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Teachers' motives for learning in networks: costs, rewards and community interest

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ABSTRACT

Background: This paper discusses teachers' perspectives on learning networks and their motives for participating in these networks. Although it is widely held that teachers' learning may be developed through learning networks, not all teachers participate in such networks.

Purpose: The theme of reciprocity, central to studies in the area of learning in networks, is often approached from a rational exchange perspective. This study attempts to extend this approach with reference to the concept of symbolic interactionism. The study was guided by the following research question: *What is the relationship between teachers' perceptions of learning networks and their motives for participation or non-participation in these networks?*

Design and methods: In order to address this research question, semi-structured interviews among 25 teachers in secondary education in the Netherlands were carried out. The semi-structured interviews consisted of three parts: background information, perspectives on learning networks and personal experiences with those networks. Data were analysed qualitatively and analyses consisted of within-case analysis, and cross-case analysis of interview fragments. Three themes were considered: (1) perspectives on learning networks, (2) motives for participation perceived as rational exchange, (3) motives for participation perceived as related to social order.

Findings: The findings are presented around these three themes. Each theme is discussed in relation to relevant aspects from the literature. Findings indicated that teachers perceived learning networks to be organised both within-school and outside school, and mostly focused around specific content knowledge. Reasons for participation or non-participation were related to rational costs and rewards (such as time, technology, self-efficacy); in symbolic motives (such as joy, sharing and mutual understanding), and also in a sense of meaning that resulted from networking activities.

Conclusions: We conclude that, in addition to social exchange motives, the data suggest that symbolic aspects of communication and interaction play an important role in considerations for participation in learning networks. This may be described in terms of four 'types'

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of networking teachers: the *Community focused networking teacher,* the *Locally focused networking teacher,* the *Not-yet-networking teacher,* and the *Non-networking teacher.* It is hoped that these exploratory findings could be helpful in supporting the development of learning networks for all teachers.

Introduction

Professional and social changes, together with ongoing technological developments, require teachers to develop themselves continuously and to keep content knowledge and pedagogical skills up to date (Liebermann 2000). Challenges in daily practice encourage teachers to learn spontaneously, in an informal manner: for instance, by consulting colleagues or experts (Billett 2004). This process of informal learning consists of social interaction and gaining experience from colleagues and peers, and leads to a strengthening of informal relationships (Eraut 2004). Access to networks resulting from these informal relationships has become an important aspect of continued professional learning (Chapman and Hadfield 2010; Doppenberg, Bakx, and Brok 2012; Lieberman and Pointer Mace 2010). Learning in networks can give teachers the opportunity to develop themselves in a flexible way together with colleagues, by focusing on shared learning needs and at the same time staying close to their own teaching practices (Vrieling, van den Beemt, and de Laat 2016).

There is a growing body of literature on learning in networks (Jones 2015; Ryberg et al. 2006). However, this approach appears to have been a rather weakly conceptualised phenomenon for both student teachers and in-service teachers in many countries (Dobber 2011). At the same time, we see increased attention in educational practice and policy to social learning and learning networks as an approach to teacher professional development. In countries such as the Netherlands, where this study was conducted, this is encouraged by funding governed by the Ministry of Education and The Netherlands Initiative for Education Research (NRO) for research on teacher learning networks and communities (e.g. Doppenberg, Bakx, and Brok 2012). Despite these initiatives, more needs to be known about how teachers look at networks, how they perceive benefits or disadvantages of learning in networks, and what their motives are for participation or non-participation in such networks. The limited number of studies that focus on teachers' perceptions of networks make a case for considering both values and teaching practice (e.g. Engvik 2014; Pedder and Opfer 2013). Therefore, the present study aims to contribute to a better understanding of how teachers' perspectives on networks and learning in those networks can be used to understand and interpret teachers' motives for participation or non-participation in those networks. As such, we intend to understand how these perspectives promote and improve active participation in learning networks.

