DEVELOPING PROFESSIONAL LEARNING COMMUNITIES

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INTRODUCTION

There is a growing consensus about the pivotal role of the team of professionals in the school for sustainable school development. World-wide economic and cultural changes demand high levels of quality of education and of teaching. Improved student learning is dependent upon teacher learning. In the past decade we have experienced the limits of formal, externally driven, professional development and school innovation. Sustained change in the day-to-day practice of schools cannot be imposed. Sustained change asks for the individual and collective learning processes of teachers, investigating and improving their own practice. Professional learning communities offer a context for these learning processes and for the building of capacity in the school...

Although the idea of a professional learning community is popular, there are few schools who are really a professional learning community. Moreover, we do not know very much about how to develop schools as professional learning communities. The topic of the development of professional learning communities is at the centre of this paper. Using quantitative and especially qualitative research data, we will focus on questions regarding the development of a professional learning community.

In the first part of this paper we outline the concept of professional learning communities and raise some questions about it. Next we briefly describe the methods we use to gather data. The bulk of this paper describes our main findings.

PROFESSIONAL LEARNING COMMUNITY…

The last decade there has been increased interest in so-called "professional learning communities". This leads to various descriptions of a professional learning community. Hord (1997) for example, described a professional learning community as *a community of permanent research and improvement*. Louis & Marks (1998) regard a professional community as a school-organisational structure with an intellectually-oriented culture.

The concept *professional learning community* combines three important notions (Toole & Louis, 2002; Bredeson 2003, Bolam *et al.*, 2005; Stoll & Louis, 2007; Hord & Hirsch, 2008):
- *professionalism* that is client-oriented and knowledge based;
- *learning* at all levels in the school (individual, team, school) through critical self-reflection and inquiry with a view to the improvement of the professionalism and
- *community* as the quality of relations between the learning professionals making learning and improvement possible.

These three concepts define the Who, What and How of a professional learning community.

The characteristics of professional learning communities have, moreover, been described in various ways (e.g. Hord, 1997, 2004b; DuFour & Eaker, 1998; DuFour, Eaker & DuFour, 2005; Louis & Marks, 1998; Mitchell & Sackney, 2000; Bryrk & Schneider 2002; Hipp & Huffman, 2003; Mulford, Silins & Leithwood, 2004; Bolam *et al.*, 2005; O'Hair *et al.*, 2005; Sackney, Walker, Mitchell & Duncan, 2005; Hord & Hirsch, 2008).

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… AND SOME QUESTIONS ABOUT IT

Although professional learning communities look promising, the concept seems to have been poorly elaborated to date (Furman-Brown, 1999; Imants, 2000; DuFour, DuFour & Eaker, 2009). Illustrative is the use of a great deal of different concepts such as the professional learning community (Hord, 1997); *professional community* (Louis, Kruse & Associates, 1995); *school-based teacher learning community* (McLaughlin & Talbert, 2006); *learning community* (Mitchell & Sackney, 2000) and *school learning community* (Sackney, Walker, Mitchell & Duncan, 2005). Furthermore the concepts are described from different perspectives and with partly different core notions. For example, some (e.g. Marks & Louis, 1999) argue that professional learning communities are a vehicle for collective learning, whilst others (e.g. Scribner *et al.*, 1999) imply that collective learning precede professional learning communities. More work has to be done in order to elucidate the concept of a professional learning community.

Despite this conceptual confusion, the concept of professional learning communities is often enthusiastically welcomed by school leaders and their team members. But we still know little about the development of professional learning communities. One striking question regards the idea of development. That schools simply are or are not professional learning communities, is too simplistic a dichotomy. In the literature concerning professional learning communities, the hypothesis is found that schools should develop into professional learning communities in stages. Eaker, DuFour, & DuFour (2002) view the development of a professional community along four stages of a continuum: pre-initiation, initiation, developing and sustaining. Hipp (2005) describes a *Professional Learning Community Development Rubric (PLCDR).* This rubric describes different dimensions of a professional community according to four phases. Three of these phases are adopted from Fullan's theory about innovation (Fullan, 2001): initiation, implementation and institutionalisation. A first phase of pre-initiation was added. In practice the PLCDR serves as a frame through which staff informally assess their school as a professional learning community. Also Bolam *et al.* (2005) hypothesised that a school might be on one of three stages as a professional learning community: starter, developer and mature.
It is attractive to suppose that the features of a school as a professional learning community can all be located in one of the developmental stages mentioned. Bolam *et al.* (2005), however, show that there are exceptions to this one-dimensional model with three development stages. And also Hipp, Huffman, Pankake & Oliver (2008) argue that the development of a professional learning community seems so complex that to be able to describe discrete stages is unlikely. Some dimensions of a professional learning community are far more difficult to locate in a particular stage than others. Moreover, schools do not always develop. And schools can slide back into previous stages. Consequently, an important question is how to understand the development of a professional learning community.

