



## Guided work-based learning: Sharing practical teaching knowledge with student teachers

Corinne van Velzen<sup>a,\*</sup>, Monique Volman<sup>b</sup>, Mieke Brekelmans<sup>c</sup>, Simone White<sup>d</sup>

<sup>a</sup> CETAR, VU University Amsterdam, The Netherlands

<sup>b</sup> Universiteit van Amsterdam, The Netherlands

<sup>c</sup> Utrecht University, The Netherlands

<sup>d</sup> Monash University, Australia

### ARTICLE INFO

#### Article history:

Received 9 March 2011

Received in revised form

18 August 2011

Accepted 27 September 2011

#### Keywords:

School-based teacher education

Guided work-based learning

Collaborative teaching

Sharing practical knowledge

Student teachers' learning needs

### ABSTRACT

Building quality work-based learning opportunities for student teachers is a challenge for schools in school–university partnerships. This study focused on the guidance of student teachers by means of a mentoring approach aimed at sharing practical knowledge, with student teachers' learning needs as an emphasis. The approach was built on collaborative lesson planning, enactment, and evaluation.

The study followed three triads (student teacher, mentor, school-based teacher educator) and examined participants' appreciation of the effectiveness of the approach and their perception of relevant conditions. The approach was considered effective: deeper conversations appeared and new issues emerged earlier than in regular mentoring conversations.

© 2011 Elsevier Ltd. All rights reserved.

On an international basis, the preparation of teachers relies increasingly on a partnership model between schools, universities and teacher education institutes (TEIs).<sup>1</sup> These partnerships, which have been built since the early 1980's, are seen in many countries as an answer to dissatisfaction with the disconnect between teacher education (theory) and actual school teaching (practice) (see for instance: Edwards, Tsui, & Stimpson, 2009; Hagger & McIntyre 2006; Zeichner, 2010).

The ways in which these partnerships are formed and implemented differ according to each national educational system and policy. Maandag, Deinum, Hofman, and Buitink (2007) compared school-linked models for teacher education in England, France, Germany, the Netherlands and Sweden. Differences were found not only in matters related to integration between institutions and schools, but also concerning the emphasis on academic or practical training and the duration of teacher education. White, Bloomfield, and Le Cornu (2010) stated that in the Australian context, the National Partnership Agreement on Improving Teacher Quality is seen as helpful in providing better opportunities for shaping

professional experiences collaboratively by schools and TEIs. As a result, borders between pre-service and in-service professional learning are changing, and opportunities for continuous learning in the workplace by integrating learning with working in schools have been realised (e.g., Streumer & Kho, 2006).

Blurred and changing borders have also been characteristic of the development of teacher education in the Netherlands, where 56 subsidised partnerships exist between TEIs in higher education and schools including primary, secondary and vocational education settings. Teacher education within these partnerships is indicated as school-based teacher education, the learning process at schools as workplace learning.

Despite the differences in specific educational contexts, all partnerships point to the need for situating student teachers' learning in the workplace alongside formal educational activities at TEIs (Maaranen, Kynäslahti, & Krokfors, 2008). Educational activities at work, however, ask for pedagogy that promotes work-based learning. Such pedagogy is still embryonic in its development (Brodie & Irving, 2007).

This study aimed to contribute to the development of a pedagogical approach for workplace-situated teacher education by implementing a mentoring approach based on the support of mentors and school-based teacher educators, who are responsible for guiding student teachers at school (Van Velzen, Bezzina, & Lorst, 2008). As a first step in establishing the contribution of

\* Corresponding author. Tel.: +31 302762021.

E-mail address: [c.p.van.velzen@vu.nl](mailto:c.p.van.velzen@vu.nl) (C. van Velzen).

<sup>1</sup> In the Netherlands teacher education is organised both in Universities and in TEIs. For reasons of readability both will be addressed as 'TEIs'.

this approach to work-based learning, the participants evaluated the approach. The study concerned (a) how mentors, student teachers and school-based teacher educators experienced the effectiveness of the collaborative mentoring approach and (b) their perception of conditions contributing to the effectiveness of the collaborative mentoring approach.

## 1. Conceptual framework

### 1.1. Work-based learning in the education of student teachers

Although workplace learning, with the development of school–TEI partnerships, has become part of teacher education, this method of learning is unfamiliar to many researchers in this field (Maaranen et al., 2008). Over the last few decades, theories of workplace learning have extended dramatically and now encompass both the informal and formal learning of individuals, groups and organizations (Hager, 2011). Most studies, however, are executed in the domains of the (professional) development of workers who have finished their initial education (Billett, 2004; Eraut, 2007; Hodkinson & Hodkinson, 2005). A number of terms related to diverse theoretical ideas from various disciplines have been used to describe the relationship between learning and work. Drawing from publications in this field, Streumer and Kho (2006) distinguished three terms: workplace learning, work-based learning and work-related learning. Workplace learning and work-related learning are seen as virtually interchangeable, general terms. **Work-based learning** refers to the formalisation of learning at work. This process of formalisation is one of the aims of school–TEI partnerships. This term also resonates with a dual meaning: learning for and from work. Our emphasis here is on work-based learning.

Learning at work has often been seen as **informal and incidental**, with the workplace serving as an unstructured learning environment (Marsick & Watkins, 1987). Billett (2004) critiqued this view, stating that **"negative, imprecise and ill-focused descriptions do not help understanding or improving workplaces as learning spaces"**. Instead, the workplace as a learning environment "must be understood as a complex negotiation about knowledge-use, roles and processes – essentially as a question of the learners' participation in situated work activities" (pp. 312–313).

Teacher education enacted in school–TEI partnerships asks for student teachers' participation as teachers in everyday school life in addition to studying at TEI's. Schools can realise opportunities and experiences that afford learning in the context of everyday practice, from which knowledge and new theories can emerge (e.g., Billett, 2004; Guile & Young, 1998). These opportunities can be found through participation in work activities that are not explicitly designated as work-based learning activities and that have been designed intentionally for supporting student teachers' learning (Eraut, 2011). Participation in these work activities enables student teachers to construct necessary knowledge, skills and habits (e.g., Fuller, Hodkinson, Hodkinson, & Unwin, 2005; Kim & Hannafin, 2008), and is a method of learning for which Hodkinson, Biesta, and James (2008) use the metaphor 'learning as becoming'.

Learning, from this perspective, can be organised as a **cognitive apprenticeship model** (Brown, Collins, & Duguid, 1989) that supports student teachers in developing domain and strategic knowledge through peripheral, legitimate participation in the school community (Van Velzen & Volman, 2009; Fuller et al., 2005). The ongoing participation at work leads towards a transformation of ideas and behaviours of student teachers, along with an increased understanding of context and its demands (Edwards, Gilroy, & Hartley, 2002). This results in the development of expertise in interpreting the complexity of

teaching and appropriate ways to think and act as a beginning teacher (Edwards, 2005).

Although participation provides opportunities to learn, workplace settings can differ in the way they affect and afford inform the learning experiences of student teachers. Characteristics of workplace settings that proved to be helpful for (student) teachers' learning, amongst other things (Billett, 2002; Fox, Wilson, & Deaney, 2010; Harrison, Dymoke, & Pell, 2006; Little, 2007), include the following:

- Participation in workplace activities and interactions must be intentionally structured;
- Participation must be guided by experienced colleagues;
- Student teachers must obtain opportunities to determine how they participate;
- Opportunities for learner-centred methods based on student teachers' developmental needs must be offered;
- Opportunities to reflect and think differently must be offered;
- Opportunities for close collaboration with colleagues must be realised;
- An explicit focus on teacher learning as a dimension of normal working practice must be present.

