral part of day-to-day practice and action. This is very important when addressing the invisibility problem mentioned in the introduction. When learning is acknowledged and supported by peers and management, it becomes tangible and embedded in the organizational culture. According to Hodkinson & Hodkinson, increased participation in expansive social learning cultures requires teachers, departments, and schools do the following to stimulate the capacity for expansive learning.

1) Teachers can, for example, provide mutual support, looking to learn and teach by mentoring and being mentored inside and outside the school, trying to engage with other teachers, groups and departments.
2) Departments should regard teacher learning as one of their explicit purposes integrated into the continual improvement of their practices. Developing informal contacts, exchanges and discussions, access to each other’s lessons and work, working in teams to meet specific problems are examples of effective approaches.
3) School management at all levels can set an example and demonstrate that they value teacher learning. There needs to be strategic planning for development and this needs to recognise the significance of everyday teaching practices as learning. This way informal-formal learning can become a real asset within the organizational learning culture.

Informal-formal learning aims to expand informal learning initiatives and bring professionals closer together. It stimulates the appreciation of informal learning formally through sponsorship and calls upon formal training initiatives when needed. This combination of informal-formal learning is illustrated by Wei et al. (2009) in their conclusion that teachers should become learners, as professional development (in the formal sense of training) alone is not enough. Based on an extensive review of studies on effective teacher professional development, Wei et al. (2009) conclude that professional development initiatives should focus on content (concrete teaching tasks, assessment, observation and reflection), linked with what teachers are able to implement in practice, intertwined with their own practice, through participation in professional learning with their peers from their school site aimed at collaboration and linking teachers through communities and networks.

**Enabling social learning spaces**
As a result of widening the perspective of informal-formal professional development by adopting metaphors that favour expansive social learning through participation, construction and becoming, we need to make it possible for professionals to engage in social learning spaces. This leaves us with the question; What is social learning and
what do social spaces look like? Several definitions of social learning can be found in the research literature (for an overview see Reed et al., 2010). According to Reed, there are three conditions that have to be met in social learning. First, the learning experience has to lead to a change in the understanding of the learner. Second, the social learning setting has to go further than a relationship with a specific teacher. Other learners and teachers (other members of a network for instance) have to be able to make use of the learned information as well. Third, the learned information has to be acquired via interaction and contacts with others.

The term ‘space’ has also been used several times, but now it is the time to take a closer look at it. We prefer the term social space above professional space, because a social learning space tends not to limit its scope to professional domains and organizational boundaries. Van den Beemt (2010) states that all social action takes place in spaces, around objects and in time. Today, those spaces combine social action in both physical and virtual environments. What follows from this is that someone's pattern of social relations and forms of participation can be referred to as a social space. This social space is dynamic and the boundaries change based on personal actions.

In line with metaphors like ‘becoming’ and ‘identity development’, a social space suggest that this process of professional growth does not stop after working hours and that it stretches peoples identities and the contexts in which they live and act. People regulate their own learning (consciously and unconsciously) by sharing their issues with people of their own choosing. As such, professionals should be encouraged to develop and maintain a ‘web’ of social relationships that they can rely on in need of learning. This space changes constantly and will be small or large depending on the problem at hand. It can stretch from a single moment to an extended period of time. It may be personal or private. Even the boundaries of this space will be different each time. It can be that you receive a great deal of encouragement from your manager, perhaps even being ‘rewarded’ with time and other resources. At other instances, however, you might feel misunderstood and discouraged. The main point is that we should realize that people build, create or enter social spaces for learning based on their own ability, motivation and needs and that for each of these problems the parameters of this space will be different, unique even. It is therefore important for a learning culture to offer the right kind of support and facilitation to be able to sponsor this process of enabling social spaces with enough potential for learning to happen.

Creating social spaces often starts with the individual need to solve a problem and by acting upon it. Here is where part of the problem that was outlined previously when we discussed the issue of management control in a formal learning culture lies. In such a controlled and pre-planned culture of professional development, the professional only has a small amount of space for personal autonomy, which reduces their motivation to act. Those who do act – and who do so spontaneously – regulate their space informally outside the scope of the organization. Whether their insights and benefits of learning will be shared in a wider context then becomes a matter of chance.
This problem is illustrated further by Day and Hadfield (2004). They also argue that the overemphasis on formal professional development approaches, directly or indirectly, undermines the traditional autonomy and space of teachers. As a consequence, many feel little ownership over their teaching, which is regularly being policed by inspection resulting in growing insecurity. In their project, they tried to establish teacher learning networks and trust relationships in primary schools with the aim of returning ownership over development to the teachers and increasing the social space in which they can learn together. These networks should be seen as an attempt to replace the notion of the individual teacher working in isolation with the utilisation of a range of social and intellectual capital available within the school and beyond. They found that in order to achieve this they needed facilitators to help to implement a learning culture in which social spaces can flourish, building the capacity for learning and innovation. Based on their work, they formulated several principles that will help set the stage for developing these spaces (Day & Hadfield, 2004):

- Successful schools are learning communities for adults as well as children.
- Teachers learn best when they participate actively in decisions about the content, process and outcomes of their learning.
- Successful learning requires time for critical reflection of different kinds, in, on and about action, and action research is the most effective means of investigating practice.
- Learning alone through one’s own experience will ultimately limit progress. Successful learning requires collaboration with others from inside and outside the workplace.
- Teacher learning and development should contribute to school improvement.
- School leaders play a significant influencing role in teacher learning and the development of a school’s capacity to improve and cope with change.
- At its best, learning will have personal and professional significance for teachers.
- Supported, sustained learning over time is likely to be more beneficial to individual and organisation that short term learning.
- If schools are to operate effectively in devolved systems, much reliance has to be placed on trust in professional judgement at school level.

Day and Hadfield also found growing evidence for the importance of building networked relationships linking internal and external capacity. They quote Soutworth (2000) to emphasize that “Knowledge networks will enable staff inside schools to become plugged in to the world of ideas outside their professional contexts, as well as offering them the chance to explore their work with the help of others outside their schools. These networks will be highly interactive thereby making them not only instruments for information dissemination but also as learning networks. Through interaction, people will create new knowledge for themselves that is relevant to professional situations and needs” (Southworth, 2000, p. 7).
Conclusion

In this section, I have shown that professional development is an integral part of daily work and focuses on learning rather than on education. I have argued that, in order to gain recognition for this everyday learning, it is important to raise its visibility and develop connections with how professional development is formally acknowledged within organisations. We need an approach that not only focuses on the top of the iceberg, but a management approach that is in touch with the learning that happens under the surface. An approach that takes into account that professional development is driven by work-related problems, connected with practice, that it is social, unplanned and requires space, trust, and autonomy to flourish. This means that professional development policy and culture need to be augmented with an additional set of learning metaphors and need to embrace an approach that was termed informal-formal learning. In the course of this argument, I have cited researchers who have shown that professional development is not an individual process, but that it is effective when teachers enter into social learning spaces where they engage in networks and communities collaborating with their peers on issues that matter. This raises the importance of social networking and a relational approach to learning and development. In the next section, I shall take a closer look at what social networking is, why it is so important today and how social networking can be used to implement a networking approach to learning and professional development.
Social networking and networked learning

“The networks we create have lives of their own. They grow, change, reproduce, survive, and die. Things flow and move within them. A social network is a kind of superorganism, with an anatomy and physiology – a structure and a function – of its own.” (Christakis & James, 2009, p. 289).

Recently, both in organizational literature on professional development and in literature on the professional development of teachers, there has been a growing interest in understanding the role social networking plays in creating and maintaining meaningful social relationships. The central idea is that understanding network patterns and the creation of social relationships is key to understanding how people develop the ability to gain access to shared recourses, ask for help and develop collaborations. In other words, it is about understanding how people develop the ability to create or participate in social spaces that contribute to working and learning. In the previous section, I have shown that informal learning is spontaneous and mostly out of sight of the formal organisation. This means that the social networks that facilitate informal learning are also mostly invisible and that participation relies on ‘knowing what is going on around here’. Being well connected is an important asset to being able to continue to do your work successfully.

Social networking

By social networks we mean the configurations of connectivity that exist when people interact with each other by communicating, sharing resources, and working, learning or playing together, supported through face-to-face interaction as well as through the use of information and communication technology (Haythorntwhaite & De Laat, 2011). Each interaction defines a connection between people, known as a social network tie. These ties vary in strength from weak to strong according to the range and types of activities that people engage in. In other words, networked relationships – ties – connect the dots between otherwise isolated people.