Professional learning communities seem, at the moment, to be an idea rather than a reality. Although there are some promising results, the concept of professional learning communities is a metaphor – admittedly one capable of providing new impulses to educational innovation – rather than a concretely demonstrable organisational constellation. So another group of striking questions looks at the way in which a school can develop as a professional learning community. Which interventions lead to a sustainable school development where the professionals can work and learn together in order to improve the learning of the pupils? What is the role of the school leader? For years, research and literature has stressed the importance of leadership for the results on student achievement (e.g. Leithwood, Louis, Anderson & Wahlstrom, 2004). Even so, literature about the development of professional learning communities shows that the school leader has a crucial role to play (e.g. DuFour & Eaker, 1998; Mitchell & Sackney, 2000; Huffman & Hipp, 2003; Hord, 2004a; Mulford, Silins & Leithwood, 2004). The school leader is vital in the development of a professional learning community. But the empirical base of this claim is rather weak and it remains unclear what school leaders are doing towards building a professional learning community.

So the aim of this paper is to contribute to three questions regarding professional learning communities

1. How can the development of schools into PLC's be described?
2. What interventions contribute to the realisation of a PLC?
3. What is the role of the school leader in this process?

THEORETICAL FRAMEWORK

Based on the distinction of three basic capacities (Spillane & Thomson, 1997; Mitchell & Sackney, 2000), we distinguish in a professional learning communitiy:

- *Personal capacity* comprises the individuals' ability to construct, reconstruct (revise, adjust) and to apply knowledge in an active and reflective manner, making use of up-to-date scholarly and practical knowledge.
- *Interpersonal capacity* comprises the ability of a group or collective to (re)construct and to apply knowledge. This presupposes a shared vision of learning and of the role of the teacher. It also implies shared practices among the teachers.
- *Organisational capacity* consists of cultural and structural conditions supporting the development of the personal and interpersonal capacities. Supportive, stimulating and shared leadership is an important aspect of this organisational capacity.

Each capacity can be subdivided into a number of dimensions. Table 1 shows the various dimensions of a professional learning community.

Table 1: Dimensions of a professional learning community

Capacity	Dimensions
Personal capacity	1. (re)constructing knowledge actively, reflectively and critically 2. currency
Interpersonal capacity	3. shared values and a common vision of learning and of the teacher's role 4. collective learning and shared practices
Organisational capacity	5. supportive conditions: resources, structures and systems 6. supportive conditions: culture 7. supportive, stimulating and shared leadership

METHOD

The context

The research we report on in this paper was undertaken in the context of the so-called COPL project (**C**apaciteits**o**ntwikkeling in **P**rofessionele **L**eergemeenschappen - *Capacity Development in Professional Learning Communities*)[2]. The project lasted for 2.5 years and was completed mid 2008. The project combined development and research. Four elementary schools[3] were supported in their development into professional learning communities. All the schools are Roman Catholic schools in the south of The Netherlands. The schools are all located in small village centres in urbanised areas in the countryside. In terms of size they vary (from 169 pupils, school D, to 265, school A) at the beginning of the project[4]. Most school leaders have limited experience in their current positions, most of them one year; two of them three years. The support of the schools consists of seminars for the group of schools' representatives (school leader and one or two teachers) and consultations at each school.

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[2] The COPL-project was a project of the Knowledge Centre for School development and School management of Fontys University of Applied Sciences. In Dutch the acronym *COPL* can be associated with "koppel" meaning "link", a "set of people" and also a mechanism for the conveyance of force.
[3] The four schools are designate by the letters A to D.
[4] Elementary schools in The Netherlands have on average around 220 pupils.