According to Moore (2004), the means by which newcomers at work encounter and use knowledge are socially organised and can be seen as the pedagogy of the workplace. Mentoring is a well known method through which the support of newcomers is organised at schools, and being mentored can be seen as a learning process at or near the workplace (Eraut, 2011). Mentoring provides for guided participation and may offer opportunities not only for the intentional structuring of participation in workplace activities and interactions at school, but also for constructing shared knowledge conceptions based on collaboration and critical reflection.

The practical knowledge of experienced teachers – teaching knowledge in use – is considered to be an important tool in supporting student teachers' learning in a school-based context (e.g., Hagger & MacIntyre, 2006). The mentoring activities of these teachers can help student teachers to practise, understand and discuss teaching alongside experienced practitioners (Loughran, 2006). Mentoring activities, however, are not always aimed towards knowledge construction with student teachers or developing shared conceptions of knowledge in use (Wang & Odell, 2002).

### 1.2. Teachers' work in mentoring student teachers

In their review on mentored learning to teach, Wang and Odell (2002) connected the existing functions of teacher mentoring to learning perspectives that influence teaching practices. Addressing assumptions related to a humanistic and a critical constructivist perspective, they also identified the situated apprentice perspective. This last perspective is based on the social–cultural perspective on learning and assumes that problems student teachers experience when learning to teach are related to their lack of practical knowledge. An important task for mentors is supporting the development of student teachers' practical knowledge in an apprenticeship, with experienced teachers as guides. **Severe critiques on this approach are related to the observations that mentors' teaching knowledge is not questioned and that student teachers are supposed to teach like the mentor does.** Edwards and Protherhoe (2003), for example, pointed out **mentor's** **问题** that mentoring conversations often focus on performance and curriculum delivery instead of student teachers' learning. They also noticed a lack of **critical feedback**, even when desired by student teachers. As a result, these mentoring activities do not

always give student teachers access to the meaning of their experiences and observations.

During mentoring conversations, teachers normally comment on the ideas of their student teachers and provide them with (indirect) suggestions (Strong & Baron, 2004) or descriptive reiterations of observed events (Edwards & Protheroe, 2004). Problems appear to stem from a misunderstanding of the role of mentoring by teachers with an approach that overemphasises practice teaching instead of the creation of a context to facilitate student teachers' learning (e.g., Bullough, 2005; Zeichner, 2010).

Feiman-Nemser (1998) described a set of epistemological and sociocultural reasons why certain mentors do not see themselves as being responsible for teaching student teachers. The first reason relates to tensions between university and professional perspectives on knowledge. Because research knowledge is favoured over teachers' knowledge, teachers' knowledge is therefore viewed as practical information as opposed to 'knowledge in use' that is related to good teaching that may support student teachers' learning. The second reason reflects the idea of individualism and autonomy of teaching, which leads to the conviction that each teacher must develop a style of his or her own. These strong professional norms of idiosyncrasy and self-sufficiency appeared difficult to overcome. This hinders collaboration and the development of shared standards on good practice: going into a teachers classroom is considered an intrusion (Eraut, 1994). Edwards and Protheroe (2004, p. 184) added a third observation by stating that "partnerships are not making the strengths of each set of partners... [M]entors were doing what they were required to do: handing over their classrooms for trial and error learning, observing lessons and giving feedback". They suggested "the problem...lies more at the level of the organisation".

In Dutch partnerships, an additional problem related to the three previously mentioned arguments is that the term 'practicum' has been changed to 'workplace learning', although this learning is still often characterized as experiences that augment and support what is being taught in educational institutions instead of learning on its own terms (NVAO, 2009). Within our educational system, experienced subject teachers have always mentored student teachers during their school practicum. In this method of mentoring, the weak connections between student teachers' learning at school and at TEIs, as described by Feiman-Nemser (1998), were evident. To strengthen the connections between schools and TEIs, a new type of what Zeichner (2010) called 'a hybrid educator' has emerged. At TEIs, experienced teachers have been trained as teacher educators. Their educational arrangements are based on a professional standard for institute-based teacher educators, and the same registration procedure has to be followed (Koster & Dengerink, 2000). Aside from serving as subject teachers, these school-based teacher educators are responsible for the professional development of (student) teachers at school, working in close cooperation with institute-based teacher educators. In the process of establishing partnerships, however, the education of the traditional mentor teachers in schools stayed behind and the expected collaboration with school-based teachers educators is still problematic (Van Velzen et al., 2008; NVAO, 2009).

To realise a means of guided work-based learning that overcomes some of the problems mentioned, we have designed a collaborative mentoring approach aimed at sharing practical knowledge between student teachers and experienced practitioners. In the current study we evaluated whether teachers and student teachers saw this approach as effective. Additionally we studied the conditions that contributed to this level of effectiveness.

### 1.3. A collaborative mentoring approach in partnership schools

Practical knowledge related to (effective) teaching strategies and processes is constructed in multiple modes of learning and then used and diversified in practice (Eraut, 2007; Marsick, 2009). It is situated to be detailed, concrete and context specific (Hiebert, Gallimore, & Stigler, 2002), and it builds on all domains that are important for teachers (e.g., Cochran-Smith & Lytle, 1999; Marland, 2001). Being in part practical, this knowledge cannot be acquired in the formal curriculum of a teacher education institute (Eraut, 1994). It can only be learned in practice, a setting over which teacher educators have little control (Munby, Russell, & Martin, 2001). It cannot, however, simply be transferred from teacher to student teacher (Hager & Hodkinson, 2009). Guided practice at partnership schools may provide opportunities for student teachers to acquire needed practical knowledge.

Modelling practical knowledge by mentors can help student teachers gain access to everyday experiences by making these experiences accessible and supporting the development of knowledge that is unlikely to be learned alone (Hiebert et al., 2002; Loughran, 2006). Teaching cannot simply be articulated (Martin & Russell, 2009), and prevention of the danger of mimicry or simple 'teach as I preach' methods demands the critical discussion of teaching activities, thoughts and convictions of student teachers (e.g., Ethel & McMeniman, 2000; Wang & Odell, 2002). Meeting this demand for critical discussion informed by practical knowledge means that modelling is seen here as continually questioning teaching to

[G]ive student teachers access to the thoughts of, and knowledge about, such practice by explicating the underlying purpose of that teaching approach. This is in stark contrast to the misconception that modelling is a mock teaching demonstration or a tacit call for students of teaching to 'teach like me' (Loughran, 2006, p. 95) 不是“像我这样做”

In this way, modelling becomes a form of practical theorising – looking for interesting ideas for practice and subjecting these ideas to critical examination – which Hagger and McIntyre (2006) promote as a much more demanding kind of reflective practice than is usually found in school-based teacher education.

