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The teacher educator as a role model

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Abstract

New visions of learning have entered education. This article discusses the consequences for teacher education, and examines modelling by teacher educators as a means of changing the views and practices of future teachers. The results of a literature search and a multiple case study on modelling are discussed. Both the literature search and the case study approach led to the conclusion that we have discovered what is almost a blank spot in both the body of knowledge on teacher education and the actual practices of many teacher educators. The article concludes with a discussion of ways to improve this situation.

1. Introduction

Most educationalists believe that the new visions of learning that have surfaced over the last decade should lead to important changes in teaching. This means that approaches are needed in teacher education that will help future teachers to translate such new views and theories about learning into actual teaching practices in the schools. However, review studies on the impact of teacher education on teachers' beliefs and behaviour show that the effects of teacher preparation are often meagre.

This study focuses on one important factor in teacher education, namely the exemplary role of teacher educators. Based on the idea that "teachers teach as they are taught" (Blume, 1971), the importance of modelling by teacher educators is discussed and different forms of modelling are

distinguished. By means of case studies we analysed the current practices of teacher educators in the Netherlands and showed that although an approach to reform based on the idea of modelling may be fruitful, at present one must have serious doubts about the competence of teacher educators to serve as role models in promoting new visions of learning.

1.1. New learning

Simons, Van der Linden, and Duffy (2000) discuss the new visions of learning that have surfaced over the last decade and summarise these under the umbrella term 'new learning'. As they conceptualise it, 'new learning' refers to "new learning outcomes, new kinds of learning processes, and new instructional methods both wanted by society and currently stressed in psychological and educational theory" (p. vii). Anderson (1989) mentions five dimensions on which such new views

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of learning differ from more traditional approaches to schooling:

(1) Development of flexible and decontextualised expertise rather than recall of facts and context-specific application of skills.
(2) The teacher's role in mediating learning rather than conveying information to students (cf. Brown, Collins, & Duguid, 1989).
(3) Students as active constructors of cognitive networks rather than receptors of information.
(4) A focus on defining and representing problems and different solutions, rather than on the application of algorithmic procedures and single 'correct' answers.
(5) A focus on the importance of social environments in which failure is accepted as a part of learning, self-regulated learning is valued (cf. Zimmerman, 2002) and other students are considered as resources for learning, as opposed to social environments which represent negative connotations concerning failure, a focus on teacher-directed learning, and a view of other students as hindrances to individual learning.

The translation of these five dimensions of a view of learning into teaching principles to be used in practice is complicated, and there is no general agreement on the best translation (MacKinnon & Scarff-Seater, 1997). Moreover, authors who criticise the ideas of new learning often warn against an extreme interpretation of the five dimensions, as this could cause the development of factual knowledge and skills to be neglected, teachers to become invisible and individual learning to disappear entirely (Marton & Entwistle, 1994; Van der Werf, 2005). In our view, however, such an extreme interpretation reflects an overly simplistic reversal of traditional educational practices. We believe that a new view of learning, as reflected in Anderson's five dimensions, has the potential to improve the quality of education. In fact, we believe that it is already having a positive influence on education. We also think that this should have consequences for teacher education. In this respect, we concur with Putnam and Borko (1997), who state that the new visions of learning differ significantly from the views underlying traditional educational practices, and that "for teachers to move successfully toward these new visions of classrooms will require in many cases major changes in their knowledge, beliefs, and practice" (p. 1224).

2. The impact of teacher education

When Putnam and Borko attempt to answer the question of whether teacher education is effective in supporting new learning, they first state that teacher education should be expected to deal with teachers in a way that is congruent with the new visions of learning. For example, teachers should be treated as active learners who construct their own under-standings. According to Putnam and Borko, although this has become almost a mantra in teacher education, the reality of practices in teacher education may be much more complicated than is often assumed. They mention that student teachers may have preconceptions that differ significantly from the views of learning and teaching that teacher educators wish to develop. They argue that this may distort the new ideas of learning, because student teachers will try to fit them into their existing views.

The analysis by Putnam and Borko leads to doubts about the effectiveness of present approaches in teacher education. Their work concurs with an extensive review study by Wideen, Mayer-Smith, and Moon (1998), who analysed the effectiveness of teacher education from a more general angle. Their conclusions are somewhat disturbing: in general, the impact of teacher education on practice seems to be meagre or, at best, somewhat unclear, due to all kinds of methodological flaws in the existing research. The same conclusion was drawn in the extensive review study carried out by the Division of Teaching and Teacher Education of the American Educational Research Association (Cochran-Smith & Zeichner, 2005). Large-scale research in Germany (e.g., by Müller-Fohrbrodt, Cloetta, & Dann, 1978) demonstrated that during their first year of teaching teachers experienced quite a distinct shift in attitude. As a result, their teaching was not in accord with the theory they had learned during their professional preparation. Even when effects are evident during the period of professional preparation, such as when new theoretical notions actually start to influence student teachers, such effects are usually "diluted" by the initial confrontation with actual teaching practice (Zeichner & Tabachnick, 1981).

Other underlying problems in teacher education that Wideen et al. distiled from their extensive review study are, for example, the overshadowing of the intended curriculum by the hidden curriculum, the practical pressure of the student teaching experience, conflicting expectations on the part of

mentor teachers and university-based teacher educators about the aims of the teaching practice experience, and incongruities between the preservice teaching experience and the first year in the profession. Having further analysed the emerging picture, both Wideen et al. and Putnam and Borko emphasise the central role of the *processes* going on within teacher education. They state that teacher-education programs are likely to have more impact if more attention is paid to these processes. Wideen et al. seek a means of improving teacher education using what they call an *ecological approach*, i.e., an approach "which focuses on the interrelations among and connectedness of organisms, objects, and particles and their contexts" (p. 168). The interrelation between processes that take place within teacher education and those that take place in schools may be an important example. More specifically, in teacher-education settings, the teacher educator is always an example of a teacher. In this respect, he or she may have a strong impact on the student teachers' views of teaching. As Blume (1971) states, "teachers teach as they are taught, and not as they are taught to teach". In the remainder of this article, we elaborate on this important aspect of the ecological approach to teacher education.

2.1. The teacher educator

One important player in the total ecology of teacher education, which Wideen et al. point to is the teacher educator. His or her role is crucial, but "one aspect of the ecosystem that appeared to be missing from the research was the teacher educators themselves. We found very few studies that thoughtfully examined the work of the university education professor (…)" (pp. 169–170). This concurs with Howey and Zimpher's (1990) statement that little is known about the characteristics of teacher educators, in spite of the fact that they are the people who are perceived to be responsible for the quality of teachers. Lanier and Little (1986) note that "teachers of teachers—what they are like, what they do, what they think—are systematically overlooked in studies of teacher education. Even researchers are not exactly sure of who they are" (p. 528).

