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# Chapter 8

## Pedagogy of Teacher Education

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### Introduction

For a long time educational researchers have been searching for the Holy Grail: an effective method of educating teachers which positively influences daily teaching practices in schools (Loughran, 2006). A lot of knowledge is available about how teaching could become more effective at influencing student learning, and it would be ideal if this knowledge would be applied by teachers. However, an overwhelming number of studies have shown that the impact of teacher education on the actual teaching in schools has often been limited (e.g. Robinson, 1998; Wideen, Mayer-Smith, & Moon, 1998). This has elicited the question of how to find an effective pedagogy of teacher education, i.e. the pedagogy used in the teaching of teachers.

This chapter focuses on this topic, and describes a review of a large number of studies on the pedagogy of teacher education. This term did not surface in the literature until the turn of the century, when it was suddenly used in various book titles (Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001; Loughran, 2006; Russell & Loughran, 2007). Many researchers started to emphasize that teaching about teaching requires specific pedagogical approaches that are fundamentally different from those guiding teaching in schools.

Murray and Male (2005) refer to this difference with the terms *first and second order teaching*. First order teaching refers to the teacher who teaches students in schools, and second order teaching to the teacher educator who teaches (prospective) teachers. Other researchers agree that these two levels are fundamentally different in nature, for example Berry (2007, 2009), Harrison and McKeon (2008), and Swennen, Jones, and Volman (2010). This chapter will focus on the second level, i.e. second order teaching.

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Loughran (2006) describes this second level as *teaching about teaching*, and states that this should promote *learning about teaching*. This redirects our attention towards the topic of teacher learning. Ideally, any pedagogy of teacher education should build on a view of teacher learning, preferably a view grounded in research. It is interesting that in the literature on approaches and strategies in teacher education, this underlying view is seldom made explicit, let alone the underlying view of the learning of the *teacher educators* needed to enact a certain pedagogy in their teacher education practices. Actually, the whole topic of teacher learning has for a long time been almost discarded in educational research (Clarke & Hollingsworth, 2002). Without awareness of the difference between the learning of teachers and student learning in school, teaching teachers can become problematic. For example, an important aspect of the learning of adults is their need to see the practical utility of what they have to learn. This chapter briefly refers to aspects of teacher learning, but it is important to be aware that strong frameworks connecting a theory on teacher learning with pedagogies of teacher education are generally missing in the literature.

In trying to develop a picture of pedagogical approaches used in teacher education, two main problems are typically encountered. First, the research on teacher education is quite fragmented (Murray, Mitchell, & Nuttall, 2008), and the epistemological basis for teacher education research is weak (Özçinar, 2015). Second, the research literature is often quite vague about the specifics of strategies and techniques used by teacher educators. By the end of the previous century, Zeichner (1999) noted that until then little knowledge existed of what actually happened inside teacher education programmes. The reason apparently being that for a long time the work of teacher educators was considered to be simply ‘teaching’, which was often synonymous to lecturing. Hence, only relatively recently has the insight emerged that a pedagogy of teacher education should be different from the traditional mainstream lecturing approach in academia, and that teacher educators should show exemplary pedagogical behavior. Hence, most beginning teacher educators struggle with finding adequate pedagogical strategies, while being confronted with the need for an identity change from teacher to teacher educator (Boyd & Harris, 2010; Murray & Male, 2005; Swennen et al., 2010), as, for example, was demonstrated in Russell and Korthagen’s (1995) collection of chapters by teacher educators who reflected on their own development.

It is thus an important step forward for education in general that the pedagogy of teacher education has begun to attract much more attention. An important factor in this development has been the *self-study movement*, i.e. the enormous growth of studies in which teacher educators research their own practices. The publication of the *International Handbook on Self-Study of Teaching and Teacher Education Practices* (Loughran, Hamilton, LaBoskey, & Russell, 2004) was a landmark in this development.

Taken together, the pedagogy of teacher education has generally become a field of its own. In fact, until now so many publications have been published in this area that it is impossible to cover every topic that has surfaced. When composing this chapter, choices had to be made, and so only general trends and overall lines of

research are able to be summarized and then illustrated by specific examples from the literature. The chapter therefore focuses on principles of practice that exceed subject specific pedagogies, i.e. going beyond the details of mathematics teacher education, language teacher education and so forth, or the development of pedagogical content knowledge. Essentially then, the chapter will focus on generic principles of teaching teachers that can be applied in a variety of international contexts, and across the education of both primary and secondary education teachers.

The topic of the pedagogy of teacher education will be elaborated in three main parts: research on *general views/models of teacher education*; research on *concrete strategies/techniques* that can guide teacher educator behavior; and, a section on *conclusions and discussion*.

The criterion for including a view or model of teacher education in the second section and not in the third section, was that it encompasses more than just one specific strategy or technique, but consists of a set of strategies and pedagogical methods, based on an explicit set of coupled “principles of practice” (Loughran, 2006). In section “[Specific pedagogical strategies and techniques](#)”, more specific strategies and techniques will be discussed. They are categorized into a limited number of characteristic topics.

## General Views/Models of Teacher Education

### *Early Approaches to the Pedagogy of Teacher Education*

As Labaree (2008) pointed out, teacher education has a long tradition. Before the nineteenth century, the idea of educating teachers was unknown. Lucas (1999) noted that in those days “the thought or expectation that a classroom pedagogue might require formal preparation for the lowly task of instructing schoolchildren would have been quite unthinkable” (p. 3). During the nineteenth century in many countries the first formal teacher preparation programmes surfaced in the form of *normal schools*, first in France, and later in other countries. Some normal schools prepared for teaching in primary schools, while others, especially in Europe, focused on secondary education or on both.

Practice-based supervision on the basis of an *apprenticeship model* (Dennen, 2004) was a major ingredient of the normal schools programmes. Already in early debates about the programme content of these normal schools, a tension was visible between a focus on academic knowledge and practical utility (Labaree, 2008). Ever since, this tension between theory and practice has remained a central feature of both pre-service and in-service teacher education world-wide (Lanier & Little, 1986), both in university-based schools of education that evolved later, and in colleges of education that were founded in many places outside universities.

The tension between theory and practice became even more tangible when the knowledge on teaching increased through academic research. Davey (2013) describes how this led to the ‘academization’ of teacher education. It also elicited

the question of how to help teachers translate academic knowledge on teaching to their own practices. According to Grossman (2005), one of the earliest lines of research focusing on a specific strategy in teacher education to help teachers make this translation, was aimed at the development of the *microteaching* approach. Microteaching was grounded in so-called process-product studies and focused on the identification of teaching behaviors that showed high correlations with learning outcomes. This led to the formulation of concrete skills that should be acquired by teachers and to the training of these skills through simplifying the complexities of regular teaching-learning processes (Perlberg, 1987). Teachers practised specific skills in simplified situations especially created for this purpose and received feedback on their use of the skills. This is how the preparation of teachers for their profession became known as *teacher training*.