In recent years, mainly due to the ever expanding World Wide Web, our world has become increasingly connected. We are heavily engaged in building and maintaining networked relationships of all kinds and some researchers even call for the need of a science of networks (Watts, 2003) to understand the changes that this development has brought to our society (Castells, 1996). A famous study on the spread of obesity for example illustrates this networked approach by showing that the chances of becoming overweight is strongly influenced by your social relations (Christakis & Fowler, 2007). A person is more likely to become obese increases if he or she has friends that are obese.

The power of networks is recognized widely and the example just given illustrates that a networked approach is being applied to tackle many emerging issues (Watts, 2003;
Christakis & Fowler, 2009; Weinberger, 2011). Simply put ‘networked’ in front of what you do and you are entirely up to date and ready to start doing things in the new way. Everything seems to have become at least 2.0 to start with, not to mention the ones who dare to go further and feel the need for 3.0 or even 4.0. Facebook just recently reached its one billion user threshold, and continues to grow. How many friends do you have?

Social interaction is a basic human need (Ryan & Deci, 2000). People strive for contact and therefore build and maintain relationships. Whether it is simply to find a place to live, get a new job, share interests and hobbies, etc. Networking is not something new, however; it has only recently been ‘rediscovered’.

Since most people tend to think predominantly of computer-supported networks, such as Facebook, Yammer and Linked-In when they think of networking, it is important to emphasise that social networking and technology are not identical; The belief seems to be that you are only networking when you are taking part in these online social networking sites. Also, and most people seem to forget this, these sites only span the social world that they can offer. Social networks are bigger than that. Wellman (2004) made a point of this in 1992, where he argued at a conference for paying more attention to how people actually communicate in real life. Making use of sparsely knit, far-reaching networked relationships that are not being supported by isolated groups that groupware tries to support in their online platforms. Everyone who (even remotely) takes part in these online platforms is familiar with the frustration of spam mail sent by Linked-In and similar ‘social networking sites’ trying to suck you into their all exclusive platform, making you feel that you are missing a lot if you don’t sign up to their platform.

Influential researchers such as Wellman and Christakis do well to raise this issue about the social nature of networks. Networking is about being open and flexible. Christakis’ team at the Human Nature Lab (Apicella, Marlow, Fowler & Christakis, 2012) recently published an article in Nature about social networking and collaboration in which they conclude that certain elements of social network structures were present at an early point in human history. They studied the social networks of the Hazda, a hunter-gatherers population in Tanzania and found that the Hazda networks have certain properties also seen in contemporary social networks. Their main conclusion is that social networks may thus have contributed to the emergence of cooperation.

To illustrate the omnipresence of social networks further, we can explore Wellman’s theory of networking in which he states that the world is composed of social networks. He shows how communities over time have changed from what he calls ‘little boxes’ to ‘glocalized networks’ to ‘networked individualism’. In table 3 are some of their features summarized (see Wellman, 2002 for the extended version):
TABLE 3: Modes of networked interaction (Wellman, 2002)

<table>
<thead>
<tr>
<th>Phenomenon</th>
<th>Little Boxes</th>
<th>Glocalization</th>
<th>Networked Individualism</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical context</td>
<td>Dominance of immediate context</td>
<td>Relevance of immediate context</td>
<td>Ignorance of immediate context</td>
</tr>
<tr>
<td>Modality</td>
<td>Door-to-door</td>
<td>Place-to-place</td>
<td>Person-to-person</td>
</tr>
<tr>
<td>Spatial range</td>
<td>Local</td>
<td>GloCal = Global + Local</td>
<td>Global</td>
</tr>
<tr>
<td>Locale</td>
<td>All in common household Work space</td>
<td>Common household Work space for core + external periphery</td>
<td>External</td>
</tr>
<tr>
<td>Access control</td>
<td>Doors wide open to in-group members, walled off from others. External gate guarded</td>
<td>Doors ajar within and between networks Look, knock &amp; ask</td>
<td>Doors closed Access to others by request Knock &amp; ask</td>
</tr>
<tr>
<td>Permeability</td>
<td>Impermeable wall around unit</td>
<td>Household &amp; workgroup have strong to weak outside connections</td>
<td>Individual has strong to weak connections</td>
</tr>
<tr>
<td>Metaphor</td>
<td>Fishbowl</td>
<td>Core-periphery</td>
<td>Switchboard</td>
</tr>
<tr>
<td>Unit of Analysis</td>
<td>Village, Band, Shop, Office</td>
<td>Household, Work unit, Multiple networks</td>
<td>Networked individual</td>
</tr>
<tr>
<td>Social structure</td>
<td>Hierarchically organized workgroups Discrete neighbourhoods</td>
<td>Work unit in soft hierarchy; otherwise amorphous</td>
<td>Amorphous Determined by individual status</td>
</tr>
<tr>
<td>Era</td>
<td>Traditional</td>
<td>Contemporary</td>
<td>Emerging</td>
</tr>
<tr>
<td>Personal style</td>
<td>Conformity</td>
<td>“Protect your base before you attack” (attributed to Mao Zedong)</td>
<td>Free agent</td>
</tr>
<tr>
<td>Duration</td>
<td>Long duration ties</td>
<td>Long duration for household core</td>
<td>Short duration ties</td>
</tr>
<tr>
<td>Transaction speed</td>
<td>Slow</td>
<td>Variable in core</td>
<td>Fast</td>
</tr>
<tr>
<td>Tie maintenance</td>
<td>Group maintains ties</td>
<td>Core group maintain internal ties. Other ties must be actively maintained</td>
<td>Ties must be actively maintained. One by one</td>
</tr>
<tr>
<td>Trust building</td>
<td>Enforced by group</td>
<td>Core enforces trust Network members depend on cumulative reciprocal exchanges and ties with mutual others</td>
<td>Depend on cumulative reciprocal exchanges and ties with mutual others</td>
</tr>
<tr>
<td>Knowledge</td>
<td>All aware of most information Information open to all within unit. Secret to outsiders</td>
<td>Core knows most things Variable awareness of and access to what periphery knows</td>
<td>Variable awareness of and access to what periphery knows</td>
</tr>
<tr>
<td>Basis of success</td>
<td>Getting along Position with group</td>
<td>Getting along &amp; position within core Networking</td>
<td>Networking Filling structural holes between networks</td>
</tr>
<tr>
<td>Socializations</td>
<td>Obey group elders</td>
<td>Obey your parents, cherish your spouse, nurture your children. Defer to your boss. Work &amp; play well with colleagues and friends</td>
<td>Develop strategies &amp; tactics for self-advancement</td>
</tr>
<tr>
<td>Zeitgeist</td>
<td>Communitarian</td>
<td>Conflicted</td>
<td>Existential</td>
</tr>
</tbody>
</table>
Networks are everywhere and have always been. The way they operate (as table 3 illustrates) however has changed dramatically, influenced by the development and use of technology and our ability to travel.

Networks are a hot topic these days and the term comes up in almost every way (networked society, networked life, networked identity, networked economy, networked governance, networked information, networked knowledge, networked learning, etc.). Even the term 'networked individualism' has just been mentioned. This term may sound like a contradiction, but it emphasises the point that people have a great ability to act on their own, to solve their problems and organize their lives, but they do this in a networked way, with the help of their friends and other relationships. In our networked societies, boundaries have become more permeable, interactions are with diverse others, linkages switch among multiple networks, and hierarchies have become flatter (Wellman, 2002). In other words, our social space has expanded immensely. In their book “Networked: the new social operating system” (Rainie & Wellman, 2012) they emphasise the importance of being networked in every way. They describe our daily life as a connected life which gives us endless opportunities to be part of the give and take of networking. Through the act of networking, we enter or create the social space that expands our opportunity for learning, problem-solving, decision-making and personal interaction. This social operating system, heavily influenced by networked individualism and glocalization, liberates us from the restrictions of tight groups (such as little boxes). We have to develop the strategies and skills to become a capable and enabled networker, however. These skills are often referred to as 21st century skills (Bellanca & Brandt, 2010), emphasizing the 4 Cs; critical thinking & problem solving, creativity & innovation, communication, and collaboration (Partnership for 21st Century Skills, 2009).

Until now, I have been looking at networking in more general terms. In the next section, I would like to switch our focus to a specific domain - networked learning - that helps to understand informal learning and professional development from a networked perspective. Researchers have been studying networks, with the focus having primarily been on two aspects – the 'structure' of networks and the 'flow' of resources within networks. Today, I want to look primarily at the intention and nature of networking and, in particularly, how those two aspects facilitate informal learning and professional development. This means taking a closer and more detailed look at the properties and qualities of networked relationships and how they impact the flow and structure of networks and those involved in networked activities.