We conclude that in order to improve the impact of teacher education, and especially the potential of teacher education to develop new visions of learning and the related practices in their graduates, one aspect that we have to look at carefully is the role of

the teacher educator and educational practices within teacher education itself. In this context, Ducharme (1993), Guilfoyle, Hamilton, Placier, and Pinnegar (1995), as well as Regenspan (2002), remind us of the complex dual role of teacher educators. Korthagen, Loughran, and Lunenberg (2005) elaborate on this when they say:

> Teacher educators not only have the role of supporting student teachers' learning about teaching, but in so doing, through their own teaching, model the role of the teacher. In this respect, the teacher education profession is unique, differing from, say, doctors who teach medicine. During their teaching, doctors do not serve as role models for the actual practice of the profession i.e., they do not treat their students. Teacher educators, conversely, whether intentionally or not, teach their students as well as teach about teaching.

It may well be that this aspect of teacher education is often overlooked as an important factor shaping teachers' beliefs and practices. If Wideen et al. (1998, p. 167) are right in their conclusion that the *processes* in teacher education may be more important than the *knowledge* that is provided to student teachers, the way teacher educators model the promotion of certain views of learning could be a more important factor in shaping teacher behaviour than the content of the messages they are sending, despite inherent differences between the university and school contexts. For example, the choices that teachers make with respect to Anderson's five dimensions express their views of learning. This is true at both the university and the school level. This view concurs with Russell (1997), who states, in reflecting on the way he teaches teachers, "How I teach IS the message".

We must not forget, however, that teacher educators face a difficult task: not only do they seldom receive any formal preparation for their profession (Wilson, 1990), they often work under heavy time pressure (Ducharme, 1993), and generally meet with little support from their environment (Guilfoyle et al., 1995). The expectations and assessments of the performance of teacher educators are often focused on aspects other than their teacher education practice, such as curriculum development or research output (Korthagen & Lunenberg, 2004). This can make it difficult for teacher educators to concentrate on the influence of their own teaching behaviour on the learning of student teachers.

Little is known about the question of whether teacher educators nevertheless succeed in serving as role models for their students, and whether they do so consciously.

2.2. Research question

As a consequence, the research question we wanted to explore was:

Do teacher educators model new visions of learning in their own practice?

To answer this question, we first studied the literature in order to develop a theoretical framework concerning modelling by teacher educators.

3. Modelling: a theoretical framework

We define modelling by teacher educators as the practice of intentionally displaying certain teaching behaviour with the aim of promoting student teachers' professional learning (cf. Gallimore & Tharp, 1992).

During a search of the available teacher education literature for *modelling by teacher educators* or *the teacher as a role model*, we discovered that very little has been written on the subject. An ERIC search using the broad term '*teacher educators*' showed that the literature dealing with the actual work of teacher educators is quite limited, a fact also noted by Ducharme (1993). Zeichner (1999) concludes that we actually know very little about what goes on inside teacher education programmes. In recent years, this situation has improved somewhat, for example, under the influence of the AERA Special Interest Group "Self-Study of Teacher Education Practices" (S-STEP). More publications based on self-studies or action research are now available (for a discussion of the similarities and differences between self-studies and action research, see Feldman, Paugh, & Mills, 2004). In these publications, teacher educators examine their own work (e.g., Hamilton, 1998; Loughran & Russell, 1997; Loughran & Russell, 2002; Russell & Kortha-gen, 1995; Hui, 2003). However, even in these publications, modelling seldom receives explicit attention, despite the fact that teacher educators constantly influence the learning of their students, even when they are displaying inadequate behaviour. Much has been written on modelling by mentor teachers, notably by researchers interested in how mentor teachers can serve as role models (e.g., Meijer, 1999). However, as mentioned above,

we were looking for discussions focusing on the university-based teacher educator as a role model. The lack of publications devoted to this key characteristic of teacher education highlighted an apparent lack of awareness amongst teacher educators of the influence they may have on their students, merely by being the teachers that they are. Nevertheless, the small amount of literature we did find helped us to frame our study and gave us more insight into goals, problems and forms of modelling by teacher educators.

3.1. Goals

In the literature, three important goals of modelling by teacher educators are mentioned.

In the first place, modelling by teacher educators can contribute to the professional development of student teachers (Griffin, 1999; Russell, 1999; Wood & Geddis, 1999). When their teacher educator models certain behaviour, student teachers not only hear and read about teaching, they *experience* it. However, as we shall see, that is not enough: student teachers must also be encouraged to focus on and to reflect on the meaning of this modelling, and how it can help them develop their own teaching.

Secondly, some authors see modelling by teacher educators as a way to change education. Stofflett and Stoddart (1994) state that the introduction of new practices into teacher education could help student teachers to become socialised in new ways of educational thinking and, on the basis of the examples experienced, make them better able to shape their own practices accordingly. Thus teacher education could not only have a greater impact on the preparation of student teachers, it could also play a leading role in the innovation of education. Russell (1999) emphasises: "If genuine change is to occur in schools, then those changes may have to occur FIRST in teacher education. It is certainly not enough for teacher educators to advocate changes that they have not achieved in their own practices".

Thirdly, modelling can also improve the teaching of teacher educators (Korthagen, 2002; Loughran, 1996; Smith, 2001; Wideen et al., 1998), by helping them to expand their pedagogical repertoire, to reflect on their own teaching, and to rethink the connection between the theory and the practice of teacher education.

The first two goals related to modelling by teacher educators concur with our line of reasoning in the initial sections of this article: modelling is generally

considered to serve both the goal of influencing individual teachers' beliefs and behaviour, and the goal of changing education as a whole. This could be an important factor in promoting 'new learning' in education. The third goal may be seen as an extension of the second: if education must change, then teacher education must change as well, and focusing on modelling can help teacher educators to change their own teaching practices.

3.2. Problems

The literature also notes a number of problem areas in modelling. Notably, there is a lack of the necessary knowledge and skills to use modelling effectively. For example, Wideen et al. (1998) state that teacher educators are uneasy with childish forms of role-playing (in which the students take the role of pupils) and cannot think of other ways of modelling. Moreover, often the teaching of teacher educators, like that of teachers, is based on implicit 'craft' and 'tacit knowledge' (Loughran, 1996; Smith, 2001; Wideen et al., 1998.). Thus another problem related to modelling appears to be the fact that teacher educators do not have the knowledge and skills to make their own teaching explicit and to link their pedagogical choices to public theory. Finally, Berry and Loughran (2002) explain that productive modelling presumes, among other things, that the teacher educator is prepared to show his or her own vulnerability, for example by questioning student teachers about their teaching behaviour, and encouraging them to ask questions about their own teaching practices. A tendency to shy away from the vulnerability which this brings with it can make modelling problematic.