As Grossman (2005) explains, many studies on microteaching showed that generally this training approach failed in reaching its goals. In a review study, Copeland (1982) concluded that teachers did not always use the skills learned during microteaching, although the approach might help them feel more self-confident. Winitzky and Arends (1991) found no significant differences in outcomes when comparing microteaching and clinical discussion.

Grossman states that there were also major problems with the research on microteaching. This line of research was rather atheoretical, and many studies showed a lack of methodological rigor. Another problem was that often no data were collected on the actual use of skills in classroom teaching, whereas the transfer to practice was the most important aim of the microteaching approach. MacLeod (1987) concluded that for this reason, no final conclusions can be drawn about the effectiveness of microteaching.

Later the research focus in this area shifted towards *computer-based simulations* of classroom situations. The idea was “that computer simulations can simplify the unpredictability of actual classrooms ... and can focus students’ attention on discrete, specified skills” (Grossman, 2005, p. 433). Studies suggest that this is an effective approach, although, again, the actual use of skills in classroom settings is seldom studied (Grossman, 2005). More recently, video technology is evolving into a powerful means of promoting student teacher learning (an issue that will be revisited later in this chapter).

## ***Competency-Based Teacher Education***

Microteaching and computer simulations are examples of strategies that fall into the ‘competency-based’ model in teacher education (CBTE) which had as its basic rationale that concrete, observable behavioral criteria is fundamental for the training of novices. This model became popular in the 1960s and 1970s (Forzani, 2014). Although positive results were reported in laboratory settings, CBTE appeared to create serious problems. In order to be able to evaluate teachers on their behavior, long detailed lists of skills were formulated, which in practice proved highly unwieldy. Moreover, this approach took insufficient account of the fact that good

teaching cannot simply be described in terms of isolated competencies to be learned in training sessions. As Combs, Blume, Newman, and Wass (1974, p. 4) stated: “In the first place, it is a fallacy to assume that the methods of the experts either can or should be taught directly to beginners.”

Others criticized the competency-based model because they considered it rigid and pedagogically wrong (e.g. Hyland, 1994). Lucas (1999) added that competency testing had little predictive validity, and mainly served the goal of “providing public appearance of quality assurance” (p. 193). In that light, it is remarkable that to date, in many places in the world a revival of a competency-based model is apparent. This is often the result of political pressure and an emphasis on accountability (Hunt, Carper, Lasley, & Rasch, 2010).

### ***Humanistic Based Teacher Education***

Around 1970, a contrasting view of teacher education emerged under the umbrella term *humanistic based teacher education* (HBTE). This model focused more on *the teacher as a person*. HBTE originated in humanistic psychology, a movement whose well-known founders were Rogers and Maslow. The approach was promoted, amongst others, by Combs et al. (1974) at the University of Florida in Gainesville, where a programme existed that became well-known internationally.

Rodgers and Scott (2008) mention as the first tenet of HBTE: “teachers must know themselves and their own frames of reference, values and biases” (p. 749). In this view, a central role is reserved for personal growth. The approach stressed “the unicity and dignity of the individual” (Joyce, 1975, p. 130). As Joyce (1975, p. 132) maintained, the viewpoint of HBTE “cannot be reconciled with the laying down of standardized teaching competencies”.

The HBTE view failed to obtain broad support. However, the fact that the HBTE approach focused the attention on the *person of the teacher* was important for the further development of teacher education and is still influential. The classical controversy between a competency-based view of teachers and an emphasis on a teacher’s self can be found in present discussions on teacher education. Where policy-makers generally emphasize the importance of outcomes of teacher education in terms of competencies, many teacher educators and researchers emphasize the more personal characteristics of teachers (e.g. Tickle, 1999), such as enthusiasm, flexibility, or love of children.

### ***Towards an Integration of a Focus on Competencies and the Person of the Teacher***

The distinction between competency-based approaches and approaches emphasizing the person of the teacher has evolved into a variety of traditions, each emphasizing specific aspects, and gradually also including attempts to integrate both

perspectives. Struyven and De Meyst (2010), for example, explain that the revival of competency-based curricula in Belgium goes hand in hand with a more holistic approach and that the current competency-based approach shows an integral focus on skills, knowledge, attitudes, and experience. However, this creates another problem, namely how to develop reliable assessment procedures:

In fact, the – reliable – measurement of competencies is an important problem due to its holistic approach, job-related nature and the integration of knowledge, skills and attitudes. (Struyven & De Meyst, 2010, p. 1507)

### *The Tension Between Theory and Practice*

The tension between a competency-based and a holistic approach is just one central problem in the pedagogy of teacher education. As noted above, the tension between theory and practice has long been another fundamental feature. When we look at the history of teacher education, it is striking that, for decades, a traditional didactic model has been dominant (Sprinthall et al. 1996). In the second part of the previous century, teacher education curricula generally followed a so-called “theory-to-practice” approach (Carlson, 1999). Wideen et al. (1998) characterized this traditional model as follows:

... the implicit theory underlying traditional teacher education was based on a training model in which the university provides the theory, methods and skills; the schools provide the setting in which that knowledge is practiced; and the beginning teacher provides the individual effort to apply such knowledge. In this model, propositional knowledge has formed the basis of university input. (p. 167)

A study by Goubeaud and Yan (2004) showed that out of 524 teacher educators in the US, more than half of them used lectures as their main instructional method. In line with this observation, Barone, Berliner, Blanchard, Casanova, and McGowan (1996) noted that traditional programme structures generally showed a collection of isolated courses, in which theory was presented without much connection to practice. This led to what Ben-Peretz (1995) called “a fragmented view of knowledge, both in coursework and in field experiences” (p. 546). She noted that in such teacher education programmes, knowledge was generally presented as ‘given’ and unproblematic. Schön (1983, p. 21) named this approach *the technical-rationality model*.

Starting around 1975, research on beginning teachers started to show the lack of impact of traditional teacher education. Lortie (1975) woke up the community of teacher educators by showing the dominant role of practice in shaping teacher development. An important study was carried out in Germany by Müller-Fohrbrodt, Cloetta, and Dann (1978). It showed that teachers pass through a distinct attitude shift during their first year of teaching, and that as soon as they enter the schools, they quickly abandon theories learned during their preparation.