Research methods

This research is intended to establish the degree to which the schools are actually developing into professional learning communities and to find out what roles the school management and other actors, factors and interventions play in the resulting change processes.

In order to answer the research questions, we undertake a case study in four schools.
Quantitative data were collected by a questionnaire, developed on the base of a study of literature on professional learning communities (the so called COPL-questionnaire)[5]. The questionnaire was filled in twice by the professionals of the four schools: at the beginning of the project (February 2006) and 1.5 years later (June 2007). Furthermore, during the project the questionnaire was also completed by the team members of other schools. In the final sample, 1,224 professionals from 95 schools were included.

Qualitative data were collected by many semi-structured interviews with the school leaders and teachers in the schools. In these interviews, the informants were asked for their opinion concerning the development of their school as a professional learning community and about the role of the school management and of other actors and factors in the realisation of these characteristics at the school. Furthermore, at the end of the project we conducted a semi-structured group interview with teachers – one from each of the four schools - who participated in the seminars. In this interview we asked for their opinion regarding the seminars and the consultations at the schools. The guidelines for all the interviews were developed on the basis of the literature study. We also gathered information through the study of documents and observations in the schools.

Full transcriptions were made of the interviews and given to the informants as feedback. The interviews were subsequently encoded and then the school was described in terms of the various dimensions of a professional learning community on the basis of the encoded text. Patterns and possible correlations were also described. Finally some conclusions were formulated as to the extent to which the school concerned is a professional learning community and who and what has contributed to this. These four within-case analyses were used for a comparative analysis between the schools (cross-case analysis) (Miles & Huberman, 1994; Swanborn, 2003). The schools received systematic feedback at different moments concerning the results.

In the section below we will deal further with the analysis of the data.

Some precautions were taken in order to limit any credibility problems relevant to the case studies (Swanborn, 2003):
- the introduction of subunits, so that we can speak of an embedded design. All the team members of the schools concerned were invited to complete the questionnaire. At the same time a number of team members of the schools were interviewed;
- different methods of data gathering: document studies, observations, questionnaires and interviews;
- involving different researchers, especially in the encoding and the interpretation of the data. The idea is to create the best possible intersubjective agreement;
- comparative testing of the interpretations found with the assessment of those involved in the school.

Analysis

We analyse the data form different points of view, related to the research questions:
The idea of development of professional learning communities. In the analyses of the schools we investigate how to account for the development of a school as a professional learning community.

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[5] We are currently working on testing of the conceptual structure underlying the questionnaire (Sleegers, De Brok,, Verbiest & Moolenaar- in preparation). The tentative results of the test of the conceptual structure of the questionnaire support the structure of three capacities with their different scales.

Interventions. Following Hall and Hord (2006) we define an intervention as a planned action or an unplanned event that influences individuals (either positively or negatively) in the process of change.
- *Source.* Making a distinction in internal or external interventions, we can distinguish between four types of interventions (see table 2).

Table 2: Sources of interventions

	Event	**Action**
Internal	internal event	internal action
External	external event	external action

- *Focus.* We investigate if the interventions are focused on the development of the three capacities of a professional learning community: personal, interpersonal and organisational capacity.
- *Effectiveness.* Do the interventions contribute to the development of the three capacities of a professional learning community?
- *Strategies.* Interventions can also be characterised by the underlying strategy. We use a well-known distinction in three strategies (Chin & Benne, 1969). In the *power-coercive strategy*, change is based on the application of power in some form. In the *empirical-rational strategy* one assumes that a person or group is rational and moved by self-interest. Consequently, he or they will adopt a proposed change if it can be rationally justified and if it can be shown that he or they will gain by the change. And the *normative-re-educative strategy* supposes that change will occur only as the persons involved are brought to change their normative orientation to old patterns and develop commitments to new ones. This involves changes in attitudes, values, skills and significant relationships.