**Networked learning**

Networked learning is an emerging perspective in the area of professional development that aims to understand social learning processes by asking how people develop and maintain a 'web' of social relations used for their learning and development (Goodyear, Banks, Hodgson & McConnell, 2004; Haythornthwaite & De Laat, 2011; Steeples & Jones, 2002).
The term ‘networked learning’ was first coined in the mid 1990s to refer to ways new communication technologies can influence teaching and learning (Harasim, Hiltz, Teles & Turoff, 1995). Early networked learning research focused primarily on exploring how technology can and does support learning. Over the years, interest has widened to include the social aspects of networked learning, with a focus on building and cultivating social networks and seeing technology as a part of the phenomenon rather than as an end in itself. Networked learning focuses therefore on the diversity of social relationships that people develop, the strategies that they use to maintain them and the value that the relationships creates for learning. Both weak relationships, held with acquaintances, and strong connections like long-lasting friendships with peers and community memberships, are important for professional development. A well-known example of a closely knit social network structure is the notion of communities of practice (Wenger, 1998). In these communities, people have tight, long-lasting social relationships, used to develop their practices and knowledge domains. Emergence and cultivation of communities is a difficult process, however, and successful communities may also turn their attention inward, preserving and deepening group knowledge, but failing to capture new information. A strong core may also dissuade participation by those outside the central core, or fail to provide an environment where newcomers can come to understand norms and practices through legitimate peripheral participation (Lave & Wenger, 1991). Communities of practice are often formed to place an emphasis on strong relationships engendering a certain closeness and unity of purpose (Jones, Ferreday & Hodgson, 2008). In a famous article on the strength of weak ties, Granovetter (1973) demonstrated that weak ties are important for gaining access to new knowledge, perspectives and alternative conversations. Strong ties with those who are close to you, on the other hand, are needed to deepen and embed knowledge closely related to day-to-day shared practice, as well as commitment to joint activities.

A networked learning perspective focuses on the diversity of social relationships that people develop, whether it concerns personal development, team learning, or community participation, fuelled by notions of social capital, glocalization and networked individualism. Networked learning looks at the number of contacts one has and the intention with which they are being used. This can mean talking with one or more colleagues in the hallway or in the coffee corner; sending an e-mail, calling peers around the world by Skype or phone with a few peers around the world, or sharing your experience with one or more (online) communities you are a member of. In the next section, I shall discuss what it means to see learning as a social relationship.

**Learning as a social network relationship**

Haythornthwaite & De Laat (2012) point out that key to a social network approach to learning is the attention to relations. A relational approach emphasizes the interaction between people for commerce, work, play, or, in this case, learning and professional development. They describe several relationships between learning and networks:
- **Learning can be seen as a relationship that connects people.** A student learns from a teacher; a teacher instructs students; and novices learn collaboratively from one other. It can be a directed relationship, with a child learning from a parent, a novice from an expert, or an apprentice from a master craftsman. It can also be a technology-based relationship, e.g., information exchange via databases, knowledge exchange via listservs, and communication via a number of computing applications. The wider learning happening on the Internet suggests other aspects of learning, as individuals not only actively search for information online, but also contribute information, e.g., through social media. Such technology enhanced professionals may also join communities where, regardless of their age or experience, they engage in setting the learning goals of the community.

- **Learning can be thought of as the expression of a tie.** Communities of inquiry, research teams, and study groups come together with the express purpose of learning from each other and/or together (Wenger, 1998; Barab and Roth, 2006). In that sense, learning is the essence of the tie that binds the group. Similarly, learning is the tie that connects networks of class members, collaborative learners, peer-to-peer learners, distributed learners, online learners, communities of interest, peer productions, scholarly communities, and academic disciplines. While different kinds of relations and relationships may develop – from learning to socializing, from classmate to good friend – the initial and characterizing view of these collectives is that they are learning collectives. For some, joining a learning collective binds them to a “latent tie structure” (Haythornthwaite, 2002). This structure puts the individual learners in a position where they may be able to make closer connections, thus converting a “latent tie” into an active one, e.g., when strangers in a class begin to interact with each other around class material, discussions and projects. Technology can be a major enabler of latent ties, for example by supporting ‘lurkers’ in online communities who could be contacted if a particular kind of question arises.

- **The learning expression can be seen as an outcome of relationships.** For example, the kinds of relationships, roles, etc. that lead a set of individuals to recognize that they belong to a functioning group or community include things like: relationships that include social as well as instrumental exchanges, trust, generalized reciprocity, and social support; roles that support altruistic provision of information, acceptance of delayed return on social or informational ‘investment’; and specialized duties; outcomes that sustain personal and collective reputation and reward; and network attention to group members, group goals, and survival of the group (McGrath, 1984; McLaughlin, Osborne & Smith, 1995; Wellman & Berkowitch, 1997, Wellman, 1999). To be able to characterize a community as a “learning community,” it may be sufficient to add that the focus of the group is toward a learning outcome, however defined.

- **Learning can be thought of as the network outcome of relationships,** i.e., as the net result of data gathering, discussion, argumentation, synthesis, application, and generation of ideas, information, and knowledge. The social capital that this network holds ranges from the joint understanding of a subject area, to the agreed and understood practices of this learning group. It includes the human
capital of each individual in the network, but, perhaps more to the point for the network, it includes the synergies between people and their knowledge as mobilized and mobilizable within the network.

These relations primarily represent the ties between individuals and then of the network as a whole. This also explains why networked learning can be studied from two perspectives: ego-networks and whole networks. The first looks for example into the ability of a person to adopt a networking style for his/her learning. Here the attention can be on skills and strategies people have developed (Meijs & De Laat, 2011, Van Amersfoort, Korenhof, Moolenaar & De Laat, 2011). The second approach tries, for example, to understand the ability of an entire network to learn (Skerlavaj, Dimovski & Desouza, 2010).

**Networked learning research on professional development**

Networked learning might become a trending topic if we are able to continue the trend illustrated in figure 2 by Molenaar (2010). Of course, this visualization concerns ‘social networks’ and ‘social networks’ and ‘education’, but this is illustrative of the fact that there is an increase in interest in networked learning. Something similar is true for research in professional development networks. Using the ERIC database alone, we see an increase in research on ‘professional development networks’ from 47 publications in 1990, to 146 in 2000, and 215 in 2010.

![Social network publications 1953-2009](image)

**FIGURE 2:** Number of research articles on social networks and social networks & education (Source Moolenaar, 2010, p. 27)
In this section, I shall describe some relevant studies conducted in the area of informal professional learning in the workplace and, more specifically, the professional development of teachers in networks. I am by no means trying to provide a comprehensive review of the field. This merely serves to illustrate the kind of work that is being done and the challenges that we face. This presentation also serves as a bridge to the next section of this presentation where the centre’s research programme on professional development networks will be presented.

Research shows that informal workplace learning does not occur in isolation, but is deeply connected with the work that people carry out and is mostly done in collaboration with colleagues and peers. Professional development is effectively done and organized by professionals through their own social networks and communities (Cross & Parker, 2004; Duguid, 2005; Hargreaves & Fullan, 2012; Weinberger, 2012; Wenger, 1998). Pahor, Skerlavaj and Dimovski (2008) place an emphasis on a networked learning perspective because it helps to develop an organizational-learning culture. In their approach to networked learning, the individual is recognized as the primary source and destination of learning, while acknowledging that learning takes place primarily in social interaction. This approach stresses the individual drive for people to engage in networks for solving personal needs (see also Skerlavaj, Dimovski & Desouze, 2010 & Skerlavaj, Dimovski, Mrvar & Pahor, 2010). In their research, Pahor, Skerlavaj and Dimovski (2008) found that networks are a way to facilitate organizational learning and knowledge of the structures and patterns of these learning networks provide managers with a useful tool for improving organizational performance. They argue that network visualizations as well as identification of key players and their characteristics should become a part of a standard managerial toolkit.

In the area of teacher professional development, studies have shown that teacher networks add value for the implementation of innovations, teacher development, school leadership, and improved teaching practices (Dresner & Worley, 2006, Earl & Katz, 2007; Gellert, 2003 Lieberman & Wood, 2002; McDonald & Klein, 203; McMahon, 1997; Moolenaar, 2010; Schulz & Geithner, 2010; TLINC, 2003; Varga-Atkins, O’Brien, Burton, Campbell, Qualter, 2010). Networks create major opportunities for professional development as they facilitate the ability to connect and start learning with others. Lieberman and Wood (2002) conclude that if teachers become part of professional communities and networks, it results in meaningful changes in local knowledge and it leads to the exploration of solutions to problems and practices that occur in particular contexts.