3.3. Forms

3.3.1. Implicit modelling

Despite these problems, the slogans 'Teach as you preach' and 'Walk your talk' are popular among teacher educators, who seem to agree that they themselves should be good examples of the views they are trying to promote in their students. Through modelling, teacher educators can also make it clear that there are risks involved in experimenting, and that mistakes can be discussed. However, student teachers often do not learn a great deal from the examples of their teacher educators, because they do not recognise those examples. Indeed, Wubbels, Korthagen, and Broekman

(1997) found that the failure of teacher educators to draw explicit attention to their pedagogical choices meant that their student teachers' preconceptions about learning and teaching did not change significantly. In their study, Wubbels et al. showed that for this reason years of modelling new educational practices during a pre-service programme had a limited effect on the ultimate teaching of the graduates of this programme. Some of them had even been totally unaware of the modelling aspect of their teacher educators' behaviour.

Although the initial conclusion is that *implicit modelling* may be ineffective, we also recognise that a more thorough analysis of the benefits and limitations of implicit modelling is needed. For example, we assume that the time and degree of exposure, as well as the degree to which the modelling fits in with the student teachers' interests and concerns, all determine the final effects of implicit modelling in teacher education. However, we found no empirical studies that address the influence of these factors.

3.3.2. Explicit modelling

Wood and Geddis (1999) emphasise the importance of giving what they call 'meta-commentary'. They state that teacher educators should make explicit which choices they make while teaching, and why. Loughran (1996) describes two forms of explicit modelling: journal writing and 'thinking aloud'.

As Loughran explains, journal writing is a delayed form of clarifying pedagogical choices. He himself kept a journal of his sessions with the student teachers, which was available for students to read. Here is an example of a note that Loughran made during a session, while the student teachers were working in small groups:

> Typical, I've launched into class and I haven't said anything about your tape analysis assignment. (…) Now I'm in trouble because I'll need to squeeze it in before we finish but it'll probably take the edge off this good learning as you refocus (…) (p. 30).

'Thinking aloud', the other way of explaining pedagogical choices that Loughran describes, involves things like beginning a session by giving the reasoning behind the structure which is to be employed. Loughran found that such a preface can demonstrate the thinking of the teacher

educator about previous lessons, the intentions for the upcoming lesson, anticipation of the following lessons, and the connection between previous, upcoming and following lessons.

Loughran emphasises that thinking aloud cannot always be planned in advance. For example, he describes a discussion with his student teachers, during which he noticed that more and more of them were frustrated at not being able to respond to the statements of the others. He interrupted the session:

> Even though I was not sure what I would do about it, I was verbalizing the feelings that were influencing my thinking. I was able to describe the problem, reason through why it was a problem for me, and hypothesize about the likely outcomes if the discussion continued in the same way (pp. 33–34).

According to Loughran, thinking aloud ties together—in the 'action present'—the thinking of the teacher educator, the pedagogy used and the students' learning. Evaluations among his student teachers showed that most found his approach helpful, even though it was occasionally confusing. They reported learning effects on their teaching, their teaching strategies, and their own learning (Loughran, 1996).

Berry and Loughran (2002) developed a third form of explicit modelling, which makes use of co-teaching. One of them does the modelling, followed by a debriefing by the other. During the debriefing, situations from the sessions are reframed and underlying assumptions about practice discussed. The authors show that this kind of modelling provides optimal learning possibilities for student teachers, but that it is not something that comes naturally to teacher educators.

3.3.3. Explicit modelling and facilitating the translation to the student teachers' own practices

Although teacher educators may discuss their pedagogical choices with their student teachers, this does not necessarily mean that the students can make the translation to their own teaching. This is an important issue, for as Loughran (1997) notes, modelling behaviour is not meant to be copied by student teachers, rather it should give them an opportunity to experience and understand some likely learning outcomes of teaching. They should then take their own decisions as to how to incorporate those experiences and that understand-

ing into their own teaching. However, Loughran (1996) also emphasises that this involves a complex learning process. For this reason, teacher educators should try to help students to see how the teaching modelled can be applied to different teaching situations.

Smith (2001) emphasises the importance of this form of modelling, based on the observation that student teachers often do not learn a great deal from their mentor teachers. Smith found that mentors in schools seem to have difficulty putting their professional skills into words, no doubt because their practical knowledge is part and parcel of their teaching. Fragmentation, which is essential for explanation, seemed to be nearly impossible for most mentors in Smith's study. Like Slick (1998), she argues that the institution-based teacher educator should serve as a bridge, by articulating the tacit aspects of teaching and learning.

As noted above, Wood and Geddis (1999) explored the 'thinking aloud' manner of explaining pedagogical choices to their student teachers, a strategy which they call 'giving meta-commentary'. In this approach, which involves more than just providing commentary, they discuss how the comments are related to the teaching done in schools. We will now look at an example from their work.

Wood's role involved teaching and reflecting, while Geddis observed Wood and questioned him afterwards. (This is similar to the co-teaching approach employed by Loughran and Berry.) Wood's course started with several lessons about planning a lesson, asking good questions, and executing a lesson. Next, Wood gave a mathematics lesson at secondary school level, which formed the main focus of the study. During the first part of this lesson, his student teachers took the role of pupils. While Wood was teaching this lesson, he occasionally 'stepped outside' the lesson to provide meta-commentary. For example, he started his lesson by writing four simple sums on the blackboard, adding: 'You have two minutes'. Then he stepped out of the lesson to explain:

> You know what I'm going to do now? I'm going to take attendance. I didn't take attendance at the beginning of class. I got started right away when people came in … because I didn't want to waste two minutes taking attendance. Now I've got two minutes to myself when you've got something to do, and I'm going to take attendance. The point is, I don't want to eat up

good instructional time with administrivia. You know ... you can spend a huge amount of time on administrative tasks and then not have enough time to teach. So, you've got to manufacture times to do that stuff (p. 113).

Next, Wood demonstrated how to carry out an oral drill. Stepping out of the lesson again, he explained how, using a particular structure, he was able to ask each pupil a question within a time frame of five minutes, thus increasing their involvement. In the second part of the session, Wood's approach shifted to engaging the students in the kind of thinking he had been modelling, for example, by discussing possible ways of rank-ordering the questions he wanted to assign to the pupils.