The focus of this study is on learning in networks as a form of teacher professional learning. Below, we first discuss our approach to learning in networks. This approach serves as a lens through which to look at teacher's perceptions of networks and motives for teachers participating or not participating in those networks. In particular, this paper positions the rational exchange approach (Homans 1961) alongside elements from symbolic interactionism (Mead 1934). Participation in learning activities can be driven by rational motives: in exchange for a predefined amount of time, money and effort, people develop their

knowledge and skills (Muthusamy and White 2005). However, informal ways of learning, such as learning in networks, are often situated and contiguous (cf. Boud and Hager 2012). Therefore, they may align with non-rational motives that emphasise social-normative aspects, such as habits, rituals, traditions or simply the joy of being part of a community (Ryberg et al. 2006). Both rational and non-rational motives are explored in this paper.

Theoretical background

Learning in networks

Learning networks are perceived as online and offline spaces in which participants connect ideas, share problems and insights in a constructive way, and connect with familiar concepts, using new knowledge that is collaboratively constructed through dialogues and social interactions (Wenger, Trayner, and De Laat 2011). Because of technological and societal developments, networks can become flexible, borderless and innovative. Networks, as entities, are able to create collaborative environments, focus their efforts and develop agendas that grow and change with their participants (Liebermann 2000). This reflects the development from rather static communities into dynamic networks of practice (De Laat, Schreurs, and Nijland 2014). Learning in networks can, thus, be seen as social action, and learning networks can be seen as social structures that enable both collaborative and individual learning.

We suggest that the Dimensions of Social Learning framework (DSL) is helpful to describe participants' experiences of the processes in a learning network: in particular, the social structure of a network and its accompanying exchange factors (Vrieling, van den Beemt, and de Laat 2016). The framework consists of four dimensions: practice, domain and value creation, collective identity and organisation. Each of the four dimensions is constructed from several indicators that represent the extent to which the members of the network show specific attitudes and behaviour. *Practice* refers to the extent to which the members of the network exhibit social activities and the extent to which their knowledge is integrated in day-to-day activities. *Domain and value creation* refers to the subject or field that inspires members to share, broaden or deepen their knowledge and skills within the network, including the value this creates for the participants' practice. *Collective identity* is about the mutual engagement that binds the participants together in a social entity, shown, for instance, by a shared identity, strong connections and the perception of members as knowledge creators rather than as task executers. *Organisation,* finally, refers to the extent to which the members share social norms, the extent to which they are self-organised, based on hierarchical or equal relationships, and the extent to which they have a focus on local or global activities.

Research suggests a positive relationship between the indicators of these four dimensions and perceived sense of community and learning (Schreurs et al. 2014). For example, networks whose participants perceive the network as a team and show attention to each other both professionally and informally, who have an open attitude towards their work and development, and a supportive attitude towards non-participants, are represented in the DSL-framework with high scores on indicators such as social activities, broadening and deepening knowledge, mutual engagement and a shared interactional repertoire (see also Raes et al. 2017).

Motives for learning in networks: a rational exchange perspective

Research on learning networks (online or otherwise) often expresses the considerations for participation in terms of a balance between costs and rewards. Efforts to quantify this balance recurrently simplify costs and rewards to bringing and fetching, mentioning diverse ratios (Tomsic and Suthers 2006). One strain of literature describes this phenomenon by looking at the amount of passive participants in a network, the so-called 'lurkers' (Nonnecke and Preece 1999). Lurkers may be perceived as freeloaders, who benefit from a network's knowledge and experience without giving anything in return (Dennen 2008; Preece, Nonnecke, and Andrews 2004).

However, so-called lurkers, or in a more positive tone 'listeners' (Wise, Hausknecht, and Zhao 2014), may still be legitimate participants who learn by seeing others engaged in dialogue or by studying contributed materials (Dennen 2008). Studies adopting a more qualitative approach to the costs and rewards balance focus on the experienced quality and the psychological notion of reciprocity (cf. Aviv and Ravid 2005; Van Acker et al. 2013). These studies explain the large number of so-called lurkers by referring, for example, to lack of self-confidence or being a novice to the field.

Motives for participation in learning networks expressed as a rational consideration of costs and rewards, can be regarded as resting on social exchange theory (Homans 1961). According to this theory, interactions between teachers would be seen as negotiated exchanges formed by subjective cost-reward analysis and the comparison of alternatives.