This notion of professional networks supports the idea of ‘glocalization’ where teachers who, for example, are trying to work out how to make good use of the new interactive whiteboards that have been installed in their classrooms, draw on some pedagogical ideas or teaching materials that have been developed by fellow teachers in some other country. The result of their exchange is an example of how networks facilitate work-related informal learning resulting in improved use of – in this case, the interactive
whiteboard – where professional action is creating new knowledge as a blend of connecting global and local thinking.

Even though research strongly shows the advantages of networking in fostering professional development, we should not take it for granted. After studying five years of head teachers interactions, Trotman (2009), for example, found the beginnings of inter-school exchange in contexts where networks and communities are ill-defined (read: informally organized). His observations led him to conclude that collaboration is often hindered by insufficient knowledge of theories and processes that facilitate this approach to learning. He warns about the implicit assumption that schools (and organizations in general) are too easily equipped to engage in such professional development initiatives. One of his conclusions is that for networks to become sustained they need to develop and integrate a strong sense of strategic ‘withinness’, where role definition, developmental sequence, conceptions of community and management of change processes are fully attended to. These networks have a considerable advantage in developing meaningful collaborative partnerships over those that do not. (p. 352).

Carmichael, Fox, McCormick, Procter & Honour (2006) studied networks of head teachers (educational managers) and looked into the network structures and potential value of these relationships. They focused on structural elements such as network brokers, and strong and weak ties, suggesting that teachers can attribute value to either kind of relationship. They state, however, that it might well be that teachers and educators are not aware of the kinds of value that these relationships create. They suggest that further research into the nature of network ties is needed to appreciate the different kinds of value these relationships can bring. They see an important value for networks when it comes to collaborative knowledge construction. It is important to capitalize on these networks and use them for the benefit of practice; this requires thoughtful management and the schools need to know that these informal networks exists. Otherwise, the efforts of these networks remain implicit and invisible to others.

Büchel & Raub (2002) underline this problem of ‘invisible’ networking that operates via self-selection, and they show that management should focus on demonstrating tangible outcomes and develop an eye for the value that these networks create (Wenger, Trayner, De Laat, 2011). Networks are difficult to guide but as Büchel and Raub show, networks benefit from managerial direction. In their opinion, fostering networks means managing the context rather than all the details of the process. Their study shows that it is important for managers to sensitize network members to strategically important issues, to make it easy for networks to meet, to support their activities and to show the added value. Managers should realize that networks facilitate capability-building, resulting in the accumulation of tacit knowledge and organizational routines that are difficult to imitate or replicate. Networks form around burning issues and pressing work-related problems. According to Büchel and Raub, there is a direct link between the focus of a network and managerial support. Networks that focus on the so-called burning organizational issues are more likely to be appreciated. They advise networks to look for management sponsors to help demonstrate added value. The
sponsor, although not part of the network, maintains contact, helps to keep them aligned with organizational strategy and helps providing appropriate support when needed (Büchel & Raub, 2002).

The studies presented have in common that there are strong indications of the added value that informal networks have for professional development, but they also point out the challenges that we are faced with in the attempt to leverage learning. They show that, due to ill-developed understandings of the phenomena, informal learning is simply not that easy and it should therefore not be underestimated. It takes time to develop and integrate social learning strategies and to make them part of an informal-formal learning culture in the organization. It seems that most people are unaware of the value that these relationships represent and that management is often oblivious to the fact that these informal networks are in fact already there, part of everyday life in the organization. This invisibility makes them difficult to guide and sponsor.

Most of this research still describes what networks have to offer in general terms, and not so much what people actually do within a network and the strategies they develop to maintain their relationships. What is lacking is a grounded empirical approach describing networked learning behaviour, detailing the qualities involved. Arguing for a networked perspective on learning does therefore not imply that we already know a lot about how learning is effectively implemented in networks. Information as well as Organization sciences use social network analysis to find out how information is being shared effectively within networks. The focus here is often on network indicators such as density and degree to indicate how well people are connected within their networks and information exchange. They also make use of techniques to find out what the shortest paths are within networks along which information can flow from A to B. These statistics tell us a lot about how information is shared through network ties, but this says little or nothing about how and what is being learned. In terms of networked learning, it is difficult to hypothesise about the impact that networked relations have. In some cases, a remark by a single connection far away is enough to change your world; in other cases, it might seem that a tight group of 8 people might be needed to solve a particular problem. This is part of the reason why it is so important to realize that these social learning spaces vary from instance to instance, much in line with the notion of networked individualism. It is the aim of our programme to conduct further research on the impact that networked connectivity has on the ability of professionals to continue to learn. It is clear that networked relationships are an integrated aspect of learning. The question, however, is what makes a learning tie?
Research programme

So far, I have argued that informal learning is an important asset of the organization. It helps the organisation to adapt and adopt, to be innovative and creative. As such, informal learning facilitates continuing professional development, but it is professional development that is situated in daily practice, connected with professional activity and triggered by work related issues. This learning is spontaneous and implicit and is therefore hardly noticed as a deliberate action within the formal organisation. In order to elevate its impact and make this learning a strategic part of an organisation (instead of treating it as a by-product), we have argued for raising the potential of informal learning by creating more awareness about it with the aim of making it part of the formal organisational culture. Research has shown that informal learning is a social activity where professionals work together, share experiences, tell stories and create new knowledge. Because of its implicit nature, informal learning benefits from being well connected. Through these contacts, professionals will be able to ‘suss out’ whom to collaborate with or talk to when it comes to solving particular problems. The network serves as a kind of social infrastructure that paves the way to knowledge.

Social networking is a popular activity these days, but, as we have seen, when it comes to using it in the context of learning, it is not something that is easily adopted. While others argue for a network science (Watts, 2003), we feel there is a great need for a research programme on informal networked learning to further understand and enable teacher professional development networks. Work that will also help to grow teacher networks. Teacher networks are relatively small due to the nature of their work. Not only is there the ‘king in your own classroom’ problem, making teachers work in isolation, but they also have very tight teaching schedules leaving little room for free time that can be used for networking.

In this research programme, we will be focusing on questions such as what makes a learning tie? But also more pioneering work needs to be done on understanding and changing the learning cultures in schools and organizations in order to prepare the grounds for fruitful informal learning. That this work is challenging, but much needed, is illustrated by the work of Baker-Doyle & Yoon (2011). Their research shows that teachers stated that they were surprised to learn of another teacher’s expertise; they were often unaware of the experience and knowledge that members brought to the network. Baker-Doyle and Yoon, like us, argue for developing methods that help to understand the invisible force that shapes teacher learning and knowledge. They conclude that while teachers may individually gather information during a professional development workshop, it is through their informal social network that this information is interpreted, shared, compiled, contextualized and sustained. They also stress that each network is different and unique and that we need to further understand the role that informal networks play in facilitating professional learning.
At the Centre, we believe that the organizational culture and structure needs to change to be able to adopt a networking style and provide more autonomy to the professional. This relates to issues of trust, responsibility and distributed leadership. That leads, in turn, to questions about how to guide and sponsor informal networked learning. In addition, professionals need to develop networking strategies and to become more conscious of networked learning activity. What is someone's attitude towards being/becoming as a networked learner? When and how do we improve this? What is the ability of a social group to learn collectively? Where are these networks, how do we find them? Since informal learning is implicit, so, too, will the learning relationships these networks are made of be implicit. How do we know that the wheel has not been invented elsewhere, and perhaps even better? Or in other words, what value do these informal learning networks create?

We have developed a research programme to find answers to such questions. In the section below, we will provide a detailed overview of the kind of research that is carried out under the guidance of this chair on professional development through social networks. At points, this research programme sounds very ambitious, but it feels more like pioneering, attempting to work our way through a dense jungle – or perhaps, like diving under water to study the iceberg. A research programme helps to stay on track and connect findings with results from studies conducted elsewhere and build meaningful connections with research carried out in related fields.