Role of the school leader. Finally we analyse the role of the school leader in the development of a professional learning community. We subdivide the role of the school leader in the development of professional learning communities into three sub roles: those of culture builder, teacher and architect. As a *culture builder* the school leader contributes to the propagation and reinforcement of certain values, convictions and standards constituting a commonly shared professional learning culture. As an *educator* the school leader stimulates the intensity and quality of the individual and collective learning processes, in order that deep learning can take place, so that there is the possibility of evaluating and reconsidering the mental models concerning learning and the support of this learning. And as an *architect* the school leader builds up resources, structures and systems in the school conducive to the development of personal and interpersonal capacities. Each concept was operationalized in order to measure the role of the school leader. For each concept we define ten characteristics. Below one can find some examples.
Culture builder:
- emphasizing professional norms and expectations in the daily talks owith the teachers;
- stimulating and valuing an attitude of collective learning of teachers.
Educator:
- analysing with the staff test results of pupils;
- holding a dialog with teachers about the teaching in the class room.
Architect:
- organising collective learning in school (like intervision and collegial consultation);
- making available for teachers sources for professional leanring (literature, courses..).

In order to determine the role of the school leader as culture builder, educator and architect, we counted how many characteristics of each role we found in the data.

MAIN FINDINGS

In the analyses of the quantitative and qualitative data of the four schools we paid attention to the idea of development of professional learning communities; the interventions (source, focus, effectiveness and strategies) and to the role of the school leader. In the context of this paper, we can only summarise the main findings. We follow the research questions here. Before we give an indication of the development of the schools involved in the case study.

The development of the schools involved in the case study

As said before, we collect quantitative data regarding the development of the schools as professional learning community. Staff of 91 schools, not involved in the case study, also filled in the questionnaire. So we are able to determine for each school the rank of different dimensions of a professional learning community. Of the four schools, participating in the case study, we have two scores on the questionnaire: the measurement of each dimension of a professional learning community at the beginning and at the end of the project. We rank each score on a dimension for all 91 schools and compute the average rank of all dimensions for each school. These average ranks (first and the second measurement) are shown in figure 1 (highest rank = 1).

Figure 1: Average ranking on the dimensions of a professional learmning community of the 4 schools in the case study (highest rank = 1).
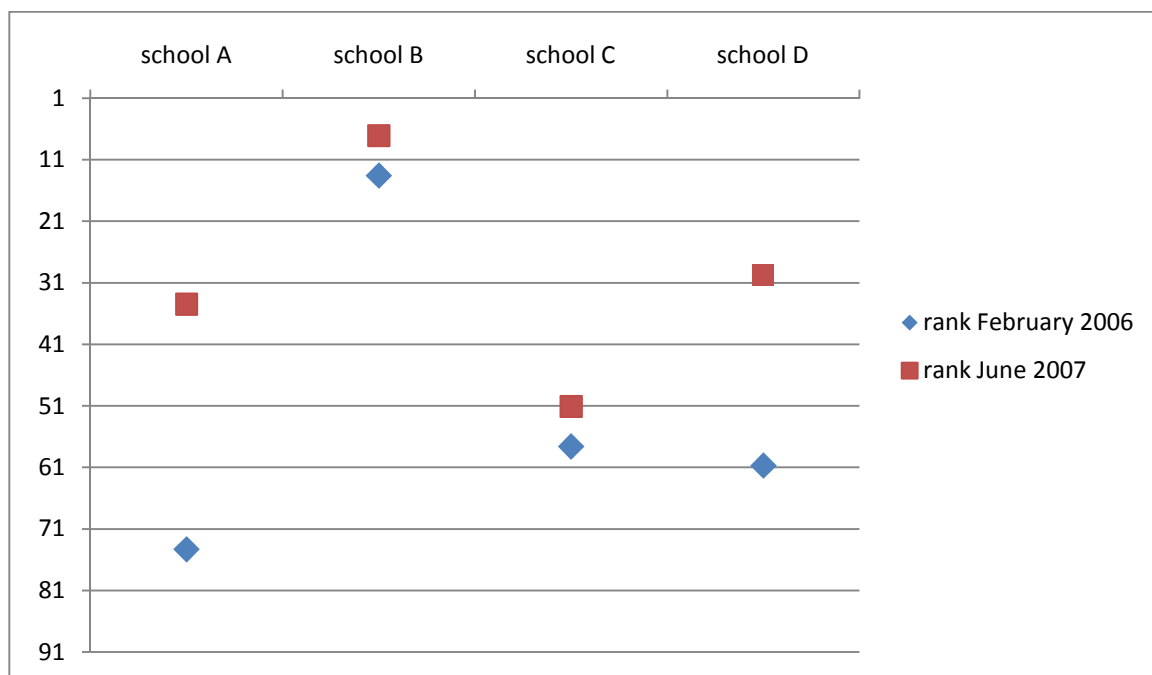
School A shows in the second measurement a significant (p< 0,05) improvement on 6 of the 7 dimensions of a professional learning community. The average ranking rices from 74,3 to 34,5. School B shows at both measurements relative high scores. The average ranking rices from 13,6 to 7,1. School C shows an significant improvement on three dimensions; the average ranking rices slightly from 57,6 to 51, 1. School D shows in the second measurement a significant improvement on 6 of the 7 dimensions of a professional learning community. The average ranking rices from 60,7 to 29,7.