Van Acker et al. (2011) situated social exchange theory in the context of learning networks, allowing for an operationalisation of the variables 'costs' and 'rewards'. They identified three aspects of costs for teachers' participation in learning networks, namely self-efficacy, time and technology. Self-efficacy is related to a teacher's self-experienced skilfulness in participating and contributing to a learning network: for instance, developing content that is of interest to the community. When teachers think of themselves as skilful and that their content is of additional value to others, they will be more inclined to share this content. Developing self-efficacy in this context can be seen as a cost, because the lack of skills requires an investment in schooling. A second aspect of costs is the time investment: for instance, for developing content or knowledge to be shared. Finally, in the case of online networks, it can be expected that technological costs, or, more specifically, the effort needed to apply technology, correlate negatively with contributing to the community (Van Acker et al. 2011).

Although Homans' social exchange theory is often explained as being based on an economic-rational exchange, with an emphasis on costs, the basic idea actually relates to the non-material value of exchange, such as reputation, altruism, reciprocity (Muthusamy and White 2005). Van Acker and colleagues (2011) relate these non-material rewards to teachers sharing materials and knowledge with others: reputation refers to the recognition teachers could receive from contributing to the network; altruism implies that teachers see participating in the network in itself as pleasant; and reciprocity implies that teachers participate because they believe others will do so as well.

The assumption of Homans' theory is, nevertheless, exchange, which is reflected in the definition of associations as exchanges 'of activity, tangible or intangible, and more or less rewarding or costly, between at least two persons' (Homans 1961, 13). The theory suggests that people do things for others with the expectation that the rewards will exceed the costs. In the absence of rewards, such behaviour will be enacted less often overtime. The rational

exchange approach therefore perceives people's motivation to contribute to networks as driven by economic reasons and self-interest (Pessers 1999).

Motives for learning in networks: exchange as social order

Reciprocity, however, can also be non-economic and motivated by community interest and moral obligation (McLure Wasko and Faraj 2000), thus enforcing social order and community feeling. It is the social-normative aspect of social interaction, for example, identification with a community or group, which is missing in rational exchange theories. Theories such as symbolic interactionism (Mead 1934) start from the assumption that people's actions are based on moral and social motives. Central to this perspective is the feeling of community and mutual relations as a basis for reciprocity that may be postponed. The economically oriented exchange theories, such as Homans's, reduce social reciprocity mainly to enlightened self-interest (Pessers 1999). This contrasts with symbolic interactionism, which places reciprocity in a social-normative context. By result, reciprocity is not only determined by economic self-interest, but also by traditions and habits, collective consciousness, rituals representing societal values and the need for meaning-giving to the community or society at large.

Symbolic interactionism posits that the development of reciprocity starts with understanding and being able to apply conventions within a community or network (Mead 1934). Applying conventions is realised by 'taking the role of others' (in your *Mind*): thinking about how specific other persons in the community would respond to your actions. The next step represents a larger degree of connectedness with the community: the S*elf* is the process of relating your actions to a generalised other: for instance, teachers in general. The highest degree of connectedness is *Society*: the process of understanding the organised and patterned interactions among individuals in a community or network, and of acting according to these interactions. Mind, Self and Society are, thus, based on shared norms and values, and a definition of the situation, also known as 'meaning-giving'. Actions are taken out of habit, because they are rituals expressing connectedness and a shared identity, or because of a sense of joy, mutual trust, loyalty or indebtedness.

When people perceive themselves as part of a social-normative order, actions are not scrutinised on a balance of costs and rewards. Research that relates reciprocity to knowledge production shows that when people consider knowledge a public good, they are motivated to share it with others due to a sense of moral obligation rather than an expectation of return or narrow self-interest (McLure Wasko and Faraj 2000; Smedlund 2008). When knowledge is perceived to be 'owned' by the individual, people are more likely to exchange their knowledge for returns such as reputation and self-esteem.

Applications of theoretical background: exploring our research question

To understand teachers' motives for participation or non-participation in learning networks, we need to include both the perspective of reciprocity based on economic principles, and reciprocity based on membership of a community in our analyses. Because both perspectives appear separately in research, it is our conviction that the theoretical notions developed by Homans and by Mead, despite their being developed many years ago, still serve this purpose. Because social interaction and building relationships are driven by a combination of these

motives, we also need a perspective that allows us to discern the perceived processes of learning in networks. Earlier research showed that the DSL-framework provides a fruitful approach to do justice to the complexity of the processes involved (e.g. Schreurs et al. 2014). Participation in learning networks does not only depend on the balance between costs and rewards, but also on symbolic interactions. We explore this argument, guided by the following research question:

> What is the relationship between teachers' perspectives on learning networks, and their motives for participation in these networks?