Developing a blend of networked individualism and going local

Professional development opportunities need to start with professionals' practices. This invites them into the professional conversations and opens them up to critique, learning and to expanding their repertoire. The non-participating metaphors (acquisition and transfer) start with other people's ideas first, mostly denying what professionals already know and need (Lieberman & Pointer Mace, 2010), because the curriculum has already been established. In order to give more substance to this notion of starting with professional development from the ground up, Lieberman and Pointer Mace (2010) introduced an interesting initiative. They call for growing a local teaching movement, which is similar to the local foods initiatives and emphasises the importance of local small-scale trust networks bringing value to the everyday decisions that shapes teaching and learning in classrooms. They show that teachers can earn greater returns on the investment in their own knowledge and expertise by sharing the fruits of their labours with one other. In our research programme, we shall be emphasising the importance of this movement. We often see in our projects that starting with small and local networks is the key to cultivating and building networks that can last and expand (Goes-Daniëls, Berkers, Hulsebosch & Coenders, 2011; Hooijer & Van Amersfoort, 2011; Korenhof, Coors, Meijs, Van Amersfoort & Moolenaar, 2011). The Internet can provide a wonderful social space for teachers to learn and share together, but, at the moment, it feels too much like unsafe open waters, too deep to get in to. Our research shows that there are many informal hidden teacher networks directly under people's noses,
playing in the local pond, providing a wealth of potential contacts to learn from as a first step.

Although there is an increased awareness of the importance and value networks have for improving work, innovation and continuing professional development, we have also concluded that we currently rely to a great extent on general information about the benefits of social networking. We still have great difficulty in building and enabling networks, and providing them with trust and space that allows growth, expansion and finding ways to make their added value visible/explicit. We are in need of more empirical evidence that explains how these social networks operate, the strategies that people develop and how to utilize these informal spaces within formal organizations. In our research programme, we have developed three main strands to take this challenge on.

The first strand emphasises how people create and maintain social spaces that enable networked learning. The focus here is very much on the informal activities that people employ. Much in line with the networked individualism, we try to understand what people actually do during their networked learning activities. The focus is on understanding attitudes, skills and strategies used for successful networked learning.

The second strand is aimed at raising awareness about the fact that informal networks already exist. We try to bring these networks into focus and develop tools and mechanisms to support networks in their ability to expand their space. The work is partly inspired by the works of Cross and colleagues who stress the importance of acknowledging the existence of hidden networks and the need to develop a way of getting in touch with them. In our projects, we place a great emphasis on the fact that, in essence, we are not really going to do something new. Networked learning is not the newest hip management solution for elevating organizational learning. The first step is to realize that this learning has been going on since the start of the organization. Both the professionals and management ‘simply’ need to develop an eye for the day-to-day learning that fuels the organizations capacity to strive, innovate and compete.

The third strand is about what’s in it for us? Here we ask ourselves about the kinds of value that is being created as a result of networked relationships. As I said before, we are not only dealing with a management problem. Successful informal learning also means that professionals are capable of actively sharing, constructing and showing the benefits of their learning.

These three strands can probably best be seen as building blocks to be used in our projects when needed. We see each project as a kind of in-depth case study in which the use of certain research instruments, techniques and findings are embedded. The advantage of this approach is that we can be flexible and sensitive to the research setting. At the same time, the research strands provide a structured way of working, allowing for deepening and improving our work. By making sure that we use the right mix of instruments and methods in our projects, we are able to gather data from mul-
Multiple case studies that can be used to validate our instruments and develop generic knowledge contributing to networked learning theory more longitudinally. The figure below illustrates how the strands overlap with the research projects.

![Research Strands](image)

**FIGURE 3: Research matrix**

The case studies in this matrix facilitate our attempt to deliver research that has direct relevance for practice. The research strands, which are based on the study of cases, provide scientific rigor. And together they can help to inform policy making.

In this section, I shall first discuss the research approach. In the introduction, I mentioned that, in addition to an invisibility problem due to the implicit nature of informal learning, there is also an invisibility problem when it comes to conducting research. A double invisibility problem in fact. The first part is related to the problem of making relevant research findings visible and usable in practice. The second is more of a methodological nature and deals with the challenge of how one can study what one cannot see. To bring informal learning networks’ practices into focus, we need a bottom-up, practice-driven approach that comes with its own set of research tools. In the methodology section, we will outline this approach followed by a detailed description of the research conducted in this programme.

**Method – practice-driven research**

Before going deeper into these strands, I would like to elaborate on our method for studying these networks. Throughout this presentation, I have expressed the importance of understanding the practices by which professionals learn informally. I have argued that these networks develop from the ground up, are unique in how they utilize their own space and they come and go based on personal or collective needs. In our programme, we therefore aim to study the qualities of networked learning in its complexity. Trying to avoid simplifying matters greatly by testing predefined hypotheses that rule out many interdependent variables or isolating a single aspect of a complex social phenomenon. In this approach, the research programme follows the
research manifest (Martens, Kessels, De Laat & Ros, 2012) developed at our institute to raise attention for practice-based research that maximises both scientific and practical relevance.

In our approach, we work closely in co-creation with teachers, school leaders and administrators who are involved in understanding and promoting informal networked social spaces. This kind of research is often avoided because of its difficulty in execution, as well as the difficulties in getting it published in scientific journals (Martens, 2010). Nevertheless, we believe that – especially at this pioneering stage of understanding social professional development networks – we need to embrace this complexity and try to paint a more complete picture to stimulate theory-praxis conversations (De Laat & Lally, 2003). To accomplish that, we have developed a multi-method research model (see figure 4) aimed at triangulating several aspects of networked learning in a naturalistic setting (Erlandson, Harris, Skipper & Allen, 1993). This multi-method research framework combines social network analysis (SNA) to find out ‘who is talking to whom’, content analysis (CA) to find out ‘what they are talking about’, and contextual analysis (CxA) focusing on the context of the organization that the participants are working in to understand ‘why they are talking as they do’.

![FIGURE 4: Multi-method research framework for studying networked learning (De Laat, 2006)](image_url)

This model helps us to set up a structured research design, which can be repeated over time to understand network dynamics and see the impact of certain planned interventions.

**Procedure**

Our approach is based on co-creation (Martens, Kessels, De Laat & Ros, 2012; LOOK, 2011). This means that our participants are active participants in these research projects. This is important because we often try to influence or create a practice for informal networked learning in our projects, which needs to be owned by the participants, if it is to have any chance of sustained impact.
**Research team**

Practice-driven research co-creation asks a lot of the role of the researcher balancing involvement and keeping a critical distance. To help facilitate this, we always work with at least two researchers on any given project. To help to secure a certain distance further, we set up a kind of research team within the school or organization, that acts as a sparring partner that helps to interpret our findings and develop plans for future steps. This team consists of teachers, school leaders, administrators, etc. and should, in fact, reflect all relevant layers of the organization (Homan, 2006). This team forms the heart of the project, where the research findings are reflected upon in relation to the learning culture of the organization. With the help of this team (small-scale) studies are developed that will be executed by our researchers within the organization. The cycle of practice-driven design-based research is determined by this research team, with the studies taking place in the actual real-world environment.

**Align with current social learning practices**

Working in close co-creation also implies means that our collective involvement leads to changes in the projects. Timeline analysis is an important way of keeping track and documenting the changes that happened along the way and it also means that you never start from scratch. Every project has a certain history and it is important to tap into existing narratives told through collecting stories and biographies (Diepstraten, 2006). We start our projects with a process called ‘vraagverheldering’ (broadly translated as ‘question clarification’) to outline the current situation and needs found in the schools and organizations we work with. This also means that our starting point can vary considerably. Some see networked learning as team learning or project work, others only speak in terms of communities of practice, whereas someone might simply like to increase the action radius of their knowledge workers.

To help to bring the current situation into focus, we are developing a kind of lens or framework that will help us to look at the current social configuration of a given group (Doornbos & De Laat, 2012; Vandyck, Vrielings & De Laat, in preparation). Instead of implementing a purely theoretical perspective, we start by describing the social fabric of a person or group as it is experienced in practice. This description or snapshot will be used to understand the current situation and assess, with the research team, how networked learning can help an informal professional development culture. This approach was developed out of the notion that networks and communities are often strongly driven by purely theoretical ideas. In practice, however, social groups develop mixed forms, emphasising different aspects or social learning at different times (Wenger, Trayner & De Laat, 2011). We find that it helps to start with a group and ask the questions: given this group, how are the network and community aspects intertwined and integrated, how do they contribute to the cohesion and functioning of the group, and which one tends to dominate for which participants? What learning opportunities do they offer and what value do they produce? (p. 10)
The importance of this approach is to acknowledge the unique social setting, dynamics and desires of each group as it is situated in practice. This approach leads us to develop a set of dimensions and corresponding questions influenced by notions of social networks (Goodyear, Banks, Hodgson & McConnell, 2004; Haythornthwaite & De Laat, 2011; Lieberman & Wood, 2002), communities of practice (Lave & Wenger, 1991; Wenger, 1998; Bood & Coenders, 2004) as well as team learning (Kayes & Burnett, 2006; Knapp, 2010). The dimensions involve 1) the practice that this group is focused on, 2) the kind of value that this group creates around its domain, 3) its sense of being a collective, and 4) how this group governs its social space. A set of key questions for each dimension helps to describe the current social configuration. These questions serve as an exercise for groups to help reflect on how they act and talk about their aspirations.