However, this approach—combining explicit modelling with translation into student–teacher practice—has its limitations. Richardson (2001) points to findings showing that while some student teachers learn from practices in teacher education that can be used in the classroom, others may rely more on reflection on their own practices, preferring to develop possible alternatives on the basis of their own experiences. Nevertheless, we underscore the view of Loughran, Smith, Wood and Geddis that the advantages of illustrating pedagogical principles in action should be recognised, and that connecting learning experiences within teacher education to the student teachers' own practices can be beneficial.

3.3.4. Connecting exemplary behaviour with theory

As Munby, Russell, and Martin (2001) maintain, establishing links between practice and theory is one of the key issues in teacher education. This means that the next step in modelling is to move on from making useful 'tricks' explicit to student teachers to connecting exemplary behaviour with theory.

Again, it is interesting that the literature contains very few discussions on how teacher educators can connect exemplary behaviour with theory. One example is that of Smith (2001), who states:

Good teacher educators are reflective in their own work, working at a meta-cognitive level in their own teaching by explaining their actions in words in relation to why and how they teach as they do. This is articulation of the tacit knowledge of teaching, as it is a way to bring tacit information to the awareness of the learners (…) and (thus) to bring practical experiences to a theoretical level (pp. 11 and 13–14).

Bullough (1997) describes how such articulation helped his own development as a teacher educator. The principles of teacher education which he identified came, first, from thinking about his own practices and experiences as a teacher educator and, second, from public theory, which was important in nurturing and refining or, conversely, undermining the findings of his experiences. He states:

Public theory has on occasion helped me to know what to look for and helped me better to see, to anticipate consequences (p. 20).

Citing Mills (1959), Bullough and Pinnegar (2001) maintain that there is an important relationship between personal growth and understanding on the one hand, and a public discourse on that understanding on the other. Like many other researchers, including Kessels and Korthagen (1996), Bullough and Pinnegar distinguish between personal and public—academic—theory. Through the formulation of a personal theory, academic theory can be translated, so that it 'comes to life' and can ultimately influence educational practice. However, there are indications that teacher educators do not always raise their often-implicit personal theories to a conscious level, and that they tend to dismiss public theory:

There is good evidence to suggest that teacher educators similarly (as teachers) ignore public theory and instead rely on personal experience and implicit theory, on common sense (Bullough, 1997, p. 20, following Hatton, 1994 and Eisner, 1984).

The dismissal of public theory can be dangerous if student teachers start reinventing the wheel, on the basis of a limited theoretical framework. This is illustrated by the self-study of MacKinnon and Scarff-Seater (1997). They showed the pedagogical limitations of an approach to teacher education, which emanates "from misguided attempts to honour students' understandings at the expense of 'right answers'" (p. 39). They discovered that this starting point could lead to misunderstandings about 'theory', as the following example, written by one of their student teachers, shows:

Constructivism has taught me (that) I do not need to know any science in order to teach it. I will simply allow my students to figure things out for themselves, for I know there is no right answer (p. 53).

4. An empirical study: exploratory case studies

As noted in the previous section, only a limited number of publications devote explicit attention to modelling by teacher educators. Moreover, those that do are almost exclusively self-studies in which teacher educators write about their own work (e.g., Hamilton, 1998; Russell & Korthagen, 1995; Loughran & Russell, 1997, 2002). To make a start at deepening our knowledge of modelling, we carried out an exploratory research study into the practices of teacher educators in four Dutch institutions for teacher education, concentrating on the way they did or did not model 'new learning'.

The curricula of the participating teacher education institutes are shaped on the basis of a national framework for the teacher education curriculum in the Netherlands, which focuses on six areas of competence:

(1) The interpersonal relationships with pupils.
(2) The pedagogical relationship with pupils.
(3) Subject-related knowledge and didactical skills.
(4) Organizational knowledge and skills.
(5) Co-operation with colleagues and parents.
(6) Their own professional development and reflection.

Teacher education in the Netherlands takes place in colleges (4-year-programme for primary or secondary schools) and universities (a 1-year post-graduate programme for secondary schools).

College students spend at least half of the fourth year in a school, teaching. Students who enter the 1-year university programme already have a degree in a specific subject; during the 1-year programme they also spend half of the time in schools. All of the three types of programmes are represented in our study (see Table 1).

We conducted case studies of 10 teacher educators, observing the modelling types 2–4 distinguished in the previous section. We decided to leave type 1 (implicit modelling) out of our data collection and analysis, since very little is known about this type of modelling, and we also felt it could not be studied adequately within the context of our case studies. (For example, who decides whether observed implicit behaviour is indeed exemplary behaviour?) Another reason for focusing on modelling types 2–4 was that the literature suggests that these types are the most effective (see the previous section). In order to avoid bias, two researchers were involved in each case study. We analysed the findings of each case separately, and then drew up an overview of the 10 cases. Background information on the participants is given below, together with a description of the instrument used for the observations and the way the results were analysed.

4.1. Participants

The 10 teacher educators in our study, five women and five men, were invited to participate in

Table 1
Background of the participating teacher educators

Field/types of students	Number of teacher educators involved in the study	Subject	Previous teaching experience of the teacher educators	Experience as a teacher educator
Teacher education for primary education; 4-year course (students aged 18–22)	4 teacher educators	Pedagogy (2)	Primary and secondary school (3)	5 years or less (1)
		Physical education (2)	Secondary school (1)	More than 5 years (3)
Teacher education for secondary education; 4-year course (students aged 18–22)	2 teacher educators	Sciences (1)	Primary and secondary school (1)	More than 5 years (2)
		Art studies (1)	Secondary school (1)	
Teacher education for secondary education; 1-year course (students with a university degree)	4 teacher educators	Pedagogy (2)	Primary and secondary school (1)	5 years or less (2)
		German (1)	Secondary school (2)	More than 5 years (2)
		French (1)	None (1)	

this study by persons chairing their institutions, because of their interest in the professional development of teacher educators. Everyone invited agreed to participate. In an introductory meeting, the participants expressed a positive attitude towards the ideas of new learning, which they summarised as follows: 'Students should be able to define real life problems; together they should be able to find information for possible solutions to these problems; students should be able to reflect on their findings and be able to generalise these', and 'teachers should be supporting them in this process of enquiry learning and reflection'. All 10 of the teacher educators found it important that teacher educators should 'teach as they preach'.

The participants were informed beforehand about the purpose of the observations: to find out whether they used modelling as an instructional method for new learning and, if so, how. However, they were asked to act as they normally did during the observed lessons. In Section 6 we will see whether this was indeed the case.

The 10 participants represented various types of teacher educators. They ranged in age from about 35 to about 55. All of them regularly examined their professional development. During the period of the present study, six of them followed courses, attended conferences or went on a study trip. Most of them were involved in national discussions about the subject they teach.