We explore this research question by means of the three themes discussed above: teachers' perspectives on learning networks, rational exchange motives and social order motives.

Methods

The data for this paper were collected as part of an explorative study about teachers' intentions for participation in networks (Van den Beemt et al. 2014). The data were collected with the purpose of an extensive exploration from different theoretical perspectives, in this case, learning in networks, social exchange theory and symbolic interactionism.

Research context and participants

The research question is explored through the collection and analyses of interviews with secondary education teachers in the Netherlands. These in-service teachers followed teacher training at a higher professional education level and are required to spend a minimum of 160 h on formalised professional development per year.

For the purpose of this study, homogeneous and convenience sample schemes were used (Collins, Onwuegbuzie, and Jiao 2006). Settings and individuals were chosen based on similar characteristics (homogeneous) and their availability and willingness to participate (convenience). Teachers were chosen as our key informants, because they receive information from a wide variety of colleagues and are, therefore, a very valuable source for evaluating the different variables of the school (García-Morales, Lopez-Martín, and Llamas-Sánchez 2006). The participating teachers came from seven schools, which were members of one school foundation. Although this foundation advocates a shared vision and policy on teacher professional learning, each school can bring this policy into practice in their own way. One of the key foci of this policy is to stimulate teacher professional learning through networked learning within the school foundation. In total, 25 teachers participated in this study. Their ages were in the range of 25 to 65 years. Their teaching experience was in the range of 1 and 40 years, with an average of 12 years.

The teachers were asked, in advance, to indicate how they perceived their participation in learning networks and whether they considered themselves active or passive participants. The respondents reported that they participated – to a greater or lesser extent – in a mixture of online and offline networks, organised both within-school and outside of school. During the interview, what the teachers understood by participation in a network was verified.

Ethical considerations

Ethical approval for the study was governed by Association of Universities in The Netherlands (2014) code of conduct for academic practice, and the code of ethics for research in the social and behavioural sciences involving human participants, issued by the Open University, The Netherlands (2016). Teachers participated voluntarily in the study, and were only interviewed after approval from their school's principal. All participants were presented with written information that outlined the purpose of the study, participant involvement, guarantees of anonymity in any public reporting or publishing and assurances that they could withdraw from the research process at any point. In order to ensure the confidentiality of both schools and teachers, codes were given to the participant teachers to be used in the reported data. These codes were based on pseudonyms for the teachers.

Data collection

The semi-structured interviews consisted of three sections: (1) background information, (2) perspectives on learning networks and (3) personal experience with those networks. Background information contained questions about age, experience as a teacher, subjects to be taught, educational level and highest degree. Under 'Perspectives on learning networks', teachers were asked to define learning networks and to talk, in general, about their views on how participating in those networks contributed to professional development, what investments and facilities were required and how learning in networks related to the quality of teaching and education.

'Personal experience' consisted of questions regarding motives for participation or non-participation in learning networks, current networks, management support and required time, activities, skills, costs and rewards with regard to learning in networks. The interview questions served as probes for the respondents to tell stories about their participation or non-participation in learning networks. All interviews were conducted in-person, audio recorded, and lasted, on average, 60 min. The interviews were held at the respondents' schools and were conducted in Dutch.

Data analyses

The audio recorded data were first transcribed by the interviewers. These transcriptions were condensed by coding and ordering text fragments, following the three parts of the interviews: i.e. background information, perspectives on learning networks, personal experience with those networks. This was followed by a within-case analysis of each teacher's narrative in response to the interview questions (Strauss and Corbin 1998). This analysis consisted of close reading of the text fragments for the themes 'perception of networks', 'rational motives' and 'social order motives', while looking for phrasings such as 'interaction', 'relationship', 'benefit', 'effort', 'results in return', 'joy' and 'common good'. All coded fragments were ordered in a content-analytic summary matrix (Miles, Huberman, and Saldaña 2014) to allow for a cross-case analysis of patterns in the data. This cross-case analysis was guided by relevant notions of learning in networks (i.e. the four dimensions of the DSL-framework), rational exchange theory (costs and rewards of exchange, such as self-efficacy, time and technology), and symbolic interactionism (reciprocity, community, symbolic interactions). These notions