To realise opportunities for modelling practical knowledge, the mentoring approach is based on aspects of approaches that have proven to be effective in mentoring and afford learning experiences at work. The approach is highly structured, with a focus on professional learning and collaboration (Billett, 2002; Fox, Wilson, & Deane, 2010; Wong, Britton, & Ganser, 2005). To promote professional collaborative learning between the student teacher and the mentor, we used the structure of the collaborative apprenticeship model by Glazer and Hannafin (2006). Typical in this approach is the collaborative planning and teaching, which, according to Hagger and McIntyre (2006), can help mentors to overcome the norms of idiosyncrasy and self-sufficiency mentioned by Eraut (1994) and become more involved in student teachers' practice. Because learning to teach is as much about acting like a teacher as it is about thinking like a teacher (Lampert, 2010; Martin & Russell, 2009), actual lesson enactment is at the heart of this approach. The approach is based on three lessons. The first lesson is enacted by the mentor, the second lesson involves the student teacher and mentor teaching together, and the third lesson is taught by the student teacher. This way of enacting practice allows the mentor to model classroom routines during the first lesson and also give support during actual teaching in the second lesson. In the third lesson, student teachers are actually taking on the role of classroom teacher. Parker-Katz and

自己的风格  
入侵

合作设计和教学可以帮助克服“课堂入侵”和自我问题

Bay (2008) emphasised opportunities for a type of participation in which student teachers are involved in ‘talking *about* and talking *within* a practice.’ This is based on the argument of Lave and Wenger (1991) that new learners learn by learning ‘to talk’ instead of just listening (‘learning *from* talk’) as part of legitimate participation in the community (p. 109, italics in original). **The pre- and post-lesson conversations, aimed at collaborative planning and evaluation, are opportunities for student teachers ‘learning to talk’ next to other (in-)formal conversations with their fellow (student) teachers.** In the study, the lesson cycle was enacted twice and the third post-lesson conversation in the second cycle was a stimulated recall based on a videotaped lesson. Collaborative observation provides them with opportunities to reframe and discuss these observations and make connections with practical knowledge.

**Effective work-based learning by student teachers asks for learner-centred methods based on student teachers’ developmental needs** (Harrison et al., 2006). According to their various learning needs, the focus on their activities may differ. Workplace pedagogy should give space to these differences (Billett, 2002). To realise this, student teachers express and reflect on their learning needs before each lesson cycle with the help of the school-based teacher educator. Along with the concerns of the student teacher, the development of legally specified competencies and the demands of the teacher education institute are part of these discussions. In these conversations, school-based teacher educators support student teachers in connecting and integrating knowledge that is acquired at the TEI and includes opportunities to learn through practice. The outcomes of these conversations are incorporated into the mentoring approach (e.g., Endedijk, 2010; Eraut, 1994), generating a focus during lesson observations and mentoring conversations. **在下次看课和讨论时具有针对性**

In sum, the designed mentoring approach is aimed at mentors modelling practical knowledge with their student teachers. The approach is based on general features that proved to be effective in mentoring and on principles that are beneficial for the effective vocational learning of novices with the help of experienced colleagues. Mentors and student teachers work together in actual practice by collaboratively discussing and reflecting on authentic situations. The attention of the student teachers is drawn as often as possible to specific aspects of their experiences related to their learning needs. Table 1 represents the approach in scheme.

#### 1.4. The present study

In the present study, we questioned how mentors, student teachers, and school-based teacher educators experienced the effectiveness of the approach and the conditions under which they think it might be a successful means for guiding student teachers’ work-based learning.

**Table 1**  
The collaborative mentoring in scheme.

Preparing conversation	Cycle one			In between cycles	Cycle two			
	Pre-lesson Conv.	Pre-lesson conv.	Pre-lesson conv.	Evaluation and preparing cycle 2	Pre-lesson conv.	Pre-lesson conv.	Pre-lesson conv.	Evaluation
	Lesson 1.1 mentor	Lesson 1.2 mentor & student teacher	Lesson 1.3 student teacher		Lesson 2.1 mentor	Lesson 2.2 mentor & student teacher	Lesson 2.3 student teacher	
	Post-lesson conv.	Post-lesson conv.	Post-lesson conv.		Post-lesson conv.	Post-lesson conv.	Post-lesson conv. based on videotaped lesson	

This research project was conducted over two years in two different schools. In the first year, a pilot collaborative mentoring approach was designed, tested and adapted in a preliminary research project (cf. Plomp, 2007) with two triads in one school. Participants were satisfied with the cyclic structure of the approach but they disagreed on the differences related to their regular conversations. In the second year, the approach was enacted in another school with three triads. The present study evaluated the effectiveness of the mentoring approach in the second year with three triads in one school.

The research questions central to this study were:

1. How do mentors, student teachers and school-based teacher educators appreciate the effectiveness of the collaborative mentoring approach and its components as means of guided work-based learning? **如何使合作更有效?**
2. Which conditions contributed to the effectiveness of the collaborative mentoring approach according to the participants? **根据参与者情况哪些条件下导致合作指导的有效性?**

In trying to understand the appreciation of mentors, student teachers and school-based educators of the effectiveness of the approach, we adopted a model of stakeholder research. According to House (2005), the perspectives of stakeholders, who have legitimate professional or personal interests in the matter at hand, are incorporated into evaluations to determine which social benefits are at issue. A model of stakeholder research involves working within an interpretative paradigm (Smith, 1989 in Hodkinson & Hodkinson, 1999).

Appreciation of the effectiveness of this approach is defined in this study as the extent to which the collaborative mentoring approach and its components (modelling practical knowledge with a focus on learning needs) are experienced by the stakeholders as supportive in guided work-based learning. Conditions here are seen as features related to the approach itself, and also personal and/or organisational aspects, which, according to the stakeholders, are contributing to effectiveness (cf., Nieveen, 2007). In this study, the stakeholders of central concern are the mentors and the student teachers. Along with these, school-based teacher educators also participated in the study.

## 2. Method

### 2.1. Research context and participants

大班教学

The school in which we conducted our study has traditionally educated a large number of student teachers and maintains valued partnerships with several TEIs. All guidance teams (mentor, student teacher and school-based teacher educator) were asked to participate, and three triads agreed to do so. All three mentors (Megan, Mick and Morris) and the two school-based teacher educators (Tirza and Terry) who participated in the study are experienced teachers (13–37 years of experience, respectively) and mentors

3mentors, 2 school-based teacher,

课后的评价可以给予教师提出他们对其他人的看法,表达自己的想法

需要经常性的反思

有经验的教师帮助整合和链接实践中的观点

(1–15 years of experience, respectively). Mentors and school-based teacher educators have had additional training. However, the modelling of practical knowledge, as evidence of mentoring competence, is not yet demanded by the school and has not been part of this training. Although mentors receive additional payment for their mentoring task, mentoring time is not included in their weekly timetables.

Student teachers (Selma, Simon and Sophie) received two ECTS (European Credit Transfer System<sup>2</sup>) for their cooperation in the study. Their subject backgrounds are chemistry, geography and English, respectively. The level of their classes is pre-university education, secondary general education, and preparatory secondary vocational education, respectively. Student teachers were not viewed as 'guests' at this school (Ragonis & Hazzan, 2009) and special arrangements had been created for them. They were given temporary paid appointments, which provided time for them to teach, study and to be mentored and supervised.

All participants were informed of the aims and the intended proceedings of the mentoring approach before starting the enactment. The mentors were informed of the difficulties student teachers often experience in asking questions about the mentors' practical knowledge, and they were also provided with a handout that suggested questioning and talking with their student teachers. Before starting the approach, mentors and school-based teacher educators practised practical knowledge sharing based on video-taped lessons of the mentors through discussion of their observations on what they did, and also how and why they did it, congruent with what was asked from them in conversations with student teachers. The first author functioned as a role model. Student teachers were informed of the aims of this approach, of differences between novices and experts, and of the difficulties experts encounter when modelling knowledge. After the first cycle, a handout with suggestions on how to question their mentors about their knowledge, ideas and assumptions was distributed and discussed with the student teachers.

Subsequent to these supportive activities, mentors, student teachers and school-based teacher educators were asked to make a concept map on 'what do I know as a teacher?' Maps were discussed and reflected on to enhance the awareness of practical knowledge of the participants, to give opportunities to make this knowledge explicit and to compare the maps of novices and experienced teachers.