The 10 teacher educators taught a variety of subjects. Four were associated with a teacher education institute for the training of primary school teachers; and they had all worked in primary or secondary schools before becoming teacher educators. One was a beginning teacher educator; the others had at least 5 years of experience. The remaining six teacher educators worked in a teacher education institute, training secondary school teachers. Two of them, both experienced teachers and teacher educators, taught in a 4-year programme for students aged 18–22. The other four taught in a 1-year, post-graduate teacher education programme for students with university degrees. Three of them were experienced teachers—and two were also experienced teacher educators. The third had two years' experience as a teacher educator; the fourth had a background in educational development, and at the time of the study had been a teacher educator for 4 years. For an overview, see Table 1.

4.2. Instrument

We observed the ten teacher educators on two occasions, while they were actually teaching a group of student teachers.

The observer worked with a pre-tested list of areas of focal attention and a prescribed format. Representative examples of the points of attention were:

- Does the teacher educator question his or her students about their own teaching behaviour?
- Do the student teachers question the teacher educator about his or her teaching behaviour?
- Does the teacher educator connect his or her teaching behaviour with the teaching practice of the student teachers?
- Do student teachers connect the teacher educator's behaviour with their own school practice?
- Does the teacher educator connect teaching and learning situations in the teaching session with theoretical notions?

In examining each of these points we focused on issues related to new learning. Anderson's five dimensions (see above) served as indicators guiding our observations.

Each time an item related to both modelling and new learning was observed during the teaching session, the observer described in detail the words and actions of the teacher educator and the student teachers, recording them in two parallel columns, in order to make the interaction explicit. In this way, we arrived at an overview of all explicit modelling situations in the 20 teaching sessions observed.

4.3. Analysis

The findings were analysed in two separate stages. First we analysed each case to identify situations in which the teacher educator:

- modelled teaching new learning explicitly,
- modelled teaching new learning explicitly, and also made the link to the student teacher's own practice,
- connected his or her exemplary behaviour with theory.

The results of the analysis were discussed with the teacher educator ('member check'; see Merriam, 1998). This gave the teacher educators an opportunity

to correct factual mistakes, add information, and offer alternative interpretations if they wished. Next, we planned a careful reflection per case by the two researchers involved (Day, 1999), weighing the credibility of the alternative interpretations. However, as we will see in the next section, the findings were so meagre that the discussions with the participating teacher educators differed substantially from the original plan (see below).

5. Findings: modelling in practice

5.1. Explicit modelling of teaching new learning

The results of our observations indicate that explicit modelling is not common among teacher educators. In the teaching sessions of four of the teacher educators, no instances of explicit modelling of visions of new learning were recorded. This group consisted of the two teacher educators who taught pedagogy at an education institute for primary teachers, one who taught a science methods course in a 4-year programme at an institute for secondary teacher education, and one who taught a French methods course in a 1-year programme at an institute for secondary teacher education institute. Three of them were highly experienced teacher educators.

In the 12 teaching sessions of the other six teacher educators, we found a total of 11 instances of explicit modelling. Two examples:

> Bill is a beginning physical education teacher educator at a teacher education institute for primary education. In the observed lessons his student teachers are actively involved, for example by designing and trying out different tracks (to be used inside and outside) that stimulate pupils to use diverse muscles groups. Bill helps and corrects the student teachers where necessary. Finishing the lesson, he explicitly models how he reflects on his own learning experiences during the session and what knowledge he has built: "I'm more satisfied about this lesson than I was about the previous one, because everybody got involved. A lot of creative ideas were generated".

> Rudolph, an experienced teacher educator, teaches pedagogogy at a one-year course for post-graduate students who want to become secondary school teachers. In one of the observed lessons, the first part has taken more time than he

expected, and halfway through the lesson Rudolph discovers he does not have enough time left to carry out the programme about differentiation as planned. He decides to model explicitly that this is a common problem in teaching new learning: "I want too much". Next he explains to his student teachers how he will solve the problem here and now. Instead of having everybody do the complete program, he will split the class up into small groups; each group will do one part of the programme and than report to each other. He then makes a connection with a previous lesson, in which he encountered a similar problem: "I have already learned that I want to cover too much literature, so today you will only get one article to study. Students who want more background information can put their name on a list".

In these two examples, as in almost all the 11 other instances, the teacher educator initiates the explanation of his or her modelling behaviour. This is unplanned and done more or less in passing.

The two examples show teacher educators who are responsive to opportunities for learning experiences, and are able to capitalise on those opportunities. In fact, their actions are related to Anderson's dimensions 2, 3, and 5 (see Section 1.1), but such underlying notions are not made explicit.

Planning explicit modelling as a teaching method does not guarantee its effectiveness, as demonstrated by Ron's attempt to show his student teachers what happens if you do not take into account differences between pupils.

> Ron is in his third year of teaching a one-year course for post-graduate students who want to become secondary school teachers. To get them actively involved, in one of the observed lessons Ron asks the student teachers, who all have a foreign language background, to translate a sentence into German. Some student teachers have never studied German, others hold a degree in German. Next, he asks the student teachers to write down how a teacher can best handle such differences. The student teachers are unable to make the connection between their previous experience as students with different levels of knowledge of German and Ron's request to adopt the perspective of a teacher faced with such differences. Ron decides to skip this task and go on to the next one.

It is worth noting that Ron does not use this event to model explicitly that it is not always easy to organise learning experiences that help learners to build up personal knowledge representations. He could have asked his student teachers why this approach was not successful. In that way he would have involved them even more (in accord with Anderson's dimensions 2 and 3), he would have focused on defining and representing a problem (Anderson's dimension 4), and he would have shown that failure is a part of learning (Anderson's dimension 5), even for teacher educators. However, this would have meant showing his vulnerability, which—as we have seen—is not easy.

5.2. Explicit modelling and facilitating the translation to the student teachers' own practices

Four of the six teacher educators who displayed instances of explicit modelling also displayed the second form of modelling distinguished in the section on Theoretical Framework: an attempt to help students translate the behaviour that was modelled to their own teaching. The following examples are taken from Esther's teaching sessions (physical education).

> Esther is an experienced physical education teacher educator at a teacher education institute for primary education. She is convinced that student teachers learn best as they experience what it is to be a teacher or how a pupil sees a teacher, and she designs her lessons along these lines. In one of the observed lessons, she participates in the warming-up at the start of her lesson. Afterwards, she explains: "By joining in, you're setting an example, but this has its down side: you may be so out of breath that you can't explain what you're doing!"

In the second example taken from Esther's teaching sessions, the connection she made between herself as a role model and the student teachers' practices started the other way around.

> Esther's students try out a play. The student teacher playing the role of the pupil does not follow the rules. The student teacher playing the teacher becomes involved in a discussion with this 'pupil'. Afterwards Esther asks: "What do you think I would have done in such a situation?"