served as lens to allow for a refined and in-depth description of patterns in the data. Cross-case analysis did not result in any additional coding or (sub-)themes. The content-analytic summary matrix was reciprocally checked by the first three authors, which lead to no major inconsistencies in interpretation to be found. The process of cross-case analysis resulted in a second data matrix with summaries of all main data with the intention of data reduction. These accounts allowed us to draw conclusions and verify the data with the theoretical concepts related to our research question (cf. Miles and Huberman 1994). The technique of 'constant comparative analysis' (Glaser and Strauss 1967) was used for both the within case and cross-case analysis in order to continuously compare preliminary interpretations with accounts of the other respondents and the theoretical framework.

Results

Following our research question, we present the findings around the three themes, as discussed in the introduction: (1) perspectives on learning networks, (2) motives for participation perceived as rational exchange, (3) motives for participation perceived as related to social order. Each theme is discussed with reference to the relevant literature (see Introduction). We distinguish between active participants and non-participants in learning networks based on the respondents' data. Quotations from the transcribed and translated data are included to illustrate the themes.

Perspectives on learning networks

In general, teachers in this study described learning networks as a means to be in contact with others for exchanging knowledge, ideas and materials. This reflects the DSL-framework dimension 'Domain and value creation', which describes how learning processes in the network lead to perceived value on both the individual and network level. However, active participating teachers and non-networking teachers differed in their view of the type of activities in networks (i.e. formal or informal) and where the networked learning takes place (Dimension: Practice), their perspective on learning networks in relation to the focus and participants of networks (Dimension: Collective identity) and the extent to which networks were fluid versus static (Dimension: Organisation). These findings are discussed in more detail below.

Practice

Active participating teachers perceived networked learning as a combination of formal and informal activities. For most of them, networked learning is a continuous process that they take seriously as an important part of their job, and that continues after school hours. This contrasts with most non-participating teachers, who perceived networked learning in a way similar to that expressed by one teacher:

> Something formal, which should be facilitated by formal professional development budgets and time.

For most non-networking teachers, participating in a learning network was not seen as something natural or logically part of their job. A few teachers reported their participation in networks as downloading materials from online forums, such as ideas for lessons, rather than contributing to the network by sharing knowledge or materials.

With regard to where the networked learning takes place, both the groups of networking and non-networking teachers reported different opinions. Only a few teachers thought that networked learning mostly takes place in online communities, whereas many others emphasised the need for frequent face-to-face contact in combination with online activities. In addition, several teachers expressed the need for investing in getting to know each other in real life, before online activities can succeed. One of the networking teachers explained:

> First, you meet each other offline and you exchange. During that day, you are already like 'oh you're on Twitter, then I'll start following you' and at the end of the day, you have some new contacts and that makes it easier to approach each other. I like the idea of knowing whom I am dealing with.

Finally, a minority of teachers did not believe in online activities at all for networking.

Domain and value creation

Active networking teachers often related the domain of learning networks immediately to organisational aspects, such as the degree of stability of networks. For instance, they described these networks as more or less static with a fixed group of (core) participants who work together on a regular basis around a certain topic, subject or theme, leading to the co-creation of tangible results. One respondent explained:

> I think that if you take a network of teachers in [subject area] – of which I am part of – that is maybe the smallest kind of network that can exist between schools, there you can really design and improve your own lessons.

Networking teachers also often emphasised the investment in long-term relationships leading to an exchange that goes beyond applicability in the classroom. The networks of teachers with this broad perception reach outside their school and deal with global issues related to the domain (e.g. physics or language) and community at large. An active participating teacher explained:

> Many innovation processes show that networking is necessary to get somewhere; you just cannot do it by yourself.

Non-networking teachers saw, as the focus of networks, the exchange of knowledge, ideas and materials, all immediately related to their subject domain or pedagogical skills. According to this type of teacher, networks are aimed at learning or obtaining things that lead to a quick, hands-on result which is of immediate use. In our data, active networking teachers thus reported a broader view on learning networks compared to their non-networking colleagues.