- **Practice**
  - To what extent does the group focus on special events or integrate the group activities in daily work?
  - To what extent does the group exhibit temporarily or permanent social activities?

- **Domain and value creation**
  - To what extent does the group focus on broadening or deepening knowledge and skills?
  - To what extent does the group experience value creation, individually or collectively?

- **Sense of collectivism:**
  - To what extent do the participants exhibit a shared identity?
  - To what extent does the group exhibit weak or strong ties?
  - To what extent do the participants view one another as task executors or favor an open collaborative atmosphere?

- **Organization:**
  - To what extent does the group operate externally directed or self-organized?
  - To what extent does the group exhibit ‘local’ or ‘global’ activities?
  - To what extent does the group exhibit hierarchic of equal relationships?

**Maximizing relevance**

Finally, I would like to mention that our research methodology aims to maximise both scientific results and relevance for practice – thus addressing the visibility problem. This is not purely a matter of dissemination and valorisation. We aim to make our research instruments available as standalone reflection tools or exercises that professionals and groups can use regardless of our involvement. As such, they are open and publicly available from our website (see, for example, our networked learning toolbox (Korenhof, Coenders & De Laat, 2011). Our research centre LOOK has the objective of developing generic scientific knowledge about the professional development of teachers, and to make this available and useable for practitioners, policy makers and researchers. This is a difficult task and finding the right balance is not always possible,
but it is worth pursuing this goal. It is our aim to have the knife cut both ways. We use our instruments to collect scientific data about social networking in practice, while the organizations involved use these instruments to reflect on the impact that networks have on professional development. We combine practice-driven research with elements of design-based research (Martens, 2010; Martens, Kessels, De Laat & Ros, 2012; McKenney & Reeves, 2012; Van Aken & Andriessen, 2011; Verschuren, 2009).

Research strands and insights
In the rest of this section, I shall detail the three different research strands and illustrate some of their findings or provide descriptions of instruments and frameworks that we are currently developing at our centre.

Strand 1: Informal networked learning skills and strategies
In this research strand, we focus on incidents of informal learning in teachers’ day-to-day practice and explore how they are handled through networked activity. Informal learning is often triggered by work-related issues or problems. These issues form a good starting point to zoom in on. It gives us something very concrete to talk about and it is relatively easy to explore during an interview how the help of others facilitated their learning. Through such interviews, we study people’s attitudes towards networked learning and how they act as networkers in social learning spaces. As I said before, much is known about the benefits of social networks for learning, but what people actually do and how they maximize their learning ties is unknown to some extent. In this strand, we have several instruments and methods to work with. For example, we developed a playful coffee-table magazine-style quiz to help people to become aware of what kind of social learner they are (Meijs & De Laat, 2012; Korenhof, Coenders & De Laat, 2011; Korenhof, Schreurs, Meijs & De Laat, 2010). This provides us with an idea of a starting point at the beginning of a research project, but it helps the professionals involved to become more aware of what kind of social learner they are, and serves as an opening to start having meaningful conversations about this phenomenon. A further organization-wide questionnaire, the network scan, can be used to help to establish a broader idea of the extent to which people develop and use networked relationships for their professional development.

These instruments are much needed because the simple fact of the matter is that people’s awareness of informal social learning is often poorly developed (Trotman, 2009. Like Baker-Doyle & Yoon (2011). We have found that teachers’ experiences with networked learning are mostly implicit (Amersfoort, Korenhof, Moolenaar & De Laat, 2011). Amersfoort et al. used an input-process-output method to explore more deeply how teachers experienced informal networked learning. Based on a collection of interviews with teachers, we found that openness and an open attitude are necessary for engaging in networked learning activity. In addition, participants need to be actively involved and ought to bring a certain degree of expertise for the network to be successful. The network should have a shared framework, as well as a certain degree of diversity amongst its participants in order to provide different viewpoints and expertise.
Being involved in the networked learning process, teachers indicated that it was important to have a balance in what they contribute and what they take away. In the networked learning process, teachers learn where to go with certain problems and how to extend their personal networks. Teachers find engaging in networked learning activity to be enjoyable and an attractive way of acquiring and developing knowledge. They make new friends and experience a high level of trust. In practice, networked learning often takes place in small, open learning networks. Teachers feel the need to have face-to-face meetings with their learning network on a regular basis. Finally, on the output level, teachers report that engaging in networked learning leads to an increase in their knowledge, improved teaching practice, and better student outcomes. As a result of networked learning, teachers open up and show greater vulnerability. We found that they learn to appreciate the value of social contacts for learning and broaden their perspective. Teachers reported finding learning more enjoyable and seeing networked learning as a valuable addition to formal training.

Such results are encouraging and make us want to go further to find out, at a deeper level, what participants actually do and value (Meijs & De Laat, 2012; Haythorntwhaite & De Laat, 2012). We developed an interview schema where the focus is on networked learning literacy, which comprises skills and competencies for learning with and/or from others and studying how they facilitate meaningful networked learning activities and the value that this has for the teacher. The focus is explicitly on individual teachers. Through introspection, we aim to find out how the teacher sees him or herself as a networked learner and how literate is he or she when acting as a networked learner.

Each interview begins with a conversation about informal learning in the workplace and what a teacher thinks networked learning is in this context and what this means for him or her. We aim to keep this conversation as grounded as possible in local processes, e.g., by referring to concrete everyday examples in the workplace. Again work-related problems that require learning in order to solve them are at the centre of these interviews. Exploring how they develop collaborative learning relationships serve as a base for talking about networked learning activities, skills and strategies. During the interviews, the main concepts that need to be explained are written down and the teacher draws lines to show how concepts are connected.
The result is a concept map showing the skills that are used for specific learning activities and the value that this has for the teacher. In figure 5, the circular nodes refer to skills and competencies used by the teacher when engaging in informal networked learning activities (square nodes). The triangular nodes show the value that these networked learning activities have for the teacher.

Studying these network structures in more detail (figure 6) shows that, for this teacher, strategies for learning something new (aimed at exchanging information, changing self-perceptions and get new ideas) involves being open, vulnerable and sensitive, and has value when meeting new people to learn from. She finds it best to reach out to new people for alternative perspectives and ‘refreshing’ dialogues.
This teacher appears to have well developed ideas about the networking strategy that is best used in specific circumstances. This shows how such professionals can be quite strategic about the information landscape and networks that they have access to. It shows a high degree of understanding, not only of their learning needs in the workplace, but also of the processes needed to operate within this informal setting. Another way of looking at this is to consider that the ideas presented are theories of social learning used by a teacher when engaging in day-to-day informal professional development in the workplace. Theories that are tested in the day-to-day search for information in their network and in concert with emerging ideas of who they are within their learning area.

In this strand, we aim to collect more of these interviews and contribute to the development of theories on the skills and competences people develop for their networked learning activities. These findings will help to feed the discussion on 21st century skills and will also provide professionals and managers with insights on how to enter social learning spaces with confidence, increase professional autonomy, and meta-cognition on regulating lifelong learning through social networking.

**Strand 2: Network awareness and support**
This research strand has two main components. The first is aimed at developing ways to raise awareness of the hidden informal learning networks. The second component concerns to feed the ability of networks to learn. For this purpose, we test and develop interventions to help build the capacity for social networking within organizations. This involves developing roles, group building exercises and progress monitoring instruments.

**Awareness**
Research on network visibility was inspired by work from Cross and Parker (2004) on the power of hidden networks, and network mapping exercises by Carmichael et al. (2006) and Fox, Haddock & Smith (2007) to name only a few. Carmichael explored the use of mapping teacher networks. They developed a method for visualizing relations within and between schools as a step towards becoming aware that networks exists and in an attempt to further understand the nature of these networks. Their work is purely informative, however, and is somewhat loosely structured, aimed at capturing a snapshot of significant actors, places, events and relationships used for creating and sharing ideas of teaching and learning. In a way, their approach follows Wellman’s networked individualism perspective by stating that it is important to map individual views of their networks and see how they are connected around issues that matter to them. These ego-networks are referred to as being at eye-level and easy to understand. This avoids the problem with visualizations of complete networks where there are often so many connections visualized that one easily gets overwhelmed and loses the sense of usefulness. In this ego-network approach to network analysis, there is
no assumption that individuals understand the entire network, or even that an entire network exists (Carmichael et al., 2007).