The first example of Esther's practice was planned, as was the following example, observed during one of Anne's teaching sessions:

> Anne is an experienced teacher educator at a one-year course for post-graduate students who want to become secondary school teachers. In one of the observed lessons, the theme is badgering. She asks the students to write down their questions about badgering. Then she starts a discussion about the questions. Halfway through the discussion, she remarks: "This is a brainstorming session; you can do this with your pupils, but not in all classes. The pupils have to be disciplined". Next, the students have to organise the questions and answers according to certain themes. After thirty minutes, Anne remarks: "Did you notice that this exercise took only half an hour? Using this method, you get everybody in the class to focus on a particular problem".

We also found a few examples of an apparently spontaneous response to possibilities for learning experiences.

> William is an experienced teacher educator in art studies at a teacher education institute for secondary education. He encourages the student teachers to gather the information they need by giving them task such as: "What do you need to know before you can design a bridge?" "What do you need to know before you can design a product for mass production?" He regularly connects what happens in a lesson with secondary-school practice. For example, when the students were working on a clay model, he explained: "This task can be done by fourteen-year-olds, but it is too difficult for younger pupils".

Our observations show that although four of the 10 teacher educators tried to help students apply the teaching that had been modelled (corresponding to Anderson's dimensions 2 and 3) to their own practices in school, there was no further discussion on how this could best be done. The examples we encountered were relatively simple. The influence of the personal characteristics of the learners and the context in which these student teachers teach were not taken into account in the transition from a practical situation within teacher education to the actual classroom. Student teachers were not encouraged to reflect or to make their own decisions

on how to translate that particular situation into their own teaching.

5.3. Connecting exemplary behaviour with theory

The third form of modelling we identified consisted in linking exemplary behaviour with theory, as a means of rising above the level of making useful 'tricks' explicit to student teachers. In the teaching sessions that we observed, none of the 10 teacher educators—not even the six who modelled explicitly—linked their practices with theoretical notions. In many of the situations that we observed, it would not have been too difficult to do so. In the example cited above, in which William remarked, '*This task can be done by fourteen-year-olds, but it is too difficult for younger pupils*', the teacher educator could have mentioned theory on developmental psychology to support his statement, and he could have told something more about this theory. In our view, that would have deepened the student teachers' professional learning.

The finding that the teacher educators did not link their practice with theory is remarkable in view of the fact that establishing such links is a key issue in teacher education. This disturbing finding seems to confirm Bullough's statement (1997) that teacher educators tend to ignore public theory, relying instead on common sense, personal experience and implicit theory.

5.4. Member check

As noted in Sect 4, we discussed the outcomes of our study with the participating teacher educators. Not only the researchers, but also the teacher educators were surprised by the outcomes. They did not question our findings, but they did report that their participation in the research project had helped them to improve their modelling:

- By participating in this study, I became more conscious of my own pedagogical approach, so that I am now better able to explain it to my students.
- I became more conscious of the differences between my students' frames of reference and my own.
- My ideas about teacher education did not change, but my practices did.

- After participating in the study, I now pay more attention to congruence [between views and behaviour].

6. Conclusions and discussion

The question we explored in our study was: Do teacher educators model new visions of learning in their own practice? As we explained in the first part of this article, this question was based on the suggestion from the literature that modelling can be a powerful instrument, but also that its potential to enhance the impact of teacher-education programs on the learning processes of student teachers is often neglected.

On the basis of the small body of literature we were able to find on the subject, four forms of modelling were distinguished: (1) implicit modelling, which seems to have a low impact; (2) explicit modelling; (3) explicit modelling and facilitating the translation into the student teachers' own practice; (4) connecting exemplary behaviour to theory.

We then carried out case studies focusing on the practices of 10 teacher educators within three types of institutions for teacher education. The goal of the case studies was to establish whether the teacher educators used modelling forms 2–4 as a means of promoting new visions of learning among their student teachers and, if so, how they did this modelling. Our findings are summarised in Table 2.

Of the four teacher educators who did not model at all, three had been teacher educators for more than 5 years. Most of the 11 examples of modelling we identified in the lessons of the other six teacher educators seemed to have been unplanned. The teacher educators apparently took advantage of opportunities for learning that suddenly presented themselves during the teaching sessions.

On the basis of the literature search and our exploratory study, there appears to be little or no recognition of modelling as a teaching method in teacher education. The findings of our study confirm the problems cited in the literature, namely that teacher educators apparently lack the knowledge and skills needed to use modelling in a productive way, to make their own teaching explicit, and to rethink the connection between their teacher education practices and public theory. Our study seems to indicate that such knowledge and skills do not automatically develop over the years: experience as a teacher educator does not necessary lead to more or better modelling.

Table 2
Results of the case studies

Forms of modelling	Number of the teacher educators (total: 10) who displayed each form of modelling	Number of examples of the form of modelling found in the 20 teaching sessions observed
Explicit modelling	6	11 examples
Explicit modelling AND facilitating the translation into the student teachers' own practices	4 of the 6 teacher educators who modelled explicitly	6 out of the 11 examples of explicit modelling
Connecting exemplary behaviour with theory	0	0

The outcomes of our study may even be overly favourable, as the teacher educators participating in our study were informed about the purpose of the observations, and reported that by participating they had become aware of their own pedagogical choices and the degree to which they acted in accordance with their views of learning and teaching. Our conclusions indicate that the possibilities for preparing student teachers for new visions of learning in schools, as defined by Anderson's (1989) five dimensions, are not being fully exploited.

The disturbing finding that teacher educators tend to ignore public theory in their teaching concurs with the results of many other studies, which indicate that this is the case for teachers in general. Thus, the problem may lie not so much in the fact that they do not make the connection with theory explicit to their student teachers, but that they do not make use of public theory when making decisions about their behaviour, relying more on common sense, as many teachers are inclined to do. One important explanation is that during teaching, teachers have little time to make conscious decisions and to relate their behaviour to theory (Eraut, 1995; Korthagen et al., 2001, p. 178). This could well be the case among teacher educators as well.

This raises the question of how teacher educators can be encouraged to use modelling more frequently and more systematically. As we suggested in the introduction, one reason for the neglect of modelling in teacher education could be that both the expectations about, and the assessments of, the performance of teacher educators often focus on aspects other than their practice. Moreover, as Loughran (1997) emphasises, modelling implies vulnerability, and this is something which teacher educators, who are often seen as experts, find quite

difficult. A third reason is perhaps the fact that the old apprenticeship model of teacher training has acquired something of a bad reputation, and that teacher educators are anxious to avoid any suggestion that they are trying to get their student teachers to imitate their behaviour.