Collective identity

The majority of the networking teachers described persons active in networks, including themselves, as innovative, progressive and devoted:

> People that dare to look further than the borders of their own classroom, innovative, with a progressive attitude, exploring, daring to try out new things in education.

In addition, another teacher commented:

> In a network, you meet people who want to be part of a network, persons with a drive, with passion, and yes, who think about their profession.

Many active networking teachers described their networks as fluid rather than static with a stable group of contacts. One of the networking teachers mentioned that:

> Networked learning is a dynamic whole, organised around a specific theme, where people participate on a voluntary basis, in their own time.

In these fluid networks, the active networkers often perceived themselves as the link between contacts and sub-networks. This active approach is also expressed in the Dutch word '*netwerken*': the teachers tended to use it as a verb (*networking*) rather than a noun (*networks*).

This perception contrasts with non-networking teachers reporting that learning networks are stable, and mainly consist of colleagues within their school or their school-foundation, or anonymous people online.

Motives for participation: rational costs and rewards

All teachers in our study mentioned time as the first and most important cost for networked learning. Time relates to, for example, preparing meetings, checking usability of materials made by others and preparing own materials to share. The active networking teachers, however, also emphasised that they felt that their participation in networks was time-saving. One of the teachers explained that she invited people from her networks to contribute to activities: for example, giving workshops to her students. Furthermore, active networking teachers also mentioned immaterial costs, such as investing in contacts and relationships, being flexible and being an interesting person for others to network with. The non-networking teachers, on the other hand, often saw time as a reason to refrain from participating in networks:

> There are weeks that I do many overtime hours, which you do not get back working in education. (…) And at a certain point adding new things, yeah, that gets much harder.

Other costs that the non-networking teachers mentioned were more practical – for example, developing ICT skills and investing in materials such as computers.

Both networking and non-networking teachers reported rewards attached to networking, such as gaining new ideas and materials for their lessons, and keeping their knowledge, including subject knowledge, up to date. However, the networking teachers seemed to have a broader view of how networking could be rewarding; they mentioned, for instance, improving their lessons and quality as a teacher, professional development, getting feedback, staying motivated and having fun. From the perspective of the DSL-framework, these teachers could be described as having clear perceptions of the value creation of learning networks.

Teachers active in networking emphasised the importance of the social aspect of their activities, such as the investment in ongoing relationships, meeting new people, being in contact with others and helping other people. They felt that the social aspect made networking rewarding, as was expressed by the teachers by their use of phrases such as 'finding empathy in a network', 'having a good relationship', 'having contacts which are fun' and 'valuing others in the network'. On the question of what participation in networks yields, one teacher answered:

> Priceless, priceless! Some people tell me 'you should get back into for-profit business, it pays much better'. And then I reply, you know, this kind of value cannot be traded for Euros.

Several of the networking teachers thought their participation in out-of-school networks gave them a certain special position within the school; they felt better heard by their

manager, thought they were taken seriously as a discussion partner and considered that they had a say in school policy.

Some of the active participating teachers saw networking as essential even to their career, in terms of getting promotion and being seen in the organisation. Finally, most of the active networking teachers explicitly mentioned rewards for their students that resulted from their activities in networks, such as lessons that were more interesting, and special experiences:

> It is much more interesting for a student to work with a famous artist instead of with a student from another school, isn't it?

Taken together, for active participating teachers, the data suggested that effort they had to put into networking was perceived as subordinate to the profits they gained from it.

Even though non-networking teachers acknowledged the benefits of participating in learning networks, for most of them, there was the perception that the costs still outnumbered the rewards. They attributed this to lack of support from their school leader, no facilitation of formal time, lack of knowledge about possibilities for networking, their school culture not being focused on networking and lack of self-efficacy to share their knowledge and materials with others. One of them said:

> It is not being promoted, not told which networks there are and you do not get any extra hours for it.

Most networking teachers reported similar barriers: however, they perceived these as costs that did not outbalance the rewards of active participation in networks.

Motives for participation: belonging to a social order

Looking at the data from a symbolic interactionism perspective suggested possible explanations for the finding that, although most networking teachers experienced similar barriers to non-networking teachers, they did not refrain from active participation in networks.