Development of a professional learning community

As previously indicated, the hypothesis is made that schools should develop into professional learning communities in stages. At the same time, there are doubts about this view on devel-

opment of a professional learning community. We found that in some schools the development on the different dimensions of a professional learning community was not always equal. In school A the development on dimension *culture* falls short of the development of the other dimensions. In this school, all dimensions except the dimensions *culture* show a significant progress during the COPL project. The dimension *culture* shows (an insignificant) decline. The results of the interviews point in the same direction. And from both the quantitative and qualitative data from school D we can conclude that the development on the dimension *(re)constructing knowledge* falls short of the development of other dimensions. In school C a progress (of which three are significant) can be found on five dimensions of a professional learning community and (an insignificant) decline on two dimensions. So we found some contra-evidence for the hypothesis that schools should develop into professional learning communities in stages.

It is possible to characterise the development of a professional learning community in another way. We found quantitative and qualitative developments in the schools we investigated. This development of a school as a professional learning community can be described through three concepts:

- *Broadening of the capacities of a professional learning community*: an increase of the number of people involved who learn and act according to the expectations of professionals in a professional learning community. Broadening means, for example, that more people than before reflect on their work, that more people keep up to date with professional literature, that more people attend courses, that more people realise the vision of the school in daily practice, that more people share knowledge, learn together and cooperate, that more people discuss results of pupils with each other. Also that there are more possibilities than before for professional development and that more people participate in the creating of the policy in the school and take up leadership responsibilities.
- *Deepening of the capacities of a professional learning community*: an increase of the quality of the learning and acting of the people involved and/or an increase of the quality of the organisational conditions for the development of the personal and interpersonal capacity. Deepening means, for example, that one sees teaching more and more as a collective effort and a collective responsibility instead of an individual effort and an individual responsibility. It also means increasingly connecting the learning and the results of the pupils through the pedagogical and didactical approaches of the teachers and a stronger drive to improve this learning and the results of the pupils. It means furthermore a deep individual and collective learning of the professionals themselves: investigating the implicit mental models, underlying the pedagogical and didactical approaches of the teachers. It means the organisation of the meetings of the professionals, so that there are ample opportunities for more in-depth learning. And deepening means also the development of supportive, participative and stimulating leadership.
- *Anchoring of the capacities of a professional learning community*: embedding of the individual and collective learning and actions and the conditions for the learning and the actions in the policy of the school. Anchoring means, for example, that the professional development of the teacher is connected to and directed at the policy of the school and the main developments within the school. It means that the vision leads the decisions in the school regarding teaching and learning. It means that forms of collective learning, such as intervision and class observation and consultation between colleagues, belong to the routines in the school. It means frequent and systematic analyses of the results of the pupils in relation to the pedagogical and didactical approaches of the teachers. Anchoring also means that staff members participate in a structured way in the development of the policy of the school and have access to all relevant information.