Many later studies confirmed these observations, for example Cole and Knowles (1993), National Center for Research on Teacher Education (1991), Ruys, van Keer, and Aelterman (2014), Veenman (1984), and Zeichner and Tabachnick (1981). In a

review of the international research on the impact of teacher education on teachers, Wideen et al. (1998) concluded that this impact generally seemed meager. This conclusion concurs with a meta-study of North-American research on teacher education by the AERA Research Panel on Teacher Education (Cochran-Smith & Zeichner, 2005). The general trend surfacing from such meta-studies is that beginning teachers struggle for control, and experience feelings of frustration, anger, and bewilderment. They often feel insufficiently prepared and start to view their experienced colleagues in the schools as more realistic sources of information on how to teach than their teacher educators.

In sum, a major problem of teaching and teacher education is the problem of moving from intellectual understanding of the theory to enactment in practice (Darling-Hammond & Snyder, 2000).

### *Linking Practice and Theory*

One consequence of the issues raised above was that teacher educators could no longer take their traditional approaches for granted and the existing culture in institutions for teacher education came under discussion. As Goodlad (1994) stated, a “*simultaneous renewal*” of both schools and practices in teacher education was needed (p. 123). This renewal was also promoted by the fact that in many countries teacher shortages were a serious problem (Buchberger, Campos, Kallos, & Stephenson, 2000), which created political pressure to develop alternative certification programmes offering quick routes into the profession. In many of these programmes, the students started to work as a teacher immediately or after only a few weeks of preparation. In order to help these teachers survive in the classroom, a strong emphasis on practical help emerged, pushing theory to the background.

Now another problem surfaced: the lack of sufficient background of the graduates of these alternative certification programmes. According to J. Furlong (2013) the trend towards alternative certification programmes undermined the important function of universities in providing evidence-based knowledge about education. In a study on 1690 first year teachers, of whom 1220 followed a traditional teacher education programme and 470 an alternative route, Kee (2012) found that teachers whose programmes allowed them to begin full-time teaching without having had previous coursework or field experiences felt least well prepared. Teachers who had had a preparation which included at least some summer training and coursework before entering the profession, felt somewhat better prepared. These findings concur with the worries of many teacher educators about the lack of solid preparation that novice teachers receive in alternative certification programmes, which caused many teacher educators to resist the need for a stronger role of schools and experienced teachers (Hagger & McIntyre, 2000).

On the other hand, Tom (1997) wrote that alternative certification programmes were “not so much a threat to the existence of university-based teacher education as a source of ideas for regenerating teacher education” (p. 172). In retrospect, this



statement may have been too optimistic, but it is true that gradually a paradigmatic change in perspective emerged in which the role of the schools became more important (Munby, Russell, & Martin, 2001). It went hand in hand with a process of reshaping the pedagogy used in teacher education, as teacher educators were forced to find ways to more intensively connect practice and theory. Gradually several models of teacher education were created, based on close collaboration between institutions for teacher education and schools.

### *Links Between Institutions for Teacher Education and Schools*

At many places so-called *Professional Development Schools* (PDSs) became the linking pin in bridging practice and theory (Bullough & Kouchak, 1997; Darling-Hammond, 1994; Levine & Trachtman, 1997). The idea of a PDS is often compared to teaching hospitals, where medical students are prepared for their professions in a practical setting, but also follow an academic programme. In the context of PDSs, there is also much attention on the role of the school in the local community, as well as a focus on developing new teaching methods and on ongoing professional development for all involved in such projects (Abdal-Haqq, 1997). There is generally also an emphasis on inquiry-oriented and reflective ways of learning.

At other places, institutions for teacher education tried to establish fruitful connections between school-based mentor teachers who coach student teachers in the practical aspects of the profession, and university-based teacher educators who focus more on theoretical aspects. This led to so-called *school-university partnerships* (Martin, Snow, & Franklin Torrez, 2011).

Although these developments helped in making teacher education more practice-based, there were serious problems. For example, although PDS projects seemed a promising way to integrate theory and practice, case studies described by Darling-Hammond (1994) illustrated many problems associated with this development. The people in the schools often remained peripheral to the contexts of university teacher education; Zeichner (2010) noted that many were not knowledgeable about or interested in teacher education. Castle (1997, p. 221) concluded that “many of the problems stem from the reality that change of this nature involves individuals and relationships”. For example, Bullough, Draper, Smith, and Birrell (2004) found that the relationships between university-based teacher educators and mentor teachers were often top-down. Moreover, many university-based teacher educators experienced an ambivalence: on the one hand they felt they needed the people in the schools with their extensive and more recent practical experience, but on the other hand they felt that critical aspects of the preparation got lost within the “close emotional bonds formed between students and clinical faculty” (Bullough, et al., 2004, p. 513). Bullough et al. concluded that building partnerships between such contrasting cultures “needs to be less understood as an administrative and motivational problem than a question of identity and of relationship building” (p. 505).

In sum, serious challenges of bridging boundaries to support beginning teachers remained (Zeichner, 2010). On the other hand, in a discussion of various forms of partnerships between teacher education institutes and schools that emerged in the UK, Furlong, Whitty, Whiting, Miles, Barton, et al. (1996, p. 44) concluded that for the first time the development towards these partnerships allowed for a real integration of theory and practice.

### ***Two Examples of Programmes with Strong Links Between Theory and Practice***

One successful and early example of this development was the *Oxford Internship Model* (McIntyre, 1995), used in a one-year postgraduate programme for secondary school teachers in the UK. Close cooperation with schools was a crucial feature of this programme. McIntyre and Hagger (1992) summarized the most important principles underlying this model as:

1. heavy involvement in the teacher education programme of each of a limited number of schools;
2. extended attachment of interns to one school;
3. a closely integrated, joint school-university programme;
4. a secure learning environment (including a gradual development of the tasks set for student teachers throughout the year);
5. recognition that interns as adult learners set their own agendas; and,
6. division of labor between university and school staff so that each provides the kinds of knowledge which they are best placed to provide.