The question that now presents itself is how this situation can be improved, in order to ensure that modelling is given its rightful place within teacher education, while avoiding the negative aspects of the apprenticeship model?

Menges (1994) describes one important learning method for teacher educators as follows: teacher educators should make use of a conceptual framework to examine their personal theories and do research in their classrooms. In a sense, the present study is unwittingly an example of this approach. The participating teacher educators reported that they became more aware of their own pedagogical choices and the relationship between their beliefs and their behaviour. This type of enquiry into one's own learning and teaching is also strongly advocated by Zeichner (1995), on the basis of an analysis of his own development as a teacher educator, and by Elliott (2003) in his reflection on a collection of case studies in teacher education, based on action research. We believe that self-studies and action research can indeed encourage modelling in teacher education, provided this issue is one of the focal points. When teacher educators work together and question each other during lessons, this can also encourage explicit modelling, as Berry and Loughran (2002) have demonstrated. Putnam and Burko (2000) stress the importance of a discourse community, whose members can take advantage of each other's expertise to create new insights. Indeed, as Terwel (1994) found, without the support of others

learners tend to stick to a limited number of theoretical perspectives, rather than deepening their knowledge by 'knowledge objects', i.e., on something that is not yet there (cf. also Marton & Entwistle, 1994). According to Menges (1994), working in small groups, sharing ideas, and reviewing one's own standards together with colleagues are all major learning opportunities for teacher educators. Bal et al. (2002) confirmed these findings: teacher educators who analyse each other's practices with the help of a protocol can learn a great deal from one another.

Last year we conducted a small experiment along these lines, which we hope to report on soon. We organised a one-day professional development course for a small group of teacher educators. By using videotapes of their teaching education practice as an incentive to analyse possibilities for modelling together with the ensuing problems, and by modelling different forms of modelling ourselves and connecting them with theory, we helped them to draw up a plan for using modelling in their practices. The observations of these practices after our course showed that all participants were able to do this. Therefore, we believe that this approach could be promising.

In conclusion, not only self-studies, but also observations and discussions of each other's practices can promote modelling by teacher educators, especially if this is done in a structured way, as in a professional development course. At the moment, however, these ideas are largely possibilities rather than realities. When it comes to using modelling new learning in teaching education, teacher educators are apparently still at the beginning of a long and challenging path.

We must emphasise that research in this area is likewise in the initial stages. The study reported on here is a limited exploration of what appears to be a blank spot in the research literature. We hope that it will encourage researchers in other countries to explore whether our findings reflect the situation elsewhere in the world.

References

Anderson, C. W. (1989). Implementing instructional programs to promote meaningful, self-regulated learning. In J. Brophy (Ed.), *Advances in research on teaching: Teaching for meaningful understanding and self-regulated learning*, Vol. 1 (pp. 311–343). Greenwich, CT: JAI Press.

Bal, E., Lunenberg, M., Swennen, A., Tanja, W., & Wetsteijn, T. (2002). Lerarenopleiders onderzoeken hun eigen praktijk [Teacher educators study their own practice]. *VELON Tijdschrift voor Lerarenopleiders*, 23(3), 27–34.

Berry, A., & Loughran, J. (2002). Developing an understanding of learning to teach in teacher education. In J. Loughran, & T. Russell (Eds.), *Improving Teacher Education Practices Through Self-study* (pp. 13–29). London/New York: RoutledgeFalmer.

Blume, R. (1971). Humanizing teacher education. *PHI Delta Kappan*, 53, 411–415.

Brown, J. S., Collins, A., & Duguid, P. (1989). Situated cognition and the culture of learning. *Educational Researcher*, 18(1), 32–42.

Bullough, R. V. (1997). Practicing theory and theorizing practice in teacher education. In J. Loughran, & T. Russell (Eds.), *Teaching about teaching* (pp. 13–31). London/Washington, DC: Falmer Press.

Bullough, R. V., & Pinnegar, S. (2001). Guidelines for quality in autobiographical forms of self-study research. *Educational Researcher*, 30(3), 13–21.

Cochran-Smith, M., & Zeichner, K. M. (Eds.). (2005). *Studying teacher education: The report of the AERA panel on research and teacher education*. Mahwah, NJ: Lawrence Erlbaum.

Day, C. (1999). *Developing teachers: The challenges of lifelong learning*. London: Falmer Press.

Ducharme, E. R. (1993). *The lives of teacher educators*. New York: Teachers College Press.

Eisner, E. (1984). Can educational research inform educational practice? *Phi Delta Kappan*, 65(7), 447–452.

Elliott, J. (2003). Collecting, analyzing, and reporting data in action-research: Some methods and techniques used in the assessment for teaching and learning project at HKIEd. *Asia-Pacific Journal of Teacher Education & Development*, 6(1), 111–124, special issue (D. Grossman & M. F. Hui (Eds.)).

Eraut, M. (1995). Schön shock: A case for reframing reflection-in-action? *Teachers and Teaching: Theory and Practice*, 1(1), 9–22.

Feldman, A., Paugh, P., & Mills, G. (2004). Self-study through action research. In J. Loughran, M. L. Hamilton, V. Laboskey, & T. Russell (Eds.), *International Handbook of Self-Study of Teaching and Teacher Education Practice* (pp. 943–978). Dordrecht/Boston/London: Kluwer Academic Publishers.

Gallimore, R., & Tharp, R. (1992). Teaching mind in society: Teaching, schooling, and literate discourse. In L. C. Mol (Ed.), *Vygotsky and education: Instructional implications and applications of sociohistorical psychology* (pp. 175–205). Cambridge: Cambridge University Press.

Griffin, G. A. (1999). Changes in teacher education: Looking to the future. In G. A. Griffin (Ed.), *The education of teachers* (pp. 1–17). Chicago: The University of Chicago Press.

Guilfoyle, K., Hamilton, M. L., Pinnegar, S., & Placier, M. (1995). Becoming teachers of teachers: The paths of four beginners. In T. Russell, & F. Korthagen (Eds.), *Teachers who teach teachers* (pp. 35–55). London/Washington, DC: Falmer Press.

Hamilton, M. L. (1998). *Reconceptualizing teaching practice: Self-study in teacher education*. London/Bristol: Falmer Press.

Hatton, E. (1994). Work experience as a solution to the problems of relevance and credibility in teacher education. *Australian Journal of Education*, 38(1), 19–35.

Howey, K. R., & Zimpher, N. L. (1990). Professors and deans of education. In W. R. Houston (Ed.), *Handbook of Research on Teacher Education* (pp. 349–390). New York: Macmillan.

Hui, M. F. (2003). Cultivating creativity in the classroom: assessment for improving teaching and learning. *Asia-Pacific Journal of Teacher Education & Development*, 6(1), 69–86 special issue (D. Grossman & M. F. Hui (Eds.)).