The teacher education program that these student teachers attend lasts for one year (60 ECTS for theory and practice), and during this year, mentors, school-based teacher educators and student teachers work together (30 ECTS). Regular mentoring conversations are held once a week. Mentoring activities were planned by the mentors and the student teachers during available time in their schedules. The conversations with the school-based teacher educators were part of their regular conversations. Along with these conversations, participants met during coffee breaks and at other times with various colleagues. The mentoring approach started when student teachers were at school for at least four months, and its enactment lasted almost three months because of the time between the first and second cycles.

<sup>2</sup> ECTS: European Credit Transfer System. The EU introduced this standardized system for measuring study load as a way to facilitate international mobility. One ECTS credit represents 28 h of full-time study, and 60 credits represent one year (Dutch Educational System, Nuffic, available on: <http://nufficglossary.nuffic.nl/>).

## 2.2. Data collection

To examine the experienced effectiveness and related conditions of the mentoring approach by the stakeholders, multiple data collection (see Merriam, 1998) was based on semi-structured interviews, a small questionnaire prior to the last interview, individual logs, student teachers' digital portfolios, and the reflective conversations on the concept maps.

1. Semi-structured interviews with the mentors and student teachers about their experienced effectiveness and related conditions were held (e.g., Margerum-Leys & Marx, 2004). At the end of each lesson cycle, evaluative conversations were carried out with the individual student teachers and mentors. At the end of the project, the mentors and school-based teacher educators were interviewed together (see Appendix A: Interview topics). All conversations were audio taped.
2. Short questionnaire: Before the last interview, student teachers completed a quick scan related to the perceived usefulness of key aspects of the approach. These included the formulation of learning needs in preparing conversations with school-based teacher educators, lesson-based conversations and lesson enactments with the mentor, and the construction and discussion of the concept maps by the triad. The mentors' quick scan focused on the **lesson cycles and the concept map**.
3. Individual logs: Mentors and student teachers were asked to keep a log and to reflect on their experiences after each lesson. Student teachers and mentors were explicitly asked to reflect on what was observed and discussed, how it was discussed, and whether they thought these conversations were effective. At the end of each cycle, they were asked to summarize their most important experiences and their perceived learning outcomes.
4. Student teachers' digital portfolios were used as institutional reflective tools on practical experiences.
5. The audio taped conversations about the concept maps by each triad.

## 2.3. Data analysis

A multi-step iterative process to search for statements on effectiveness and conditions related to effectiveness was conducted. First, all of the interviews, lesson-based conversations and concept map conversations were transcribed verbatim. Secondly, statements related to specific aspects of the designed approach (preparative conversation, lesson conversations, demonstration of teaching behaviour, collaborative teaching, and the focus on learning needs) in the interviews with mentors, student teachers, and school-based teacher educators were identified. This content analysis was triangulated with evaluative and reflective remarks from the quick scans, logs and concept map discussions. Statements from student teachers in their digital portfolios on the effectiveness and conditions for effectiveness of the approach were added. A matrix was then constructed of the statements of each participant related to the different aspects of the approach (vertical analysis). A horizontal analysis was carried out to determine similarities and differences within each group of participants and between the triads. Illustrative examples of utterances were also identified (Huberman & Miles, 1994).

Although a preliminary research report in Dutch was presented to the participants in the school (member check, cf. Merriam, 1998), no additional remarks were made concerning the findings

每节课都有反思，课后总结最重要的成果和经验

mentor  
的职责

注重人  
际支持

presented. Design, data gathering, the data, the emerging analysis and interpretation were discussed in several research communities, whilst feedback was integrated to further enhance the trustworthiness of this research (Taylor & Bogdan, 1998). For instance, the provision of information on the questioning of student teachers by mentors and mentors by student teachers between two cycles was discussed and determined to be important in realising the intended enactment and, therefore, admissible.

### 3. Results

#### 3.1. Experienced effectiveness of the overall mentoring approach

The experienced effectiveness is related to the way stakeholders judge the approach as helpful in guiding student teachers' work-based learning. The overall mentoring approach was seen as effective by all participants.

Mentors appreciated the structured method of mentoring that was grounded in the repetitive cycles of lesson preparation, enactment and evaluation. They also appreciated the focus on learning needs because it deepened their conversations and helped them 'see more' of each other during practice. The following statements (all statements have been translated from the original Dutch) reflect this appreciation: "Doing it is very nice. It supports the student teacher, and it supports me as a mentor and as a teacher" (Mick). Megan stated that the "conversations went deeper, and as a result, I could tell her things that really matter and show them to her [Selma] quicker than normal". Morris said the following: "Normally, I would provide my trainees with hints...but those conversations were empty talk. Now it was much more focused and it encouraged me to look at myself and ask how and why I was doing this as a mentor."

Although Megan was quite positive about the approach in helping her to overcome the norm of non-intrusion, this was less the case for the other two mentors. These two often emphasised the following to their student teachers: "That [e.g., aspects of class management] is something you have to develop yourself. You cannot copy that from somebody else". Initially, they were afraid of mimicry and they shared the conviction that idiosyncrasy and self-sufficiency are professional norms for teachers. During the process, however, they eventually began to acknowledge the value of the approach, which was reflected in their logs and in the interviews.

Student teachers judged the structure, the regularity of the conversations and the teaching as being altogether very valuable. All activities were rated as useful or very useful. Sophie explained as follows: "It helped me to analyse, interpret and understand moments in my classroom better than before. I became more aware of my behaviour and reactions to pupils. It forced me to reflect more than I already did." All three of them mentioned the new learning questions that arose as a result of the observations and conversations. Selma mentioned the differences between this approach and the 'regular' one:

Each week, there are moments when we talk about how things are going... But normally, lesson preparation and evaluation are things I do on my own. This time we went much deeper... It gave us the chance to discuss and deliberate on issues and to find out what the other thinks: Is this the right thing to do? What works here and why? I very much liked discussing in detail what you could do, what you did do, and why.

All three students used the outcomes of the conversations and lessons in their portfolios, as is reflected in the following: "This

mentoring approach taught me how much I can learn by observing my mentor" (Simon).

Both school-based teachers appreciated their role because it gave them motivation to focus on the learning needs of their student teachers. In addition to this, they also valued their increased communication with mentors.

#### 3.2. Experienced effectiveness of collaborative preparing, teaching and lesson evaluation

##### 3.2.1. Preparing conversations

The conversations between the student teacher and the school-based teacher educator were seen as being helpful in fulfilling the learning needs that student teachers are required to formulate in their portfolios. Sophie specifically mentioned that her school-based teacher educator was better prepared to do this than her mentor. Student teachers had to explain to their mentors which of the learning questions they formulated had helped mentors to better understand their needs. Although such explaining was not always done at the beginning of conversations, the learning needs were eventually discussed and became part of the observation and evaluation. For the mentors, the explicit focus on learning needs also resulted in better opportunities for discussing additional learning needs that arose from practice.

##### 3.2.2. Pre-lesson conversations

The three pairs (mentors and student teachers) had different strategies for preparing lessons together. Megan and Selma individually prepared each lesson and then discussed both approaches. Sophie prepared all of the lessons (including the first ones that were enacted by her mentor), and her preparation was discussed and adapted in the pre-lesson conversation with Morris. Mick and Simon exchanged ideas via email and discussed and completed their lesson preparation in their pre-lesson conversations.

For Mick, lesson preparation was a joint activity based on information that had been exchanged in advance. Mick liked the opportunities to compare and explain to each other what they were doing and why during the preparation of a lesson. Thanks to the opportunity to conduct these preparations in their own way, it worked for each of them.