The stories of most of the active networkers reflected the foundations of symbolic interactionism, such as mutual trust, shared identity and loyalty. The networking teachers spoke positively of sharing, helping each other, collective and personal growth, inspiration and recognition. In the words of one participant, their stories reflected their belief that they were part of a teacher community, and that learning means networking, and working means:

> 'discovering new things, learning', and for the future, this means 'doing all these things by meeting new people and sharing ideas and knowledge'.

Within the group of active networking teachers, for several respondents networking seemed to be an important part of their professional identity. Networking was completely intertwined with their work as a teacher, blurring the boundaries between school and the outside world. This was not the case for all teachers active in networking. For example, several teachers were active within one particular, rather isolated network and, for them, being part of that particular network seemed important for their professional identity, but not necessarily as important as the activity of networking in itself.

Non-participating teachers often recognised these symbolic benefits, as is reflected in one teacher's description of the benefits as:

> avoiding rusting up, keeping moving, meeting likeminded people, sharing knowledge.

However, the non-participating teachers seemed to interpret symbolic benefits from a rational exchange perspective; for example, they pointed at the absence of a social order and the need to create one 'before participating'.

Further discussion: relationships between perspectives and motives

In order to explore our research question, we investigated the relationship between the teachers' perspectives on learning networks, and their motives for participation or non-participation in those networks. Analysis indicated differences between active participants in learning networks and non-participants for both perspectives and motives. More precisely, we looked for patterns in the four dimensions of the DSL-framework: namely, Practice, Domain and Value Creation, Collective Identity and Organisation, combined with the rational motives of time, technology and self-efficacy, and with symbolic motives such as reciprocity, community and social order.

Some teachers perceived themselves as active participants in learning networks because they download content, such as ideas for lessons, from online forums. In line with existing research on networked learning, they would be identified as passive participants and 'listeners' who were able to benefit from a network without giving anything in return (Wise, Hausknecht, and Zhao 2014). These different perceptions highlight the metaphorical value of 'the network', which evokes different images for different people (Carmichael et al. 2006).

Active networkers tend to have a much broader image of networked learning compared to non-networking teachers. Active networkers speak of networks that reach outside their school and deal with global issues. This perspective on networks reflects high scores on the indicators 'global activities' (Dimension: Practice) and 'sharing knowledge and skills' (Dimension: Domain and value creation) of the DSL-framework (Vrieling, van den Beemt, and de Laat 2016). Active networkers, thus, show an understanding of networks as social structures that enable learning. Existing research also refers to this type of teachers as 'engaged learners' (Pedder and Opfer 2013).

The non-networking teachers see barriers for not engaging in learning networks. This often relates to an expected immediate return on investment, such as finding useful content to use in class. In contrast with active networkers, non-networking teachers do not see networking itself as a reward.

Besides differences between networking and non-networking teachers, differences were also evident *within* these two groups. We suggest that the relation between perspectives and motives related to learning in networks can be helpfully described and characterised by means of four types of teachers: two within the group of networking teachers and two within the group of non-networking teachers. This characterisation is intended as an illustrative way to show the important differences in perceptions between teachers, rather than to stereotype kinds of teacher behaviour. It must also be borne in mind that the results of our study are limited by the number of respondents: findings are offered as a contribution based on the fine-grained analysis of a small sample of teachers, and, as such, cannot be generalised to the population at large.

Specifically, the *Community focused networking teacher* perceives learning networks as reaching beyond the school, with a broad theme or focus, often discussing global issues such as methods or behavioural problems of students. This type of teacher is a 'pure' networker, whose behaviour most clearly reflects symbolic motives. This is a highly motivated

networker, who is no longer focused on exchange, and instead relates his or her identity to the community. This kind of teacher values the contacts, rituals, norms and self-evidence in the community. Time is perceived as both cost and reward ('sharing saves time'); however, time, as a cost will never outbalance the 'joy' of networking. This type of teacher typically invests much time in building networks and networking skills.

The second kind of teacher is also an active networking teacher. However, this type of teacher perceives networks as local and being organised around colleagues in the teacher's own team or around one specific theme. This teacher regards networking as part of her or his job and has enough trust in her or his colleagues to see time and self-efficacy no longer as barriers for participation in networks. Thus, this type of *Locally focused networking teacher* resembles the first type of teacher in thinking of learning and working as a self-evident part of networking with colleagues, and of networking as a self-evident part of belonging to a community of colleagues. However, this kind of teacher combines a self-evident attitude with a rational approach, considering the rewards to outbalance the costs of investing in relationships with others.