With these three concepts it is possible to describe the developments of the four schools as professional learning communities. And it is also possible to differentiate between the schools, in terms of the extent of broadening, deepening and anchoring of the capacities of a professional learning community. For example, in school B, the capacities are far more anchored in the school than in school C. In school B, one can see a school leader who system-

atically stimulates reflection and links the reflections of the teachers to their personal development plans; one sees collective learning as a conscious way of working in cases of innovations; one sees a systematic reflection on the collective learning processes of the team by a "guard" (a teacher who has the task to watch over these learning processes) and one can find an explicit code of behaviour, expressing, among other things, the notion that teachers can give feedback to each other. In school C, however, the only trace of anchoring the capacities is the re-organisation of the process of teaching so that teachers synchronise the content and the testing of their teaching and the way they handle pupils' problems. But big differences remain in the pedagogical and didactical approaches between the teachers.

This view on the development of a professional learning community has also practical implications. Using the three concepts one can determine to what extent one can speak of broadening, deepening and anchoring in a particular school. And the three concepts offer also some indications for the further development of the school as a professional learning community. The continued development of a school as a professional learning community can, for example, mean that a school leader creates more opportunities for learning, coaches the learning processes of the staff so that one can achieve more in-depth learning and embed the learning opportunities and the coaching within the school's policy. We developed a so called *professional learning community-matrix*, based on the three concepts of broadening, deepening and anchoring, to be used as a diagnostic instrument.

Interventions
In order to elucidate which interventions contribute to developing a professional learning community, we analysed the interventions from different angles: source, focus, effectiveness and strategy.

Sources
Most of the interventions we found in each of the four schools are internal actions, mainly performed by the school leader. In two schools a second person (i.e. the deputy head teacher) also plays an important role. External actions are less frequent but can have a great deal of influence (for example the appointment of a new school leader or the participation in the COPL-project). This analyses show the important role of the school leader in developing a professional learning community.

Focus
It is not easy to determine the focus of an intervention because it is not always clear at the outset what the intentions of a school leader are in intervening in the school. And an intervention can influence more than one capacity at the same time. On the basis of the interviews, we can, however, outline a common pattern. Almost every intervention is focused on developing one or more capacities. And in each school we see one or more interventions for the development of a capacity. In the schools A, B and D there is an emphasis on interventions aiming at the development of the organisational capacity. In school C the emphasis of the interventions is on the interpersonal development (according to the school leader, but not experienced as such by the staff). In all cases the focus on developing the school as a professional learning community is intentional. The school leaders use the concept of a professional learning community as a framework to select interventions.

Effects
Do the interventions contribute to the development of the school as a professional learning community?

In the three schools, most developed as a professional learning community (A, B and D), we found some more or less similar interventions, experienced as effective by the respondents. To start with, *professional development*, both inside as well as outside the school plays an important role.

Furthermore, a *re-organisation of the primary process* (instruction, grouping of the pupils, didactical approach...) brings to light a great deal of influence on the development of the capacities of a professional learning community. Such reorganisation of the primary process stimulates the individual and collective reflection on the teaching process. This effect can be strengthened when teachers are dependent on each other in the realisation of the teaching process.

Figure 2: Four forms of collaboration (Little, 1990)

Story-telling Scanning	Aid and assistance	Sharing	Joint work

independency   interdependency
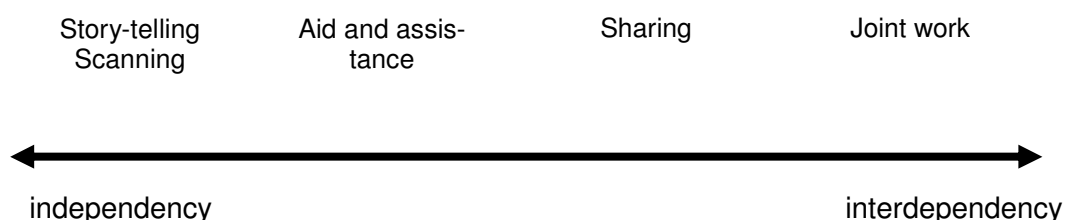
Almost 20 years ago, Little (1990) made a distinction in different forms of collegiality and collaboration. She distinguishes 'weak' and 'strong' ties among colleagues and examines the degree to which colleagues constitute a relatively weak or strong source of influence on teachers' practice or commitments'. It results in a four-fold typology of collaboration: story-telling and scanning for ideas, aid and assistance, sharing, and joint work (figure 2).