The Oxford model did not start from either theory or practice, but linked these two components of teacher education (McIntyre & Hagger, 1992). The learning processes of student teachers were divided into two distinct phases (McIntyre & Hagger, 1992; McIntyre, 1995). The first aimed at interns' attainment of the basic classroom competence necessary for certification, the second at the development of competencies necessary to be self-evaluating and self-developing teachers. A fundamental characteristic of the Oxford programme was that:

it is interns' own prior experiences and commitments, their own felt needs, their own aspirations and their own understandings which determine the things they attempt to learn and the problems which they seek to resolve. (McIntyre & Hagger, 1992, p. 267)

This principle was also central to the so-called *realistic approach to teacher education* (RTE) developed at Utrecht University in the Netherlands (Korthagen, et al., 2001; van Tartwijk, Veldman, & Verloop, 2011). In this approach the teacher education programme is built upon the problems the students experience and the concerns they develop through practical experiences. The RTE model shows an emphasis on structured reflection by and interaction between students, an integration of several disciplines, and close co-operation between university-based teacher

educators and mentor teachers in the schools (Korthagen et al., 2001). The traditional division of the curriculum into separate courses is left and the students follow an integrated programme in cohort groups. This concurs with one of the principles that Tom (1997) proposed for successful teacher education: “Rather than being treated as individuals to be managed bureaucratically, prospective teachers should be grouped into a cohort that moves through a professional program as a unit” (p. 149).

Important in the RTE model is the difference between Theory with capital T (*episteme*) and theory with a small t (*phronesis*). The latter is the practical theory that helps teachers perceive important ‘clues’ in classrooms and offer them a basis for their actions. More formal, epistemic theory comes in at the end of the programme, which is a fundamental turn-around in comparison with traditional approaches in teacher education.

The Utrecht programme is one of the most intensively studied curricula in teacher education. Korthagen (2010a) presents an overview of the research on this programme. Three evaluative studies, with qualitative and quantitative research methods, showed that contrary to the general trend, the Utrecht programme showed a strong connection between theory and practice and led to positive reports of the graduates on the impact of the programme. In addition, an extensive longitudinal study by Brouwer and Korthagen (2005) among 357 student teachers, 31 teacher educators and 128 cooperating teachers, demonstrated concrete effects on the graduates’ practices during their first professional year. In this study, important elements of the RTE programme appeared to be a cyclical alternation between school-based and university-based periods, and a gradual increase in the complexity of activities and demands on the student teachers. Although the outcomes of these studies show that teacher education can have a positive impact on practice, attempts to implement RTE in Germany, Australia, Japan, and several Scandinavian countries have shown that this often implies a profound cultural shift in existing views of teacher education, which can be threatening to experienced educators (Korthagen, 2010a). As Loughran (2013, p. 19) notes, “a pedagogy of teacher education .... inevitably impacts on a teacher educator’s identity”.

## Specific Pedagogical Strategies and Techniques

This section focuses on specific strategies and techniques that, according to the literature, are fruitful ingredients of teacher education curricula.

### *Workplace Learning*

As noted above, teacher education started in the nineteenth century having strong links with practices in schools, became more academic in the twentieth century, and is now back to a focus on practice. As the practical component of teacher education

became more central, a focus on workplace learning has become important in teacher education.

Avalos (2011) stated that workplace learning is an umbrella term for various forms of professional development that can take place formally or informally in schools and that are not assisted by outside facilitators. Workplace learning can take place individually or collaboratively. It offers both novice and experienced teachers opportunities to discover what is important in practice and to try out new behavior. As there is immediate feedback from the practical context, and thus important information about what is effective and what is not, Munby and Russell (1994) introduced the phrase ‘authority of experience’ to indicate the strong contribution of learning in and from practice.

Although they often phrased it differently, various authors (e.g. Britzman, 1986; Wubbels, 1992) have emphasized that workplace learning of student teachers started long before they entered a teacher education programme, namely during the thousands of hours they were students in school and experienced the practices of their own teachers. Lortie (1975) called this *the apprenticeship of observation*. He wrote that one of the disadvantages of this form of apprenticeship is that students only see their teachers’ ‘frontstage behaviors’ (such as monitoring, correcting, and lecturing), and not the ‘backstage behaviors’, such as choosing goals, preparation, or reflecting on experiences. Thus students tend to have a fragmented, one-sided view of the teaching profession: “they are not pressed to place the teacher’s actions in a pedagogically oriented framework” (Lortie, 1975, p. 62). C. Furlong (2013) added that student teachers have grown up amidst lay theories and archetypes of teaching that are culturally embedded and that this affects their own conceptions and behavior as a teacher.

This points to a risk of workplace learning, namely that it can easily become a process of socialization into established patterns and may lead to a reproduction of traditional habits and norms. Without additional measures it may hardly serve as an opportunity for powerful professional learning (Wideen et al., 1998). Hence, increased time in practice does not necessarily imply deep learning and can even obstruct teachers’ reflections and inquiry into what is really effective in teaching and learning (Gelfuso & Dennis, 2014). In other words, practical experience is not equal to professional development. Forzani (2014) gives an example: “Novices might spend months in student teaching or participating in a residency program and never learn how to lead a productive whole-group discussion” (p. 358).

A serious problem related to workplace learning is that there remains “much disagreement about the conditions for teacher learning that must exist for this learning in and from practice to be educative and enduring” (Zeichner, 2010, p. 91). Ben-Peretz (2011), too, states that much research is still needed before we know how to support effective learning from practice.

In any case, the role of workplace facilitators, in particular mentor teachers or school-based teacher educators, seems crucial in promoting effective teacher learning in the workplace, as many researchers have emphasized (e.g. Rozelle & Wilson, 2012; Zanting, Verloop, Vermunt, & van Driel, 1998). However, conceptualisations of the role of facilitators of workplace learning differ among countries and contexts

(Wang & Odell, 2007; Zanting, et al., 1998). In a review of 15 studies on induction and mentoring programmes for beginning teachers, Ingersoll and Strong (2011) concluded that such programmes have positive impacts, for example improved teacher satisfaction, retention, and student achievement.

Cothran, McCaughtry, Smigell, Garn, Kulinna, et al. (2008) found that the most important activities of the workplace facilitator are providing contextual subject matter knowledge and experience, as well as using skilful communication in their coaching. These findings concur with an international comparative study by Wang (2001). Rajuan, Beijaard, and Verloop (2010) studied the cooperation between 20 Israeli student teachers and 10 workplace facilitators. Both groups reported that a good balance between support and challenge was most effective in the facilitation process.

A central issue in the literature is the degree to which workplace facilitators give advice or focus on asking questions and promoting reflection (e.g. Barrera, Braley, & Slate, 2010; Crasborn, Hennissen, Brouwer, Korthagen, & Bergen, 2010). It seems important to have clarity about the goals, responsibilities, and expected practices of the facilitator role, as in many situations it remains unclear what is expected from them (Barrera, et al., 2010). Moreover, they often struggle with combining the teacher and mentor role (Jaspers, Meijer, Prins, & Wubbels, 2014). For a more detailed review of the literature on coaching in the workplace, see Lunenberg, Dengerink, and Korthagen (2014).