Kessels, J. P. A. M., & Korthagen, F. A. J. (1996). The relationship between theory and practice: Back to the classics. *Educational Researcher*, 25, 17–22.

Korthagen, F. A. J. (2002). *De professionalisering van lerarenopleiders in Nederland* [The professionalisation of teacher educators in The Netherlands]. Den Haag: Landelijk Programmamanagement, Educatief Partnerschap HBO-raad.

Korthagen, F., & Lunenberg, M. (2004). Links between self-study and teacher education reform. In J. Loughran, M. L. Hamilton, V. Laboskey, & T. Russell (Eds.), *International handbook of self-study of teaching and teacher education practice*. Dordrecht/Boston/London: Kluwer Academic Publishers.

Korthagen, F. A. J., Loughran, J., & Lunenberg, M. (2005). Teaching teachers: Studies into the expertise of teacher educators. *Teaching and Teacher Education*, 21(2), 107–115.

Korthagen, F., Kessels, J., Koster, B., Lagerwerf, B., & Wubbels, T. (2001). *Linking practice and theory: The pedagogy of realistic teacher education*. Mahwah, NJ: Erlbaum.

Lanier, J., & Little, J. (1986). Research in teacher education. In M. C. Wittrock (Ed.), *Handbook of research on teaching* (pp. 527–569). New York: Macmillan.

Loughran, J. (1996). *Developing reflective practice: Learning about teaching and learning through modelling*. London/Washington, DC: Falmer Press.

Loughran, J. (1997). Teaching about teaching: Principles and practice. In J. Loughran, & T. Russell (Eds.), *Teaching about teaching* (pp. 57–70). London/Washington, DC: Falmer Press.

Loughran, J., & Russell, T. (1997). *Teaching about teaching*. London/Washington, DC: Falmer Press.

Loughran, J., & Russell, T. (2002). *Improving teacher education practices through self-study*. London/New York: RoutledgeFalmer.

MacKinnon, A., & Scarff-Seater, C. (1997). Constructivism: Contradictions and confusions in teacher education. In V. Richardson (Ed.), *Constructivist teacher education* (pp. 38–56). London/Washington, DC: Falmer Press.

Marton, F., & Entwistle, N. (1994). Knowledge objects: Understandings constituted through intensive academic study. *British Journal of Educational Psychology*, 46, 161–178.

Menges, R. J. (1994). Promoting inquiry into one's own teaching. In K. R. Howey, & N. L. Zimpher (Eds.), *Informing Faculty Development for Teacher Educators* (pp. 51–97). Westport: Ablex Publishing.

Merriam, S. B. (1998). *Qualitative research and case learning applications in education*. San Francisco: Jossey-Bass Publishers.

Meijer, P. C. (1999). *Teachers' practical knowledge: Teaching reading comprehension in secondary education*. Leiden: ICLON.

Mills, C. W. (1959). *The sociological imagination*. New York: Oxford University Press.

Müller-Fohrbrodt, G., Cloetta, B., & Dann, H. D. (1978). *Der Praxisschock bei jungen Lehrern [The transition shock in beginning teachers]*. Stuttgart: Klett.

Munby, H., 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: AERA.

Putnam, R. T., & Borko, H. (1997). Teacher learning: Implications of new views of cognition. In B. J. Biddle, T. L. Good, & I. F. Goodson (Eds.), *International handbook of teachers and teaching*, Vol. 2. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Putnam, R. T., & Borko, H. (2000). What do new views of knowledge and thinking have to say about research on teacher learning? *Educational Researcher*, 29(1), 4–15.

Regenspan, B. (2002). Toward parallel practices for social justice-focused teacher education and the elementary school Qclassroom: Learning lessons from Dewey's critique of the Qdivision of labor. *Teaching and Teacher Education*, 18(5), 577–591.

Richardson, V. (2001). Teacher change. In V. Richardson (Ed.), *Handbook Of Research on Teaching* (pp. 905–950). Washington, DC: AERA.

Russell, T. (1997). How I teach IS the message. In J. Loughran, & T. Russell (Eds.), *Purpose, passion and pedagogy in teacher education* (pp. 32–47). London/Washington, DC: Falmer Press.

Russell, T. (1999). *The challenge of change in (teacher) education*. Keynote address to 'The challenge of change in education' conference, Sydney.

Russell, T., & Korthagen, F. (1995). *Teachers who teach teachers*. London/Washington, DC: Falmer Press.

Simons, R. J., Van der Linden, J., Duffy, T. (Eds.) (2000). *New learning*. Dordrecht, The Netherlands: Kluwer Academic Publishers.

Slick, S. K. (1998). The university supervisor: A disenfranchised outsider. *Teaching and Teacher Education*, 14/8, 821–834.

Smith, K. (2001). *Professional knowledge of teacher educators*. Paper presented at the AERA-conference.

Stofflett, R. T., & Stoddart, T. (1994). The ability to understand and use conceptual change pedagogy as a function of prior content learning experience. *Journal of Research in Science Teaching*, 31(1), 31–51.

Terwel, J. (1994). *Samen onderwijs maken [Making education together]*. Groningen: Wolters-Noordhoff.

Van der Werf, M. P. C. (2005). *Leren in het studiehuis: Consumeren, construeren of engageren? [Learning in the "study-house": Consuming, constructing or engaging?]*. RUG (inaugural lecture): Groningen.

Wideen, M. F., Mayer-Smith, J., & Moon, B. (1998). A critical analysis of the research on learning to teach: Making the case for an ecological perspective on inquiry. *Review of Educational Research*, 68(2), 130–178.

Wilson, J. D. (1990). The selection and professional development of trainers for initial teacher training. *European Journal of Teacher Education*, 13(1/2), 7–24.

Wood, E., & Geddis, A. N. (1999). Self-conscious narrative and teacher education: Representing practice in professional course work. *Teaching and Teacher Education*, 15, 107–119.

Wubbels, T., Korthagen, F., & Broekman, H. (1997). Preparing teachers for realistic mathematics education. *Educational Studies in Mathematics, 32*, 1–28.

Zeichner, K. (1995). Reflections of a teacher educator working for social change. In T. Russell, & F. Korthagen (Eds.), *Teachers who teach teachers* (pp. 11–24). London: Palmer Press.

Zeichner, K. (1999). The new scholarship in teacher education. *Educational Researcher, 28*(9), 4–15.

Zeichner, K., & Tabachnik, B. R. (1981). Are the effects of university teacher education washed out by school experiences? *Journal of Teacher Education, 32*, 7–11.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. *Theory Into Practice, 41*(2), 64–72.