These four types differ in the extent of (in)dependency. Whereas story-telling and scanning of ideas leave the teachers involved rather independent, in joint work teachers are interdependent. In this last form of collaboration, the quality of the own work is dependent on the quality of the work of the other. Most opportunities for learning and improvement can be found in joint work because one is obliged to be absorbed in the ideas of the colleague and to develop together some shared ideas. In the three schools we found illustrations of re-organisation of the primary process, involving creating interdependency between teachers., In school A, for example, the school leader re-organised some parts of the teaching in traditional classes into teaching in so called units. Pupils of three classes were grouped together and the teaching in these units was done by three or four teachers together. This re-organisation greatly stimulates the individual and collective reflection of the teachers on what they are doing. But as we will see, creating interdependency is not enough.

In these three schools, we found also that school leaders *connect the process of developing the school as a professional learning community* with *running innovations in the school.* The development of the capacities does not happen in a vacuum. This development is connected with the innovation of the teaching process, the introduction of new handbooks and so on.

Besides the re-organisation of the primary process, the *re-organisation of the structures for professional development and for meetings* is also of influence on the development of the capacities. In the three schools studied, the management creates more opportunities for professional development, collective learning and meetings. And the agenda for the meetings of the staff deals increasingly with educational (rather than organisational) subjects.

Leadership also effects the development of the capacities of a professional learning community. In the three schools, the leadership is experienced as stimulating, interested in the team members and having *expert knowledge* in educational matters. Leadership also plays an important role in the *development of a professional culture.* And leadership support *participation* of the staff in developing the policy of the school. Furthermore, as previously mentioned, leadership is aim*ed consciously at the development of a school as a professional learning community.*

In school C, we found some similarities but also some important differences. In school C, there is also professional development of teachers, but this is less structured and not connected to the vision and the developments of the school. The school leader talks about vision, reflection and team teaching, but less structured and only loosely connected to the agenda of the school. There is a re-organisation of the primary process, compelled by necessity, which created some interdependence between teachers. And there is more evidence of staff working together than before. But these collective activities are aimed mainly at the practical solution to problems. And, most importantly, the perception of the school leader by the staff is very different from that of the other schools. Staff members experience the school leader as more formal, with an emphasis on rules and more distant to the staff. There is a feeling of a lack of follow-up of organisational decisions. And there is some hesitance regarding the head teacher's expertise as an educator and his competencies in leading the processes of the staff's collective learning. Due to the distance between the school leader and teachers, they feel a lack of trust and, as a consequence, a very weak basis for the further development of the school as a professional learning community.

In theories about the professional learning communities, trust is seen as a very important condition for the development of a professional learning community (Bryk & Schneider, 2002; Bryk, Bender Sebring, Allensworth, Luppescu, & Easton, 2010). Organisational changes – such as the development of a professional learning community – entail major risks for the participants, for example opening the classroom and showing colleagues how one act as a teacher. The presence of trust, among other things, moderates the sense of uncertainty and vulnerability of the professionals involved.

From the interviews it also became clear that collaboration, even in the form of joint work, is not sufficient for processes of in-depth collective learning. Joint work can be an important stimulus for in-depth learning but it also asks for interventions, aimed at the improvement of the learning processes. Examples of these interventions we found, are coaching the processes of the individual and collective learning by the school leader or a senior teacher, focussing the school development plans on the vision of the school and the appointment of "guards" who evaluate meetings from the points of view of the quality of collective learning. But the effectiveness of these interventions depends on the base of trust between teachers and the person who intervenes.
According to Little & Horn (2007), deep, sustained conversations between teachers about matters of teaching and learning remain uncommon. When teachers expressed problems a typical reaction of colleagues is a normalising response. The problem is defined as a normal, expected part of classroom work and teacher experience, for example: 'it happens to all of us'. For profound learning it is necessary that the dialogue between teachers does more than simply report on or point to problems of practice. The dialogue must provide for specific means for identifying, elaborating and re-conceptualising the problems that teachers encounter and for exposing or generating principles of practice. We found that that the three school leaders (and sometimes also one of their colleagues) are stimulating this kind of dialogue between teachers.