##### 3.2.3. Lesson enactment

Collaborative teaching was seen by Megan, in particular, as being very helpful and providing instantaneous support in addition to overcoming the norm of non-intrusion: "For me this is a real enrichment. It is no longer seen as a 'violation,' such as when a mentor is saying things from the sidelines. Now we are in it together. We do it together, and it feels safe when you interfere" (Megan). She and her student teacher both used the opportunity to consult each other during these lessons after informing their pupils that they were taking a formal 'time out'.

For Morris, teaching the first lesson was nerve-wracking, especially because Sophie had prepared the lesson and she had asked him to do some things he was not familiar with, such as using a PowerPoint presentation as a tool to structure the lesson. Also, Morris wondered whether some of Sophie's ideas were feasible, but he tried them nevertheless because he wanted "to give those ideas a real chance". During classroom activities in the collaboratively taught lesson, Morris was on the sidelines, but he collaborated with Sophie when she asked him to do so. Although Morris was satisfied with this dynamic, Sophie thought more could have come out of this collaboration.

根据每位教师来裁

1. (Megan & Selma) 分别准备一节课, 然后讨论  
2. (Sophie & Morris) 全部准备, 在和 M 共同讨论改进  
3. (Mick & Simon) 讨论着准备

制定, 实施

如果一同设计, 再来评价就不会感觉到是一种侵犯

安全感

令人头疼的

不熟悉

可能的

The first lesson was also a nerve-wracking experience for Mick. The lesson was enacted in a class that was normally taught by Simon. The reactions of these pupils were different from what they had expected during lesson preparation. Mick and Simon also consulted each other whilst teaching together and judged this as a very valuable opportunity.

Mentors reported that they attempted to deliberately demonstrate teacher behaviour in relation to learning needs, but that they did not explicitly plan their lessons with these needs in mind. Hence, behaviour was only demonstrated when the necessity came up in 'normal' practice.

### 3.2.4. Post-lesson discussions

All three pairs used the post-lesson conversations to discuss their teaching experiences from the perspective of the learning questions of the student teacher and related these experiences to the lesson preparations. Also, 'things that occurred and other remarkable things' were part of these conversations. Conversation items were based on the observations of the mentor and the student teacher and on aspects that mentors thought to be important for student teachers to discuss. Examples included the value of the beginning of the first lesson of the day and how to take up a position in the classroom. Whilst discussing mentor behaviour, one of the student teachers realised she had never thought about her spatial position and the effect that might have on pupils' behaviour. She had, therefore, never formulated a learning question about her spatial position. During the next lessons, she began to experiment with position taking by observing its effect on pupils. Both Mick and Simon stated that the conversation based on the taped lesson afforded new possibilities for them to actually see and repeat, and also to discuss crucial situations and obtain a deeper insight.

录课非常重要，对于重新审视自己的课堂带来了可能，也可能带来新的及更深入的视角

### 3.3. Conditions related to the effectiveness of the approach

During the interviews and in the logs, participants were asked to talk and write about conditions that, in their eyes, contributed to the effectiveness of the approach. All participants mentioned helpful aspects of the approach along with personal and organisational conditions that they found to be important.

#### 3.3.1. Conditions related to approach features

The repetitive cyclical structure, the focus on student teachers' learning needs and the discussion of actual practice one lesson at a time were judged by all participants as being important aspects of the mentoring approach. An additional important aspect for the mentors proved to be the "valuing of their expertise" in this mentoring approach. Their contribution to the education of student teachers became visible and improved their self-reliance. During this study, they began to recognise and value their practical knowledge better. Except for Megan, making concept maps and reflecting on them as a means of making practical knowledge explicit was not seen as being useful by the mentors.

Student teachers identified the focus on a single lesson, preparation and evaluation as important aspects of the approach, next to the focus on their learning needs. They experienced these as opportunities to bring to light their learning questions along with teaching aspects they did not previously realise. Observing their mentor and teaching together were also important for them. Normally, observing was only done during the first weeks of their education, and collaborative teaching was rather new to them. Student teachers appreciated making and discussing concept maps, which helped

新手和有经验的老教师在概念图上有所反应

them to gain an idea of the differences between themselves and the experienced practitioners.

For the school-based teacher educators, one effect of enacting this approach was that they again realised their role in formulating learning needs which are important to these preparation conversations. Communication and collaboration with the mentors were also judged as being important. Not only do these aspects provide school-based teacher educators with opportunities to align their supervision with the mentors, but they also give school-based teacher educators greater insight into the development of the student teachers.

#### 3.3.2. Personal conditions

An important personal condition for the mentors was the willingness to demonstrate and discuss actual teaching. Collaborative teaching, which involves cooperation in the classroom during teaching and becoming more than an observer on the sidelines, demands of mentors a risk-taking attitude. Along with this, they mentioned the actual willingness to learn from work and from student teachers and the ability to make practical knowledge explicit, whilst at the same time withholding judgement on student teachers' ideas and activities. The importance of these conditions was confirmed by Allen (2011). She found, in weakened partnership arrangements, many supervising teachers to be reluctant or even unwilling to work with student teachers disempowered student teachers. Based on information our mentors volunteered before participating in this study, their personal conditions were, in their opinion fulfilled. As for themselves, they judged the further development of these personal conditions as being positive outcomes of the approach.

All three student teachers mentioned personal conditions such as a good relationship based on trust and confidence with their mentor, genuineness and inspiration. Although these are personal conditions are important to any mentoring activity, they emphasised these conditions as being important for critical discussion of behaviour and ideas. These conditions were already fulfilled at the start of the approach, but in the eyes of the student teachers, they developed even further as positive effects of this approach.

#### 3.3.3. Organisational conditions 了解不足

Practising before starting the approach turned out to be inadequate for allowing mentors to understand what was asked of them and to equip them sufficiently. Support during enactment, aside from the training, was mentioned as an effective form of professional development. Information handed out to the mentors after the first cycle was not used because they thought it to be too extensive and that it came too late. They all agreed, however, that the information was useful during professionalization activities in meetings and in practising lesson conversations. It is clear that written handouts should be available before starting the approach and should become part of the professional development activities. Timely information related to more theoretical insights and educational language was also seen as being important. 及时的信息及更多的理论视角和教学语言也非常重要

The student teachers used the handout with examples of questioning during their lesson conversations in the second cycle. Another important organisational condition proved to be the (paid) educational arrangements with real teaching responsibilities for student teachers in the eyes of pupils and colleagues. 感到责任、学习共同体

Conversation time was an issue; even under 'normal' mentoring situations, time to mentor, in the eyes of the mentors, is not enough. The conversations were viewed as being time-consuming because in the regular mentoring approach, all lessons given in a particular

在谈话过程中的一些点从来没有想过，在下次实践中会思考

概念图和反思使实践性知识显性化

信息（反馈）不能太迟、太泛

week and other topics that arose are discussed in almost the same amount of time now used for pre- and post-lesson conversation related to one lesson. All mentors, however, were convinced of the importance of having these conversations and agreed with Mike, who said, “Time is never enough, but being a partner school should mean making this time a prerequisite that you owe to your student teachers and their mentors”. Time was less of a problem for the school-based teacher educators because they planned these conversations during their regular time schedule. Also, the student teachers felt that the mentoring procedure took more time than regular mentoring discussions because of the observation of the first lesson, the collaborative teaching and the duration of the conversations. All student teachers agreed with Selma, who stated that “It takes a lot of time, but this way you are becoming much more conscious of the way you act and think, and that is why I think it is a good investment.” 认为这种时间投入的有用性

Along with the previously mentioned conditions, the participants came up with new organisational and personal conditions related to the improvement of the approach:

- 常规
1. Organisational support of the school-based teacher educator, which allows the approach to be a regular part of all mentoring activities;
  2. Strengthening mentor-school-based teacher educator team collaboration through the support of mentors by school-based teacher educators to use this mentoring approach alongside the usual mentoring process;
- 能力
3. Strengthening the competency of:
    - School-based teacher educators in supporting the articulation of student teachers’ learning needs related to actual learning possibilities in daily work;
    - Mentors associated with the latest developments in their (school-)subject and methods and enabling them to connect their practical knowledge with new (theoretical) insights and to develop a language for discussing their practical knowledge; 新视角
    - Student teachers in tapping the practical knowledge of colleagues. 开放同事的实践性知识

#### 4. Conclusion and discussion

This small-scale study was set up as a contribution to a situated learning approach in the context of site-based teacher education – an approach that is comparatively less common in research on teacher education (Kim & Hannafin, 2008). The approach builds on the idea of mentoring as a way for student teachers to encounter and learn to use practical teaching knowledge at school. Design principles were derived from insights into how workplace settings can function as learning environments and also as effective mentoring activities. The approach aimed at modelling practical teaching knowledge with student teachers’ learning needs as its focus.