Third, the teacher who we characterise as the *Not-yet-networking teacher* is inclined to share knowledge and products with the network either within or outside school. However, this teacher refrains from doing so because of feelings of insecurity or issues with the privacy of online networks. If these barriers can be overcome, and if the circumstances are right, this teacher might consider active participation in networks. He or she may, perhaps, then become a locally focused networking teacher. Networking is for this type of teacher may be conceptualised as a rational task rather than part of his or her professional identity.

Finally, the *Non-networking teacher* is focused on immediate benefit of the network, such as content for lessons. For this type of teacher, time is a cost that is not facilitated for by others (e.g. the school-management). Furthermore, for this teacher the rewards do not outbalance the costs. In contrast to the *Not-yet-networking teacher*, the *Non-networking teacher* may externalise causes of her or his non-participation; others, such as the school or the school board may be the reason. Both the *Not-yet-networking teacher* and the *Non-networking teacher* lack a feeling of postponed reciprocity and of being connected to the community of secondary education teachers in general. The *Non-networking teacher* does not perceive networking as part of his or her profession nor of his or her professional identity.

Limitations

As mentioned earlier, the selection method and the number of respondents do not allow a generalisation of the results to the population at large. The selection method may have caused us to include more teachers who had a clear idea of, and vision of networked learning. Hence, a more extensive follow-up study might also contribute to a better understanding of the complexities in teachers' motives for learning in networks.

Implications and conclusions

It is hoped that these characteristic descriptions and the behaviours they represent may resonate with the experiences of teachers in similar circumstances and be helpful to school leaders who seek to understand the professional learning practices of teachers. If teachers do not feel part of a professional community, their engagement in networking activities is

not self-evident because they will look for a cost-rewards balance. The four descriptions connect with other studies that show patterns in the relationships between, among others, self-efficacy, open-minded and explorative attitudes and high innovation mindedness of teachers (Thurlings, Evers, and Vermeulen 2014) or ICT-mindedness (van den Beemt and Diepstraten 2016).

It appears that the active networking teachers value, above all, the informal aspect of learning in networks (Carmichael et al. 2006), while the others prefer a more formal approach. Starting with a more formal approach could be the key for stimulating non-networking teachers to engage in networking. This is in line with research that shows that in order for networks to become learning networks, clear goals, substantive management support and the organisation of 'formal' meetings to 'sponsor' teachers are needed (Büchel and Raub 2002). The four descriptions of teachers and their characteristics indicate that each type has its own needs and preferred approaches for networking.

However, below this observation may be a deeper reality that shows that teachers who are networkers by nature and who like to learn in collaboration with others, will easily pick up learning in networks. The opposite is not necessarily true: whether people who like to learn on their own will participate in learning networks depends, for instance, on the school culture, management support and self-efficacy. This deeper reality is an expression of the complexity of motivations and perceptions that cannot be easily simplified. To shed light on this complexity, future research should include aspects, such as perceptions about privacy, group-development, and the influence of organisational culture and hierarchy on considerations about networks. Furthermore, our study shows a diversity of perceptions of reciprocity among teachers. In networked learning literature, reciprocity is considered a prerequisite for value creation (see for example Baker and Bulkley 2014; Schreurs et al. 2014). However, non-networking teachers appeared to look for immediate rewards, which does not go together with long-term investment required for reciprocity and community feeling.

In order to stimulate these factors, a formal start for professional communities may be fruitful. Some of our respondents were seeking an environment, created and supported by management, where teachers can approach each other with questions and to share knowledge and experience, preferably outside their own subject or team. This might lead to people feeling part of a social normative order, where networking is self-evident and no longer related to rational considerations of costs and rewards only. It is in such a situation that people become aware of the sources and the value of that community, which simultaneously increases feelings of agency of these teachers. It is suggested that, as long as teachers talk about networked learning in terms of a balance between costs and rewards, there is a need to develop a sense of being part of a community, and a sense of how, for all teachers, their learning, work and future in a community can become meaningful through interactions with others.

Disclosure statement

No potential conflict of interest was reported by the authors.

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