In our research, we also started with drawing individual networks (Korenhof, Schreurs, Meijs & De Laat, 2011; Haythornthwaite & De Laat, 2011). We developed a method using contact cards (see figure 7). During this exercise, participants are invited to visualize their egocentric network, including their connections to others and the connections among these others. They are asked to draw these contact diagrams as a way of describing their participation during particular occasions of informal learning. The resulting contact cards act both as a research tool and as a source for designing and extending awareness about the existence of informal professional development networks in the schools.

![Figure 7: Example of a teacher contact card](image)

figure 7 shows the contact card of a teacher showing certain ‘critical learning friends’ that were used for her professional development on a particular topic. In this data set, the topic was about creating continuing learning trajectories for individual students in her class. This is a difficult topic, and, as can be seen, the teacher (‘San’, positioned in the centre of the picture) is not dealing with the problem on her own. She engages with a range of people to discuss and reflect on how to implement learning trajectories in her classroom. (All names shown are pseudonyms.)

After developing contact cards with several (preferably all) teachers in a school, it is possible to build a collective network that reveals a social learning network structure within the entire school (see figure 8).
This visible evidence of the network, in both its connections and the content of connections, is important for laying the groundwork for new participants to be able to access them. When presenting a visualization of the whole network, teachers can see not only ‘who talks to whom’, but also ‘what they are talking about’. This makes it easier for other teachers to join certain networks when they encounter similar work-related issues. We find that working with these visualizations stimulates a networking attitude amongst teachers in the school towards informal learning. On the one hand they become aware that they are not alone in their classroom and that professional development is also a social activity. On the other hand, it becomes visible what the burning issues are that require professional development. This awareness enables access to networks in order to start productive collaborations and it raises awareness amongst management about what the day-to-day issues are that people struggle with in the workplace (Korenhof et al., 2011).

One problem that we encountered with this approach, however, is that it is extremely time consuming and involves a lot of manual labour in recreating and updating these visualizations (De Laat & Schreurs, in press). This creates a gap between the moment that data is collected and the moment that it is interpreted by the research team and its usability for the teachers in the schools. This results in a loss of momentum in working in co-creation and its relevance for practice. As a result, we are now in the process of developing an online user-driven tool capable of visualizing and connecting personal informal networks automatically, based on work-related problems (Schreurs & De Laat, 2012). We call this tool the ‘network awareness tool’ (De Laat & Schreurs, 2011).
The purpose of this tool is to collect personal networks on multiple problems, in order to automatically present an overview of all existing networks in and between organisations for a given research project. Teachers can log in, update their networks or simply add new networks based on new emerging work-related issues, and they can explore existing networks by selecting issues of their interest. As a result, this network awareness tool operates as a ‘knowledge browser’ showing the informal networked connectivity around existing work-related learning topics (see figure 9 or have a look using our demo database). In a way, the tool serves as an interactive, user-generated version of the Yellow Pages, where you can easily discover whether there are existing networks around problems that you are currently faced with. Similar to finding a nearby garage using the Yellow Pages, the network awareness tool will guide you to networks that you can contact or perhaps even join. We should emphasise that this tool only shows the existence of networked relationships. Where and how these networks wish to meet and collaborate is another matter. The advantage of this is that one can name and show any relevant relationship as opposed to showing only relationships within exclusive social networking sites where only relationships between registered members can be shown.

The network awareness tool combines three important streams of information:

1) It produces an overview of current issues or problems that professionals are actively occupied with informally,
2) For each of these issues, a network visualization is generated based on existing professional relationships, and
3) it shows the organizations or subdivisions within an organization where these network members are located.

Figure 9 shows that users can navigate a tag cloud of all existing problems or issues that are mentioned (in the grey column on the right). Having selected a problem, one can see the specific informal learning network around that problem pictured in the middle section of the screen. This allows the user to explore the network from a user perspective, a specific organization perspective or simply all organizations involved. In the example in figure 9, a visualization of a network based on the ‘JB-RT’ problem (indicated by the red box in the tag cloud) in the ‘Ber’ organization is represented.

See http://problemshift.com/nib_export/example4anon.html for a demo.
Users can also click on the nodes (represented by the dots) in the network visualization to see the network relationships (ties) of that particular person. The lower left side of the screen (see figure 9) then automatically provides a listed overview of the connections and themes that this person is active in as a networked learner.

Current research with this tool is aimed at understanding the impact of these visualizations on the development and accessibility of networks and to see (or become aware) how professional development networks are deeply embedded in the informal organizational learning culture. Furthermore, this tool is being used to collect dynamic social network data over time to explore what professionals do to maintain their positions in an informal learning network? This work bridges the research done in strand 1 and 2 and aims to understand the formation and development of learning ties and how they influence network structures. This research will be based on teacher social network data combined with individuals’ demographic characteristics, values, networked learning competences and their position in informal learning networks.

Support
The second component deals with ways of facilitating these emerging networks. Being aware of informal networks is not enough on its own. Through our projects, we became aware that both professionals and managers struggle with developing the ability of elevating the potential of social networking and to go beyond the hype and find ways to sustain it. Hodkinson & Hodkinson (2005) are right in saying that a professional learning culture requires an organization-wide approach and needs to be addressed in integrally, by having several organizational levels work closely together. This means that we need to develop methods and toolkits that facilitate organizations
and guide them in successfully implementing a more conscious approach to informal learning (Büchel & Raub, 2002; Deal, Purinton & Cook Waetjen, 2009; Pahor, Skerlavaj & Dimovski, 2008). In some of our projects, we have seen that this also resulted in appointing network ambassadors within organizations, or knowledge brokers or even informal learning coordinators. All of which are signs that organizations are taking this development seriously. In this part of the programme, we aim to develop guidelines and activities to test how we can help to make these networks successful.

There are quite a few guides out there and a quick look at Amazon.com shows that you are not alone in this ‘quest’. A funny, recent book, called “Networking for people who hate networking” (Zack, 2010), emphasises the seriousness of networking these days in order to accomplish the goals that are important to you. It provides a useful framework in the area of knowledge management developed by Büchel and Raub (2002). Their main point is that effective knowledge networks increase innovation and improve organizational efficiency, but they can have greater benefits if they are structured and receive management guidance. Based on their research in several companies, they propose a four-stage process to foster value-creating networks (see figure 10). Stage one is what they call focussing the network by aligning their work-related problems to burning issues and therefore making sure they are at the heart of the organization's business and ensure management support. The second stage is aimed at creating the network context. Since networks form what the authors call a parallel structure alongside the more traditional boundaries within organizations, it is important for it to become recognized as a meaningful environment for productive activity. The third step is focused on routinizing network activities. Define, for example, network roles that help network coordination and develop a support structure. The final stage they describe is about leveraging network results. For networks to grow and survive, it is important to share their results within the entire organization. This helps to show their added value and to legitimize their existence.

FIGURE 10: Stages of network development (Büchel & Raub, 2002)

Although the model provided by Büchel and Raub is very useful (especially for helping management) and provides a lot of insights about how networks develop, it places quite some emphasis on the formal side of informal-formal learning. It seems that networks secure their existence as long as they align themselves with what managers find
important. However, networks also spontaneously emerge as a reaction to things that might not be recognized as important (Wenger, 1998; Homan, 2006). In our research design, we place great emphasis on emerging learning in the informal organization. We therefore start from the ground up. For this purpose, we test and develop useful interventions in close collaboration with the research teams in our projects to help build a toolkit and develop workshops to enable social networking within organizations. This involves developing roles to coordinate networking activity, group building exercises and progress-monitoring instruments to help networks reflect on their development and think about how to achieve their aspirations.

The toolkit we developed provides a large set of cards that networks can select from according their development and needs. The cards are categorized as information cards, inspiration cards, activities and interventions, and self-reflection cards to assess and regulate their development. This toolkit is organized around stages of development referred to as, sowing, cultivating and harvesting. Based on the assessment of their development they can make a selection of cards that suits their own route to expansion and create value. Through our research, the effects of these cards will be evaluated and more will be added online as our work progresses.