The results of this evaluative study pointed out participants appreciated the approach and its components as effective means in guided work-based learning. **Deeper conversations appeared and new learning issues emerged earlier than in regular mentoring conversations.** Important conditions that, in the eyes of the participant, contributed to the effectiveness of the approach included conditions related to approach features, personal conditions and organisational conditions. Approach features that were considered crucial were the repetitive cyclical structure of the approach and the collaborative discussions and lesson enactment. The focus on student teachers’ learning needs was also mentioned by all stakeholders. Next to these features the valuing of mentors’ expertise which was at the basis of the

approach, was seen as important. Personal conditions were the willingness to demonstrate and discuss actual teaching and to learn from each other. Along with this condition mentor competencies related to subject knowledge and pedagogical methods were mentioned as was the need for student teachers’ knowledge on how to tap mentors’ teaching knowledge. Time was an important organisational condition as was the support by and collaboration with the school-based teacher educator.

All mentors and student teachers, despite differences in the way they enacted the approach, recognised the value of their close collaboration in lesson enactment, preparation and evaluation. The approach indeed appears to have provided participants with possibilities for sharing practical knowledge that results in professional learning. These findings match those of Nilsson and Van Driel (2010) in their study on teaching and learning together in a mentoring context.

By overcoming the reluctance to intrude on beginning teachers’ practice, mentors realised a context that facilitated student teachers’ intentional learning at school. Mentors and student teachers experienced lesson observations and mentoring conversations that went deeper than usual in addition to important issues that were discussed earlier than usual, and they also identified new learning issues. Student teachers’ participation in lesson enactment, preparation and evaluation were based on critical discussion of everyday challenges and collegiality, which helped them to learn what it means to be a teacher. This stance concerning student teachers’ learning and working is in line with the findings of Little (2007), that the discussion of classroom experiences amongst teachers constitutes a resource for sharing and learning and fits the objectives of school-based teacher education in partnerships.

The focus on the learning needs of student teachers, expressed with the help of the school-based teacher educators, proved to be an important characteristic of the approach, which gave them opportunities to participate within these lessons in ways they elected. These conversations started with what they knew, which was helpful in enhancing their interest in what others knew and how they might help. As stated by Lieberman and Pointer Mace (2009, p. 469), this helps to ‘open teachers’ classrooms to inquiry, breaks the isolation that keeps teachers from becoming colleagues and forms the basis for a professional learning community... and internalizes the idea that teaching is a ‘learning profession’. These are all important characteristics for a learning environment at work.

Along with the opportunity to influence their learning environment by focussing on their learning needs beforehand was the availability of additional room for ‘unforeseen and unexpected’ teaching experiences. Guided work-based learning calls for openness and attention to these aspects because managing them is an important part of the teaching profession that student teachers can hardly learn in the formal curriculum of a TEI. This balance, in terms of focus and openness, is an indication that the enacted approach realises a form of high-leverage practice in which student teachers are confronted with common problems that novice teachers face and enables them to learn teaching (Hatch & Grossman, 2009). The collaboratively taught lessons provided them with opportunities to rehearse and enact discrete components of complex teaching practice. In the lesson of the cycle, which students enacted on their own, the collaborative preparation and evaluation helped them to discuss those components of practice related to their learning needs.

All participants mentioned these outcomes as explanations for the experienced effectiveness of the approach. An important



factor, nevertheless, also could have been the amount of time spent discussing one lesson compared to the normal situation in which other things are also discussed in a mentoring conversation. On the other hand, there were no signs of any other subjects vying for the participants' attention, which would cause future problems. Further research comparing more common approaches with the one in this study might help to further clarify differences in effect.

The realisation of work-based learning in school that goes beyond providing experiences and applying insights from the institutional curriculum presents new challenges for schools and the practitioners supporting student teachers. Along with opportunities to learn through participation in work activities that are not explicitly designed as learning activities, participation in ongoing activities that are intentionally guided by experienced practitioners is one affordance a school can offer to student teachers. Within school–TEI partnerships, this work-based curriculum must be discussed, designed, and understood as a pathway towards full participation in social school practice by student teachers (Billett, 2006).

Mentors and student teachers learn from each other, which means that the pedagogical relationship in this apprenticeship was not one-way, which can be a problem with 'modelling'. According to Fuller and Unwin (2004), this is an indication that this 'apprenticeship' was based on respect for expertise and for colleagues, regardless of age and status. Beside with that which mentors can learn from student teachers related to their own teaching, the uncovering and explaining of one's own teaching practice, which is so characteristic of this approach, is a necessity to realise robust professional development of (mentor) teachers (Lieberman & Pointer Mace; 2009).

Unawareness of behaviour and practical knowledge, and also a lack of language to discuss behaviour and ideas, are issues related to the nature of practical knowledge. Participating in this approach helped mentors to develop these competencies, but it was not enough; more attention must be paid to them. The

questions of whether an institute-based teacher educator or a school-based teacher educator can or should be a role model, and whether mentors should be educated further in relation to modelling competencies, and by whom, are dilemmas for the future development of these partnerships in teacher education. This discussion on the division of roles and responsibilities between school and institute is part of a broader discussion on educating teacher educators and related research on the identity of teacher educators (e.g., Bullough, 2005; Swennen, Jones, & Volman, 2010).

The development of a pedagogy of work-based learning in teacher education is still in its infancy. Based on the outcomes of this study, we can conclude that the designed collaborative mentoring approach can contribute to the development of a revisited mentoring mindset in school-based teacher education, and it can also strengthen the school as a learning environment for student teachers and mentors. The institutionalisation of this approach, which calls for a restructuring of student teachers' guided participation, requires conditions that may not yet be available at schools. For enactment of this approach in other partner schools, further study on the organisational conditions that favour a sustainable implementation of this approach is needed.

### Acknowledgements

We are very grateful to the mentors, the student teachers and the school-based teacher educators for their collaboration in this project. Without their professionalism, enthusiasm, openness and time we are not able to perform research within actual teaching practice. We also thank Dr. van der Klink, Dr. Onstenk, Dr. Crasborn, and our anonymous reviewers for their helpful comments on earlier versions of this article.