## *Case Methods*

Forzani (2014) emphasizes that practice-based teacher education is not synonymous to the inclusion of workplace learning. Practice can also be brought into the teacher education curriculum in the form of *cases* (Shulman, 1992), which can be used in many ways to support teacher learning. As Merseth (1996) stated:

Case methods are employed, for instance, to frame conversations between mentors and novices, as stimulants to reflection, as techniques to enrich field experiences, or to orient novices to particular ways of thinking. Case methods may include large – and small – group discussion of cases, role playing suggested by cases, or the writing of cases. (p. 726)

Whereas traditionally cases were written descriptions of real-life situations, cases can also come in the form of an oral account, video recording, or computer simulation. Grossman (2005) stated that cases can help teachers learn to think pedagogically, reflect on dilemmas, and explore possible actions. Darling-Hammond and Snyder (2000) assumed that when teachers reflected on well-chosen cases, their understanding of principles or dilemmas of teaching embedded in the case was enhanced. Cases can also be brought in from the student teachers' own practices. Darling-Hammond and Snyder maintain that this helps students to understand the relationship between concrete details in the "first order experience" (Shulman, 1992) and general principles of teaching, which can lead to a reconstruction of the case. This is further enhanced through discussion and feedback that helps the stu-

dent who brings in the case to explore deeper meanings and relations to theoretical knowledge.

However, Darling-Hammond and Snyder mention two dangers. First, limited knowledge of students may lead to misdiagnosis or a failure to identify productive approaches to the issues raised in the case. Second, there may be a lack of competence to connect the particulars of the case with theory. Based on a review of the literature, Grossman (2005) concluded that there was some evidence that cases did promote effective analysis of educational problems – although it is not so much the case(s) that can make a difference in teacher learning, but the instruction around it. Grossman stressed the need for more research to help teacher educators understand the features of cases that are helpful for different kinds of learning.

### *The Use of Video*

A specific way in which cases can be brought into teacher education is through video recordings of practice (Grossman, 2005). Video has been used for this purpose since the 1960s, but the medium has become much more accessible through the rapid developments in technology. The digitization of video and the availability of simple but high-quality cameras has made video an easy-to-use tool in teacher education. Many teacher educators use authentic video recordings of expert teachers, but also recordings of their student teachers' own lessons as the basis for learning about teaching.

In a review study of 388 studies on the use of digital video, Brouwer (2014) concluded that *visual teacher learning*, i.e. the use of digital video for the acquisition and further development of professional teaching competence, can influence both the cognitions and the behavior of teachers, as well as the relation between cognition and behavior. Sherin and van Es (2005, p. 478) stated that through the use of video, teachers “learn to notice”, i.e. understand the complex interplay of teaching and learning. This concurs with Cherrington and Loveridge (2014) who stated that using video slows down the pace of teaching, enabling student teachers “to see things you don't usually see” (p. 458).

Several studies indicate that the use of video is a fruitful strategy for developing skills required for facilitating higher-order learning in primary and secondary education. For example, in a study among 48 teachers (n=32 experimental, n=16 control), Roth et al. (2011) showed that the use of video promoted teachers' ability to analyze science teaching and their classroom use of teaching strategies. Kersting, Givvin, Thompson, Santagata, and Stigler (2012) did a study on the use of video with 36 teachers and found an impact on teacher knowledge and even on student learning.

Important conditions for positive outcomes are that the video materials are adjusted to student teachers' learning goals and that learning from video materials takes place in collaboration with facilitators and peers (Brouwer, 2014). Moore-Russo and Wilsey (2014) emphasize the need to provide student teachers with a

framework to support their analysis of video cases. This concurs with Brouwer and Robijns (2014), who showed that student teachers learn more when viewing guides are used, based on empirical evidence and/or plausible theories about what constitutes effective learning. Finally, Seidel et al. (2011) found that when teachers watch their own teaching on video, they experience stronger activation compared with viewing videos of other teachers. This study did not yield strong indications that when teachers watch their own teaching they notice more components of teaching and learning.

### *Approximations of Practice*

Another way to bring practice into teacher education is an approach named *approximations of practice* (Grossman, Hammerness, & McDonald, 2009). This approach builds on characteristics of the professional preparation of clergymen and psychologists. Its essence is that teacher educators provide opportunities for novice teachers to engage in practices that are proximal to the practices of the profession. For example, novices are asked to act in situations that have characteristics similar to those in real teaching situations, but that are at the same time less complex or threatening. As the teachers do so in situations outside the regular school classroom, there are many opportunities to step out of the flow of actions, engage in reflective conversations with others (for example peers), receive suggestions, and try new actions. Grossman et al. (2009) advocated to organize such an approach around *core practices*. Some criteria for choosing core practices are:

- that they occur with high frequency in teaching;
- that novices can enact these practices in classrooms across different curricula or instructional approaches;
- that they allow novices to learn more about students and about teaching, preserving the integrity and complexity of teaching; and,
- that they are research-based and have the potential to improve student achievement.

Quite a lot of research and developmental work seems needed to define practices meeting these criteria, which means that this view of teacher education should be further developed alongside a research programme.

Although the approximations of practice approach looks a little similar to the traditional microteaching approach, there are significant differences, as noted by Forzani (2014). First, nowadays there is much more emphasis on student thinking, on the relative unpredictability of teaching and the need of proficiency at improvising instruction, and on experimentation with instructional activities. As such, this approach is characterized by “marrying attention to technical skill to professional judgment and improvisational capability” (Forzani, 2014, p. 365).

Grossman et al. (2009) warn that their approach requires a re-thinking of programme structures, as it requires teacher educators to work within an integrated

program, and thus work closely together. This would not only imply that the curriculum does not contain separate courses, but also requires collaboration of school-based and university-based facilitators. Hence, organizing teacher education around a set of core practices challenges existing structures in teacher education.

### ***Promotion of Reflection***

Independent of the question whether an orientation on practice means more time in the field or more attention to case methods or the use of video, *reflection* by the student teacher is important for promoting learning from practice. Reflection has been a keyword in the pedagogy of teacher education since the beginning of the 1980s (Gore, 1987; Rich & Hannafin, 2009), although there is little high quality research on the effectiveness of promoting reflection in teacher education (Korthagen, 2010b; Mortari, 2012). A major problem of the research in this area is the difficulty of how to conceptualize reflection. Views of reflection differ substantially (Day, 1999), for example in the degree to which they emphasize certain values or goals of education (Korthagen et al., 2001).

All scholars seem to agree that reflection is a special form of thought (Grimmett, 1988; Hatton & Smith, 1995), and that the origin of the concept lies in the work of Dewey (1933), who defined reflection as “active, persistent and careful consideration” (p. 6). Loughran (1996) considered reflection as the “purposeful, deliberate act of inquiry into one’s thoughts and actions” (p. 21). Calderhead and Gates (1993) stated that the essence of reflection is that it enables professionals “to analyze, discuss, evaluate and change their own practice” (p. 2).