**Strand 3: Value creation**

The third and final strand of our programme concentrates on the value that networks and networking creates. With this strand, we aim to come full circle and focus not only on strategies and skills, on raising awareness and providing support, but also on helping to articulate the benefits that these networks have and try to give them a explicit place within organizations. In order to achieve this, the professionals themselves have a great responsibility (Kuipers, 2012). They need to be able to show and tell how engagement in informal networks facilitates problem-solving and helps them to achieve their aspirations and personal development goals. This takes more than simply saying that you had had a useful network meeting the other day. When it comes to articulating value creation in networks (Wenger, Trayner & De Laat, 2011), we think it is important to focus on the stories that people have about what participation means to them and help them to frame their narratives by providing a genre that helps with telling value-creation stories. As human experiences that evolve over time, communities and networks have stories—how they started and what has happened since. It is in the context of these narratives that one can appreciate the learning that is taking place (or not) and that value that is being created (or not).

According to Beattie (2000), narratives present accounts of teachers that show how they have created professional knowledge through inquiry. These narratives present the voices of teachers as they deal with their most pressing issues and concerns, examine prior knowledge in the light of new understandings, and construct new knowledge through the process of reflection, dialogue and inquiry. The details of the narratives are illustrative of how these teachers have learned to question what has normally been taken for granted in their lives, to find patterns and connections and

to think critically and creatively. They show the people and personalities behind the ideas and the issues, and provide glimpses of these individuals' personal hopes, beliefs, theories, world views, passions and preoccupations. Beattie emphasises the work of Noddings (1984) who argues that by entering into a ‘caring relationship’ with others a genuine dialogue can take place and empathy, inclusiveness, mutuality and trust can develop. These relationships enable respectful dialogues and conversations with multiple others, through which individuals come to know themselves and others, to know what they know and to construct professional identities. The development of professional identities is at the core of the argument about adopting new metaphors in the context of professional development emphasising participation, construction and becoming (Knight, 2002; Wenger 1998; Boud & Hager, 2012).

The proposed framework aims at facilitating telling stories about value-creation and recognizes several cycles of value (Wenger, Trayner & De Laat, 2011). The first and most basic cycle considers networking activities and interactions as having value in and of themselves. They can be fun and inspiring. One can get an answer to a question, a solution to a problem, or help with a challenge. This cycle is referred to as immediate value. The second cycles addresses potential value. Not all value is immediately achieved. Some activities and interactions can produce capital whose value lies in its potential to be achieved at a later stage. The third cycle of applied value concerns adapting and applying knowledge to a specific situation. This can mean reusing a lesson plan or a piece of programming code or trying out a suggestion. Having access to new practices or tools in itself may not be enough, even when applied. One would expect the application of new ideas to practice to result in improvements in performance, but this is not guaranteed. This fourth cycle of realized value reflects on what effects the application of knowledge is having. The fifth and last cycle of value creation is achieved when social learning causes a reconsideration of the learning imperatives and the criteria by which success is defined. This includes reframing strategies, goals, as well as values. While there are causal relationships between the various cycles, it is important not to assume a hierarchy of levels or a simple causal chain.

Together, these cycles help to paint a more reliable picture on how a network is creating value. To do that, it is necessary to follow value-creation through the different cycles even though not all cycles have been experienced (yet). Such a cross-cutting account is what we call a “value-creation story”.

As these stories develop over time, these stories will refer to elements that are also monitored as indicators at each cycle when new experiences are added. Such elements can be referred to as exciting conversations, downloaded documents, interesting new practices, or relevant measures of performance. In the process, stories also substantiate these indicators, give them life, and make them more meaningful by connecting them into more extensive processes of value creation. Accumulating evidence of the value created by a community or network can be represented as a matrix of indicators and stories. In figure 11, we have put them together showing the development of value creation stories over time, connected to network activities. The squares repre-
sent indicators of value at each cycle. The coloured lines represent stories that weave among the elements of each cycle.

Current research on value creation in networks is aimed at collecting these stories in order to validate the framework and to find out more about the ability and usefulness of professionals to tell these stories. This research will help to establish a practice and culture of value-creation within the schools and develop ways to tell these stories. We found that these stories facilitate reflection and raise awareness about informal professional development in social learning settings. At the same time, these stories seem to emphasise the first three cycles of value creation; stories that embrace achieved and reframed value are much harder to tell. There is evidence that the framework helps networks and communities to articulate and indicate value that would have been ignored otherwise (Doornbos & De Laat, 2012), but more research is needed to provide a more solid empirical evidence base. Additional research will also focus on how these stories can facilitate professional conversations between hierarchical layers in organizations. It is important to find out how these stories can help to show the value that is created informally and how management can formally acknowledge and sponsor these processes. Research in this area is concentrated on which value-creation indicators will promote meaningful and respectful staff appraisal conversations and how these stories can become part of personal development plans.
In this section our research programme was presented. Research that is concentrated on the question: what makes a learning tie? This programme involves several research strands to focus research on the key elements of informal networked learning: networking skills and strategies, raising awareness about existing networks and developing ways to support and value them.

Relationship with other research at LOOK and elsewhere

Our research centre’s aim is to conduct research on the professional development of teachers in workplace settings. The research programme as presented above has many links with research carried out in other research domains in our centre. For example, research in the informal networking skills and strategies strand will also be coordinated in collaboration with the research being done in the area of teacher motivation to learn (Martens et al, 2011) and the development of professional identity (Kessels, 2012). The work on developing practice-based methods to align social-learning dimensions with current social learning practices and visualisation of informal networks can contribute to research being done to strengthen team learning in vocational education (Nieuwenhuis, 2012). Research on value creation, storytelling and developing rich learning cultures will be conducted in collaboration with research coordinated by Kuipers (2012). The network awareness tool is now being used in several projects across LOOK and is being used internally to visualize our own networks.

The network awareness tool has also raised interest from several research groups within the Open Universiteit (CELSTEC and Management studies) and other institutes to explore further research collaborations. With the Open University of the UK, we are implementing this tool in their new online Social Learn platform to provide automatically generated learning analytics data and visualizations on the development of social learning networks within Social Learn. With the National Science Teachers Association in America, we are exploring its usefulness for visualizing nationwide online teacher networks. In the Netherlands, we are exploring the possibility of linking networks of school leaders in collaboration with the Netherlands School for Educational Management. Along with Delies and her research group at Alfa and Stenden college (2009), we are working on implementing this tool to conduct research on regional knowledge economies and networks between businesses and schools. And with InTouch, a company that provides IT services in combination with social networking solutions to empower the engaging company, we aim to study how the knowledge browser can be used to foster the InTouch Academy and inter-organizational professional development and knowledge management. We are also studying how the implementation of cloud technology, which directly facilitates the informational structure of an organization can be of advantage, in combination with the use of social media tools, when involved with more complex emergent organizational processes. All this research will be contributing to finding ways of embracing informal learning processes in the formal learning culture of organizations.
Finally, I would like to mention that we encourage a networking approach to our own practice at LOOK. All of our instruments, tools and methods are publicly available for use and we would like to invite you to try and use them. Needless to say, we welcome your feedback and, above all, we are very interested in building new connections with research carried in similar or related fields.
Wrapping up and acknowledgements

The time has come to start wrapping things up. This address presented an argument on the importance of informal learning in organisations and in favour of enabling the social networks in which this learning takes place. We have indicated that there is a strongly increased awareness about the potential of these informal learning networks but that, at the same time, it seems extremely difficult to make the most of it. This is partly because of how our culture predominantly thinks about learning, namely as education, – and has closed its eyes for the spontaneous learning that happens implicitly, day-to-day around us, processes we even take part in ourselves. We have shown that this is mainly because we have been focussing on the wrong metaphors and adopting a culture of control and planned intervention, resulting in narrowing and frustrating professional autonomy instead of enabling it and provide a culture of trust and openness where professionals feel empowered and dare to take risks to expand their horizons. We have illustrated research findings that show promising results but that also indicate the difficulties that we face when implementing such an approach. Partly because we are dealing with a form of learning that tends to be invisible and remains within the networks in which it takes place. This inspired us to develop a research programme to leverage networking skills and strategies, raise the awareness of existing networks and try to integrate them in the formal organization without formalizing them. This process needs to be carefully guided and for that purpose we intend to develop methods and toolkits to help change the current learning culture and appreciate its value. As such, this research programme touches on many issues and has many hooks to relate to other research initiatives elsewhere, and we hope to turn them into rich and fruitful connections.

Time to end by expressing some words of appreciation.

First I would like to thank the Rector of the University board, Anja Oskamp, for her confidence in my appointment.

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I have spoken.
References


- LOOK (2011). Get connected! Heerlen: LOOK, Open University of the Netherlands
- Weinberger, D. (2011). Too big to know: Rethinking knowledge now that the facts aren’t the facts, experts are everywhere, and the smartest person in the room is in the room. New York: Basic Books.

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