We also noticed that the effectiveness of interventions is often the result of a complex combination of different actions and events. The development of the personal capacity in school D, for example, was influenced in a positive way by professional development. This professional development was stimulated by internal and external interventions such as the choice of a new book for pupils or critical remarks of the inspectorate. But also the organisation of sub teams with the task of developing school improvement plans led to the need to follow some courses. This professional development was also supported by the creation of more space and time by the school leader and by his intellectual stimulation of the teachers.

This complex combination of different actions and events leads to the assumption that the effectiveness of interventions can be influenced in a positive way if more interventions are

used at the same time aiming at the simultaneous development of the personal, interpersonal and organisational capacities of a professional learning community.

Strategy
As previously indicated, we made a distinction in three strategies (the *power-coercive strategy,* the *empirical-rational strategy* and the *normative-re-educative strategy*). We discovered a rather similar pattern in the four schools in the project. We found in all schools none or only very few examples of the power-coercive strategy. About one third of the interventions fit into the empirical-rational strategy and about two thirds of the interventions fit into the normative-re-educative strategy. This emphasis on the normative-re-educative strategy complies with the idea of a professional learning community. In a professional learning community one stresses learning. According to social constructivist ideas on learning, one cannot learn on command. The school leader is a coach rather than an instructor and explainer, helping teachers in the identification, elaboration and re-conceptualisation of the problems they encounter. Another explanation for the prevalence of the normative-re-educative strategy, which coincides with the former one, rests on the dominant professional and organisational culture in schools. In any case in The Netherlands, there is a rather egalitarian culture in schools. In this culture teachers are seen as professionals who know how to act in a professional way. In such a culture one gives preference to intervention strategies, emphasising motivating, stimulating and coaching people and giving room to develop themselves.

The role of the school leader
As mentioned above, we make a distinction in three roles (culture builder, educator and architect).
In the three schools, most developed as a professional learning community (A, B and D), we see a rather similar pattern. All school leaders fulfil the three roles to a large degree.(i.e. seven or more characteristics per role).
Some school leaders emphasise a certain rol (school leader B emphasises the role of architect, school leader D the role of educator) but that does not mean that they neglect the other roles.
The school leader of school C restrict himself mostly to the role of architect (five characteristics). He facilitates with money and time some learning processes of individual teachers and staff. For the role of culture builder we found only two characteristics and none for the role of educator.
These findings corresponds with other findings about the role of effective school leaders. Leithwood et *al.* (2006) found four broad categories of effective leadership practices: setting directions, developing people, managing the instructional programme and redesigning the organization. The three roles of a school leader overlap for a large part with these four practices. And Marks & Printy (2003) points to transformational leadership (overlapping with the role of culture builder) as a condition for instructional leadership (overlapping with the role of educator). So there are some indications that a professional learning community asks for a school leader being a transformational and an instructional leader.

CONCLUSION.
This study contributes to largely unanswered questions about the process of development of school as a PLC, the effective interventions and the role of the school leader.
Regading the question how to describe the development of schools into professional leatning communities, we we found some contra-evidence for the hypothesis that schools should develop into professional learning communities in stages. But it is possible to describe the development of schools as professional learning communities with concepts: broadening, deepening and anchoring. And it is also possible to differentiate between the schools, in terms of the extent of broadening, deepening and anchoring of the capacities of a professional learning community.
We found a lot of interventions contributing to the development of schools as professional learning communities, for example:

- stimulating and organising professional development of teachers;
- re-organisation of the primary process;
- creating interdependence between teachers in the primary process;
- coaching teachers' learning processes;
- connecting capacity building with the innovation agenda of the school;
- re-organisation of the structures for professional development and meetings, aiming at collective learning;
- supporting staff in instructional matters on the basis of personal expertise;
- stimulating and modelling a professional culture;
- stimulating and organising participative leadership.

We also found some conditions for these interventions:
- consciously performing these interventions with a focus on the development of the school as a professional learning community;
- performing these interventions on a basis of trust between school leader and staff;
- using several interventions at the same time, aiming at the simultaneous and equal development of the personal, interpersonal and organisational capacities.

The last question concerns the role of the school leader. We found that school leaders of schools, developing as a professional learning community, fulfill three roles: cullture builder, educator and architect.

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