Many taxonomies of levels of reflection exist (e.g. Hatton & Smith, 1995; Zeichner & Liston, 1987). As Gelfuso and Dennis (2014) state, “they follow a common pattern of low levels of reflection being considered those in which the preservice teacher merely describes an experience to high levels of reflection as those in which the pre-service teacher considers the moral and ethical dimensions of her/his experiences” (p. 2). Davis (2006) differentiates between *productive* and *unproductive* reflection. Unproductive reflection is descriptive, lacks focus, relies on judgmental framing (“I liked ...”) and does not include analysis or evaluation. Productive reflection includes questioning assumptions, being open to different perspectives, being analytical, integrating knowledge, and being able to “see, attend to, and analyse the connections and relationships in a classroom” (Davis, 2006, p. 283).

Also important is the distinction between *action-oriented* and *meaning-oriented* reflection, the latter being “oriented toward understanding underlying processes” (Mansvelder-Longaroux, Beijaard, & Verloop, 2007, p. 57). The fact that teachers often have little time to reflect (Schön, 1987), often causes them to focus on what to do or do better (action-oriented reflection). Hoekstra (2007) found that in the long run, meaning-oriented reflection contributes to professional development, whereas action-oriented reflection hardly does.



It is remarkable that few publications discuss the question of how to promote fruitful reflection in student teachers, as teacher educators seem to struggle with ‘the pedagogy of reflection’. An exception is the work of Zeichner and Liston (1987) who presented clear descriptions of their view of reflection as a means to counter-balance social inequity within a programme at the University of Wisconsin, as well as two studies into the outcomes of the programme. The authors concluded that, although the schools were very influential in shaping the student teachers’ perspectives, “it could be argued that both Wisconsin studies indicate that the inquiry-oriented student teaching programme stems the onrushing move toward a more custodial view” (Zeichner & Liston, 1987, p. 36).

Korthagen et al. (2001) presented a description of a pedagogy aimed at promoting reflection in student teachers based on a spiral model of reflection, called the ALACT model, with five phases: Action; Looking back on the action; Awareness of essential aspects; Creating alternative methods of action; and, Trial. This model has also been used in other places in the world (see e.g. Brandenburg, 2008; Hoel & Gudmundsdottir, 1999; Jones, 2008).

Later the ALACT model evolved into a model of *core reflection*, focusing on deep, value-driven and transformative learning that builds on people’s personal strengths (Korthagen & Vasalos, 2005; Korthagen, Kim, & Greene, 2013).

## *Learning Communities*

Reflection is strongly promoted when (student) teachers engage in a process of co-learning from practice. Ideally, a *learning community* is created in which professional collaboration and reflection take place on common experiences in practice. Sometimes such communities are referred to by the term *communities of practice*, defined by Wenger (2006) as “groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly” (p. 1).

Vescio, Ross, and Adams (2008) did a review study on 11 studies centred on learning communities. Most studies showed important learning outcomes in student teachers, sometimes referred to as transformative learning. Vescio et al. conclude that professional learning communities represent a fundamental shift away from the traditional model of professional development: “Through collaborative inquiry, teachers explore new ideas, current practice, and evidence of student learning using processes that respect them as the experts on what is needed to improve their own practice and increase student learning” (p. 89).

A key factor is the community’s commitment to meeting student learning needs (Avalos, 2011). Hou (2015) maintains that on-line learning groups are also effective and help to develop a view of professional learning as co-learning. Lee and Brett (2015) too, found positive outcomes of an on-line learning group. They emphasized that safety to reveal one’s genuine identities is important in creating dialogue and changes in perspective.

Several teacher educators-researchers, for example Bullough et al. (2002), Goodnough, Osmond, Dibbon, Glassman, and Stevens (2009), and Rigelman and Ruben (2012), used a model in which two teacher candidates were matched with one mentor teacher. They showed that such a triad model promotes professional learning and leads to more awareness of the need to continuously examine one's practice.

## *Narratives*

A specific form or reflection, often used in learning communities, is storytelling or the use of narratives (Doyle & Carter, 2003). It is a powerful method for capturing the complex processes of learning to teach (Schultz & Ravitch, 2013). Through narratives, teachers can discover insights into teaching and themselves that otherwise would have remained hidden (Savvidou, 2010).

As Craig (2011) states, the narrative approach in teacher education is grounded in the work of Clandinin and Connelly (1998) on teachers' personal practical knowledge, professional knowledge landscapes, and stories to live by. Howe and Arimoto (2014) note that "naturally, teachers use storytelling in their personal and professional lives" (p. 217). Storytelling has been linked to reflection, learning, and change (McGraw, 2014).

One approach to a pedagogy of narratives is *autobiographical writing*, which can have many different foci, such as good or unsatisfactory experiences, decisions made, personal strengths, one's identity or development as a teacher, and more (Estola, Heikkinen, & Syrjälä, 2014). Another approach is sharing narratives in peer groups, which creates reflective moments enabling teachers to understand experiences from a new perspective, and makes them more aware of thoughts and feelings around those experiences (Estola, et al., 2014). Also, connections with theory can be made.

## *Teacher Identity*

Through narratives professional self-understanding is enhanced (Kelchtermans & Vandenberghe, 1994; Watson, 2006), which leads to the important issue of *teacher identity* (Beijaard, Meijer, & Verloop, 2004; Olsen, 2008). As Bullough (1997, p. 21) stated, "teacher education must begin ... by exploring the teaching self". Teacher identity has received much attention in the recent literature, although interestingly, a focus on the teacher as a person was already central to the humanistic-based approach (HBTE). However, the theoretical fundamentals of teacher identity have recently become much more elaborate.

In a review of the literature on teacher identity, Beauchamp and Thomas (2009) explained it is a complex and multi-faceted concept. They stated that teacher iden-

tity is dynamic, changes over time under the influence of various factors, such as emotion, and involves both person and context. Gee (2001) considered identity as a 'kind of person' within a particular context. One might have a 'core identity', but multiple forms of identity evolve across different contexts. This can be a complicated issue as "what is found relevant to the profession may conflict with the personal desires from teachers and what they experience as good" (Beijaard, et al., 2004, p.109). This concurs with Lanas and Kelchtermans (2015, p. 24), who state that beginning teachers "find themselves caught between what they wish to be on the one hand and what various others tell them they should be on the other".