### Appendix A. Interview items

What	Whom		
	Student teachers	Mentors	Mentors and school-based teacher educators, group interview
Experienced effectiveness (consistency of the objectives of the approach and actual outcomes)	<ul style="list-style-type: none"> <li>- Appreciation of the mentoring approach: the cyclic structure; the 3 lessons and the related lesson-based conversations; focus on the learning questions</li> <li>- Learning from the practical knowledge of your mentor during teaching and lesson-based conversations</li> <li>- Other experiences related to appreciation of the effectiveness of the approach</li> </ul>	<ul style="list-style-type: none"> <li>- Appreciation of the mentoring approach: the cyclic structure; the 3 lessons and the related lesson-based conversations; focus on the learning questions</li> <li>- Showing and discussing practical knowledge during teaching and lesson-based conversations</li> <li>- Mind maps as an instrument to make practical knowledge explicit</li> <li>- Other experiences related to appreciation of the effectiveness of the approach</li> </ul>	<ul style="list-style-type: none"> <li>- Appreciation of the role division</li> <li>- Support needed and given</li> <li>- Other experiences related to appreciation of the effectiveness of the approach</li> </ul>
Conditions favouring experienced effectiveness	<ul style="list-style-type: none"> <li>- Understanding the aims and the procedure of the approach</li> <li>- Planning and execution of conversations and lessons</li> <li>- Helpfulness additional information</li> <li>- Other conditions</li> </ul>	<ul style="list-style-type: none"> <li>- Understanding the aims and the procedure of the approach</li> <li>- Planning and execution of conversations and lessons</li> <li>- Practising modelling practical knowledge before starting the approach</li> <li>- Helpfulness additional information</li> <li>- Other conditions</li> </ul>	<ul style="list-style-type: none"> <li>- Collaboration as a guiding team</li> <li>- Competences needed</li> <li>- Future use</li> <li>- Other conditions</li> </ul>

## References

- Allen, J. M. (2011). Stakeholders' perspectives of the nature and role of assessment during practicum. *Teaching and Teacher Education*, 27, 742–750. doi:10.1016/j.tate.2010.12.004.
- Billet, S. (2006). Constituting the workplace curriculum. *Journal of Curriculum Studies*, 38, 31–48. doi:10.1080/00220270500153781.
- Billet, S. (2002). Towards a workplace pedagogy: guidance, participation and engagement. *Adult Education Quarterly*, 53, 27–43.
- Billet, S. (2004). Workplaces as participatory practices: Conceptualising workplaces as learning environments. *The Journal of Workplace Learning*, 16, 312–324. doi:10.1108/13665620410550295.
- Brodie, P., & Irving, K. (2007). Assessment in work-based learning: investigating a pedagogical approach to enhance student learning. *Assessment and Evaluation in Higher Education*, 32, 11–19. doi:10.1080/02602930600848218.
- Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18, 32–34.
- Bullough, R. V., Jr. (2005). Being and becoming a mentor: school-based teacher educators and teacher educator identity. *Teaching and Teacher Education*, 21, 143–155.
- Cochran-Smith, M., & Lytle, S. L. (1999). Relationships of knowledge and practice: teacher learning in communities. *Review of Research in Education*, 24, 249–305.
- Edwards, A. (2005). Let's go beyond community and practice: the many meanings of learning by participating. *The Curriculum Journal*, 16, 53–69. doi:10.1080/0958517042000336809.
- Edwards, A., Gilroy, P., & Hartley, D. (2002). *Rethinking teacher education: Collaborative responses to uncertainty*. London: Routledge.
- Edwards, A., & Protheroe, L. (2003). Learning to see in classrooms: what are student teachers learning about teaching and learning while learning to teach in schools? *British Educational Research Journal*, 29, 227–242. doi:10.1080/0141192032000060957.
- Edwards, A., & Protheroe, L. (2004). Teaching by proxy: understanding how mentors are positioned in partnerships. *Oxford Review of Education*, 30, 183–197. doi:10.1080/0305498042000215511.
- Edwards, G., Tsui, A. B. M., & Stimpson, P. (2009). Contexts for learning in school-university partnership. In A. B. M. Tsui, G. Edwards, & F. J. Lopez Real (Eds.), *Learning in school-university partnership: Sociocultural perspectives* (pp. 3–24). London: Routledge.
- Endedijk, M. D. (2010). *Student teachers' self-regulated learning*. Doctoral dissertation, Utrecht: Utrecht University. Retrieved from <http://igitur-archive.library.uu.nl/search/search.php?language=nl&qry=Endedijk>.
- Eraut, M. (1994). *Developing professional knowledge and competence*. London: Routledge Falmer.
- Eraut, M. (2007). Learning from other people in the workplace. *Oxford Review of Education*, 33, 403–422. doi:10.1080/03054980701425706.
- Eraut, M. (2011). How researching learning at work can lead to tools for enhancing learning. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *Sage handbook of workplace learning* (pp. 181–197). London: Sage.
- Ethel, R. G., & McMeniman, M. M. (2000). Unlocking the knowledge in action of an expert practitioner. *Journal of Teacher Education*, 51, 87–101. doi:10.1177/002248710005100203.
- Feiman-Nemser, S. (1998). Teachers as teacher educators. *European Journal of Teacher Education*, 21, 63–74.
- Fox, A., Wilson, E., & Deaney, R. (2010). Beginning teachers' workplace experiences: perceptions and use of support. *Vocations and Learning*, 4, 1–24. doi:10.1007/s12186-010-9046-1.
- Fuller, A., Hodkinson, H., Hodkinson, P., & Unwin, L. (2005). Learning as peripheral participation in communities of practice: a reassessment of key concepts in workplace learning. *British Educational Research Journal*, 31, 49–68. doi:10.1080/0141192052000310029.
- Fuller, A., & Unwin, L. (2004). Young people as teachers and learners in the workplace: challenging the novice–expert dichotomy. *International Journal of Training and Development*, 8, 32–42. doi:10.1111/j.1360-3736.2004.00194.x.
- Glazer, E. M., & Hannafin, M. J. (2006). The collaborative apprenticeship model: situated professional development within school settings. *Teaching and Teacher Education*, 22, 179–193. doi:10.1016/j.tate.2005.09.004.
- Guile, D., & Young, M. (1998). Apprenticeship as a conceptual basis for a social theory of learning. *Journal of Vocational Education and Training*, 50, 173–192.
- Hager, P. (2011). Theories on workplace learning. In M. Malloch, L. Cairns, K. Evans, & B. N. O'Connor (Eds.), *Sage handbook of workplace learning* (pp. 17–31). London: Sage.
- Hager, P., & Hodkinson, P. (2009). Moving beyond the metaphor of transfer of learning. *British Educational Research Journal*, 35, 619–638. doi:10.1080/01411920802642371.
- Hagger, H., & McIntyre, D. (2006). *Learning teaching from teachers realizing the potential of school-based teacher education*. Maidenhead: Open University Press.
- Harrison, J., Dymoke, S., & Pell, T. (2006). Mentoring beginning teachers in secondary schools: an analysis of practice. *Teaching and Teacher Education*, 22, 1055–1067. doi:10.1016/j.tate.2006.04.021.
- Hatch, T., & Grossman, P. (2009). Learning to look beyond the boundaries of representation: using technology to examine teaching (Overview for a digital exhibition: learning from the practice of teaching). *Journal of Teacher Education*, 60, 70–85.
- Hiebert, J., Gallimore, R., & Stigler, J. (2002). A knowledge base for the teaching profession: what would it look like and how can we get one? *Educational Researcher*, 31, 3–15.
- Hodkinson, H., & Hodkinson, P. (1999). Teaching to learn, learning to teach? School-based non teaching activity in an initial teacher education and training partnership scheme. *Teaching and Teacher Education*, 15, 273–285.
- Hodkinson, H., & Hodkinson, P. (2005). Improving schoolteachers' workplace learning. *Research Papers in Education*, 20, 109–131. doi:10.1080/02671520500077921.
- Hodkinson, P., Biesta, G., & James, D. (2008). Understanding learning culturally: overcoming the dualism between social and individual views of learning. *Vocations and Learning*, 1, 27–47. doi:10.1007/s12186-007-9001-y.
- House, E. R. (2005). Qualitative evaluation and changing social policy. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (pp. 1069–1082). Thousand Oaks: Sage Publications.
- Huberman, A. M., & Miles, M. B. (1994). Data management and analysis methods. In N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 428–445). Thousand Oaks: Sage Publications.
- Kim, H., & Hannafin, M. J. (2008). Situated case-based knowledge: an emerging framework for prospective teacher learning. *Teaching and Teacher Education*, 24, 1837–1845. doi:10.1016/j.tate.2008.02.025.
- Koster, B., & Dengerink, J. (2000). *Towards a professional standard for Dutch teacher educators*. Paper presented at the ATE conference February 2000, Orlando, USA.
- Lampert, M. (2010). Learning teaching in, from and for practice: what do we mean? *Journal of Teacher Education*, 61, 21–34. doi:10.1177/0022487109347321.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: University Press.
- Lieberman, A., & Pointer Mace, D. H. (2009). The role of 'accomplished teachers' in professional learning communities: uncovering practice and enabling leadership. *Teachers and Teaching*, 15, 459–470. doi:10.1080/13540600903057237.
- Little, J. W. (2007). Teachers account of classroom experience as a resource for professional learning and instructional decision making. In P. Moss (Ed.), *Evidence and decision making: 2007 NSSE yearbook* (pp. 217–240). Oxford: Blackwell Publishing.
- Loughran, J. J. (2006). *Developing a pedagogy of teacher education: Understanding teaching and learning about teaching*. London: Routledge.
- Maandag, D. W., Deinum, J. F., Hofman, W. H. A., & Buitink, J. (2007). Teacher education in schools: an international comparison. *European Journal of Teacher Education*, 30, 151–173.
- Maaranen, K., Kynäslähti, H., & Krokfors, L. (2008). Learning a teachers work. *Journal of Workplace Learning*, 20, 133–145. doi:10.1108/13665620810852287.
- Margerum-Leys, J., & Marx, R. W. (2004). The nature and sharing of teacher knowledge of technology in a student teacher/mentor pair. *Journal of Teacher Education*, 55, 421–437.
- Marland, P. (2001). Teachers' practical theories: implications for teacher development. In Y. C. Cheng, M. M. C. Mok, & K. T. Tsui (Eds.), *Teaching effectiveness and teacher development: Towards a new knowledge base* (pp. 165–183). Dordrecht: Springer Publishers.
- Marsick, V. J. (2009). Toward a unifying framework to support informal learning theory, research and practice. *Journal of Workplace Learning*, 21, 265–275.
- Marsick, V. J., & Watkins, K. (1987). *Informal and incidental learning in the workplace*. London: Routledge.
- Martin, A., & Russell, T. (2009). Seeing teaching as a discipline in the context of preservice teacher education: insights, confounding issues, and fundamental questions. *Teachers and Teaching*, 15, 319–331. doi:10.1080/13540600902875381.
- Merriam, S. B. (1998). *Qualitative research and case learning applications in education*. San Francisco: Jossey-Bass Publishers.
- Moore, D. T. (2004). Curriculum at work an educational perspective on the workplace as a learning environment. *The Journal of Workplace Learning*, 16, 325–340. doi:10.1108/13665620410550303.
- Munby, M., Russell, T., & Martin, A. K. (2001). Teachers' knowledge and how it develops. In V. Richardson (Ed.), *Handbook of research on teaching* (pp. 877–904). Washington, DC: U.S. Department of Education.
- Nieveen, N. (2007). Formative evaluation in educational design research. In T. Plomp, & N. Nieveen (Eds.), *An introduction to educational design research. Proceedings of the seminar conducted at the East China Normal University, Shanghai (PR China), November 23–26 2007* (pp. 89–101). Retrieved from [http://www.slo.nl/downloads/2009/Introduction\\_20to\\_20education\\_20design\\_20research.pdf#page=11](http://www.slo.nl/downloads/2009/Introduction_20to_20education_20design_20research.pdf#page=11).
- Nilsson, P., & Van Driel, J. (2010). Teaching together and learning together – primary science student teachers' and their mentors joint teaching and learning in the primary classroom. *Teaching and Teacher Education*, 26, 1309–1318. doi:10.1016/j.tate.2010.03.009.
- NVAO [Dutch Flemish Accreditation Organisation] (2009). *Success factors and threats related to the structural embedding of work-based teacher education in the Netherlands*. Presentation held on the concluding meeting of the evaluation of 54 'Opleiden in de School' partnerships, 16 December 2009. The Hague: NVAO.
- Parker-Katz, M., & Bay, M. (2008). Conceptualizing mentor knowledge: learning from the insiders. *Teaching and Teacher Education*, 24, 1259–1269. doi:10.1016/j.tate.2007.05.006.
- Plomp, T. (2007). Educational design research: an introduction. In T. Plomp, & N. Nieveen (Eds.), *An introduction to educational design research. Proceedings of the seminar conducted at the East China Normal University, Shanghai (PR China), November*