Teacher identity is embedded in a teacher's personal biography. In an in-depth study of three experienced teachers, Bukor (2015) showed that beliefs and interpretations rooted in their family environments made an impact on their school experiences, career choice, instructional practice, teaching philosophy, and teacher identity.

*Professional identity* is how teachers define their professional roles (Lasky, 2005). Abednia (2012) maintains that learning to teach is primarily a process of professional identity construction rather than knowledge acquisition. This concurs with Feiman-Nemser (2008, p. 698), who states that learning to teach is "learning to *think* like a teacher, learning to *know* like a teacher, learning to *feel* like a teacher and learning to *act* like a teacher". This process may involve periods of exploration, uncertainty, and conflict (Meijer, De Graaf, & Meirink, 2011).

As Thomas and Beauchamp (2011) state, "the development of a professional identity does not automatically come with experience" (p. 767), but Rodgers and Scott (2008) conclude that few studies have looked at the role of teacher education in shaping teacher identity. Meijer, Oolbekkink, Pillen, and Aardema (2014) add that not much research has been done on the effects of pedagogies that have the development of teacher identity in teacher education as their goal. They describe three such pedagogies, one that uses a story-line method, one that focuses on key incidents, and one that focuses on sharing tensions, ways of coping, and emotions. The authors emphasize that working with such pedagogies requires space in the teacher education programme and teacher educator knowledge of transformative learning processes.

Thomas and Beauchamp experimented with the use of metaphors in teacher education, which helped student teachers to consider their professional identities. Korthagen and Verkuyl (2007), too, worked with metaphors and also used other activities to help student teachers become more aware of the kind of identity that was triggered through relationships with students in schools, and what kind of teacher they wished to be. Pope and Denicolo (2001) described a technique called 'the river of experience', in which a meandering river was used as a metaphor for teachers' personal biographies. Through such techniques, teachers may chart what Pinar (1986) called their 'architecture of self'. Central to many of these approaches is *dialogue*, which according to Akkerman and Meijer (2011) is crucial in identity development.

Flores and Day (2006) stated that the (re)interpretation of one's own values plays an important role in the development of a professional identity. Korthagen

(2004) considered reflection on values and ideals as taking place at ‘the level of mission’, which is deeper than the level of professional identity (see the final section of this chapter). What he called ‘core reflection’ deals with both of these levels, and is also concerned with the relationship between them. Leijen, Kullasepp, and Anspal (2014) described how they used Korthagen and Vasalos’ (2005) description of the core reflection approach for “approaching the core of being” in student teachers (p. 318).

## ***Teacher Research***

A step further than reflection and storytelling is the deliberate collection of data by student teachers on their own teaching. Then reflection becomes *inquiry* or *teacher research*, sometimes referred to as *practitioner research*. Many authors, for example Cochran-Smith and Lytle (2009), consider teacher research as a fundamental instrument in teacher development. They introduced the concept of ‘inquiry as a stance’, which promotes a dialectical relationship between knowledge and action. The practical knowledge generated when teachers “treat their own classrooms and schools as sites for intentional investigation” (Cochran-Smith & Lytle, 1999, p. 250), is called *knowledge-of-practice*, which is different from the formal *knowledge-for-practice* from external experts.

Gallimore, Ermeling, Saunders, and Goldenberg (2009) showed that systematic inquiry into teachers’ own practices within a facilitated peer group can lead to better achievement and to a shift in teachers’ attribution of student performance from external causes towards their own teaching. However, when student teachers engage in research during their preparation programme, the quality of their inquiries “generally depended on the questions posed, the ways that candidates conceptualized and assessed learning, and the candidates’ understanding of the recursive nature of the inquiry process” (Cochran-Smith, Barnatt, Friedman, & Pine, 2009, p. 17).

Several genres of inquiry and practitioner research have been suggested as being helpful in teacher education (for an overview, see Borko, Liston, & Whitcomb, 2007). They differ in their goals and foci. For example, *action research* (Carr & Kemmis, 1986) focuses on the improvement of practice. This genre was strongly promoted by Stenhouse (1975) and elaborated by authors such as Kemmis and McTaggart (1981), who defined an *action research cycle* of acting, observing, reflecting, and planning. *Self-study research* focuses on the understanding of oneself and one’s role in the practice of teaching (Loughran, Hamilton, LaBoskey, & Russell, 2004). It empowers professionals to examine and be accountable for their own practice as they articulate and generate knowledge, and can be used by student teachers during their preparation programme for developing deeper understanding of their practices (Anderson-Patton & Bass, 2002). A more recent genre is *design research*, in which theory and practice go together in the design and development of a practical approach or method (van den Akker, Gravemeijer, McKenney, & Nieveen, 2006).

Many books have been published with strategies and guidelines for doing these types of research and other variations. Several of these books target student teachers (a discussion of the pedagogies involved lies beyond the scope of this chapter.)

## ***Portfolios***

In the 1980s, written teaching *portfolios* were introduced into teacher education to stimulate student teachers' reflection on their teaching practices (Borko, Michalec, Timmons, & Siddle, 1997), but also for assessment purposes. Darling-Hammond and Snyder (2000) presented the following description of portfolios:

Portfolios are means by which teachers select and reflect upon artefacts of their practice collected over time and from multiple sources and diverse contexts to provide evidence of their thinking, learning, and performance. Portfolios can include documents that derive directly from teaching – copies of lesson or unit plans, syllabi, handouts given to students, assignments, tests, and samples of student work (with or without teacher feedback) – as well as photographs, videotapes, or audiotapes or classroom activities ranging from bulletin boards and displays, to taped lessons, conferences with students, and the like. (pp. 536–537)

Portfolios can also include teacher logs or journals, detailed descriptions of lessons, reflections, and documents with evaluations from others (Athanases, 1994).

Smith and Tillema (2006) claim that portfolios can lead to better performance, but they also emphasize the importance of giving feedback on portfolios. Oner and Adadan (2011) used web-based portfolios in teacher education and demonstrated that this promoted the number of student teachers' high-level reflections. However, Breault (2004) presents a couple of warnings on the basis of a study of the use of portfolios among ten students. First, there may be a difference in what the teacher educator considers a meaningful portfolio and the student teachers' perceptions of the value of a portfolio, leading to a 'dissonance'. Such a dissonance may be grounded in the fact that there is no faculty consensus as to the purpose of a portfolio. Another dissonance may be that students can have doubts about whether the amount of time put in to making a portfolio is worthwhile. Breault noted that among the factors contributing to such dissonances are lack of clarity of stated purpose for the portfolio, the student teaching environment, and uncertainty between formative and summative nature of the assessment. Breault concluded that it was important that teacher educators communicate to their student teachers the purpose of a portfolio assignment, and that which constitutes a meaningful way to make a portfolio. Moreover, making a portfolio takes time and this time should be made available in the programme in order to allow for professional growth.