- 23–26 2007 (pp. 9–35). Retrieved from [http://www.slo.nl/downloads/2009/Introduction\\_20to\\_20education\\_20design\\_20research.pdf#page=11](http://www.slo.nl/downloads/2009/Introduction_20to_20education_20design_20research.pdf#page=11).
- Ragonis, N., & Hazzan, O. (2009). A tutoring model for promoting the pedagogical-disciplinary skills of prospective teachers. *Mentoring & Tutoring: Partnership in Learning*, 17, 67–82. doi:10.1080/13611260802658553.
- Streumer, J. N., & Kho, M. (2006). The world of work-related learning. In J. N. Streumer (Ed.), *Work-related learning* (pp. 3–49). Dordrecht: Springer.
- Strong, M., & Baron, W. (2004). An analysis of mentoring conversations with beginning teachers: suggestions and responses. *Teaching and Teacher Education*, 20, 47–57. doi:10.1016/j.tate.2003.09.005.
- Swennen, A., Jones, K., & Volman, M. (2010). Teacher educators: their identities, sub-identities and implications for professional development. *Professional Development in Education*, 36, 131–148.
- Taylor, S., & Bogdan, R. (1998). *Introduction to qualitative research methods* (3rd ed.). New York: John Wiley.
- Van Velzen, C., Bezzina, C., & Lorist, P. (2008). Partnerships between schools and teacher education institutes. In A. Swennen, & M. R. van der Klink (Eds.), *Becoming a teacher educator Theory and Practice for teacher educators* (pp. 59–73). Dordrecht: Springer Publishers.
- Van Velzen, C., & Volman, M. (2009). The activities of a school-based teacher educator: a theoretical and empirical exploration. *European Journal of Teacher Education*, 32(4), 345–367. doi:10.1080/02619760903262481.
- Wang, J., & Odell, S. J. (2002). Mentored learning to teach according to standards-based reform: a critical review. *Review of Educational Research*, 72, 481–546.
- White, S., Bloomfield, D., & Le Cornu, R. (2010). Professional experience in new times: issues and responses to a changing education landscape. *Asia-Pacific Journal of Teacher Education*, 38, 181–193. doi:10.1080/1359866X.2010.493297.
- Wong, H. K., Britton, T., & Ganser, T. (2005). What the world can teach us about new teacher induction. *Phi Delta Kappan*, 86, 379–384.
- Zeichner, K. (2010). Rethinking the connections between campus courses and field experiences in college- and university-based teacher education. *Journal of Teacher Education*, 61, 89–99. doi:10.1177/0022487109347671.