Another warning emerges from a study by Admiraal, Hoeksma, van de Kamp, and van Duin (2011) on student teachers' portfolios. They found that striking discrepancies can surface between the competence reflected in a written portfolio and the competence demonstrated during actual classroom practice. Other researchers, too, warn that there can be a weak relation between what student teachers present in

their portfolios and their actual teaching performance (e.g., Darling-Hammond & Snyder, 2000).

## **Modeling**

An old adage says: “Teachers teach as they are taught and not as they are taught to teach” (Blume, 1971). Discussing his role as a teacher educator, Russell (1997) put it as follows: “How I teach IS the message”. This points towards the important exemplary role of the teacher educator, something often expressed with phrases such as ‘teach as you preach’ and ‘walk your talk’.

Deliberately showing specific teaching approaches is named *modeling* (Loughran, 2006). One of the first publications on modeling in teacher education is a study by Wood and Geddis (1999). They describe how they made their own pedagogical reasoning as teacher educators explicit to their student teachers. In line with this approach, Loughran and Berry (2005) describe two levels of modeling. The first is concerned with the exemplary behavior of teacher educators. At the second level, teacher educators make the pedagogical rationale behind their exemplary behavior explicit, and the feelings, thoughts and actions accompanying their pedagogical choices. The combination of the two levels is called *explicit modeling* (Lunenberg, Korthagen, & Swennen, 2007). Further steps in explicit modeling are making connections with theory and promoting the application of the modeled behavior in the student teachers’ practices (Lunenberg et al., 2007). Loughran and Berry (2005) developed several strategies for explicit modeling, such as thinking aloud as a teacher educator, writing journals that are made public to the students, and discussions during and after class with student teachers. In their self-study, Hogg and Yates (2013) found that effective modeling also requires that the student teachers develop metacognitive awareness about the educator’s modeling behavior.

Modeling is often experienced as difficult by teacher educators. In a study among ten teacher educators, Lunenberg et al. (2007) showed that only six of them sometimes made their exemplary behavior explicit. Only four of them also made a connection with their students’ practices. None of the teacher educators legitimized their own teaching with the aid of theory. Obstacles that these teacher educators encountered were the vulnerability experienced when putting one’s own pedagogical behavior ‘up for discussion’ and a lack of theoretical knowledge. A study by Willemse, Lunenberg, and Korthagen (2008) on the conscious enactment of values by teacher educators showed that teacher educators struggle with finding a language to formulate how they model certain values. Such findings concur with a study by Smith (2005). She found that beginning teachers in Israel expected from their teacher educators that they would make their approach to the pedagogy of teacher education explicit, but remarkably, none of the 18 teacher educators in Smith’s study mentioned this aspect as being important in their pedagogy. There seems to be no research looking at effects of modeling on student teacher behavior.

## Conclusions and Discussion

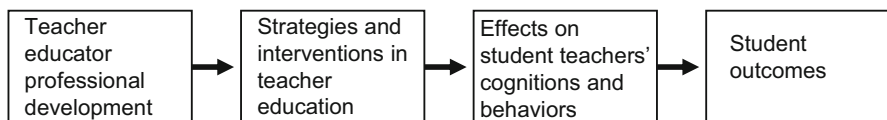
### *An Overview of the Research*

In taking a big picture view of the body of research on the pedagogy of teacher education, some serious methodological weaknesses stand out. In general, the research in this field is quite scattered and dominated by small-scale studies often only presenting anecdotal data. Studies seldom compare the outcomes of different pedagogical approaches and if outcomes are studied at all, there is often a lack of information about the details of the implementation of the pedagogical approach under study (Cochran-Smith & Zeichner, 2005). In addition, often the same terms have different meanings in various studies, or a similar meaning is expressed in slightly different terms, which makes it difficult to aggregate research outcomes from different studies. Hence, it is clear that researchers in this area need to work with a common language.

There is also a need to conduct more research with quasi-experimental designs, which would make claims about programme outcomes stronger. Rare, but important, is longitudinal research on long-term effects of teacher education (Clift & Brady, 2005). There are of course, examples of such studies, for example by Brouwer and Korthagen (2005) and Kosnik and Beck (2009), in which student teachers were followed into their first years in the teaching profession. Such longitudinal research may help us better understand the long-term effects of teacher education programmes on their graduates' professional development and on their teaching behavior, and finally on the students of these graduates. The diagram in Fig. 8.1 clarifies the links that we need to know more about.

The box at the left-hand side of this diagram shows a factor that is often overlooked. Researchers tend to describe programme features or pedagogical strategies as if they are 'teacher educator proof', whereas one can suspect that effects of programmes or programme components will be strongly influenced by the degree to which the programme staff are able to enact underlying ideas of pedagogical approaches in a fruitful manner.

Studies on the outcomes of programme characteristics on students in school (the right-hand box) seem almost non-existent. Perhaps this level of evaluation is too complicated for the stage we are in as it would not only require a complicated research design, through which the effects of various programmes on students in schools are compared, but also a way to attribute differences in student outcomes to the behavior of the teachers graduated from these programmes; and thus a means to control for numerous other influences.



**Fig. 8.1** Relations between teacher education and outcomes

Most of all, research on the pedagogy of teacher education should become more coherent, by following clear lines of research and through collaboration of researchers from various universities and countries. Until now, researchers rarely build on each other's work or replicate studies, yet it is obvious that this could help in building a coherent empirical foundation on which the pedagogy of teacher education might be built.

For building such a foundation, the growth of the self-study movement has been important: the many teacher educators who do research on their own practices help to promote insights into that which is going on in teacher education internationally. Zeichner (1999) observed that the self-study movement is "probably the single most significant development ever in the field of teacher education research" (p. 8). Self-studies show that at the core of expert practice is not the strict implementation of evidence-based practices, but the need to make subtle judgments in unique situations; a point well made by Hagger and McIntyre (2000). However, in this strand of research, too, methodological rigor and depth are often missing, as well as connections between studies (Loughran, 2010a, 2010b; Zeichner, 2007). On the one hand, it is noteworthy that solid quantitative research is rare within the self-study movement – yet such research could help make outcomes of pedagogical strategies more clear and also assist in comparing the effectiveness of strategies. On the other hand, a strong aspect of self-study research is that it tends to "provoke, challenge, and illuminate rather than confirm and settle" (Bullough & Pinnegar, 2001, p. 20).

Grossman and McDonald (2008) summarized the status quo in the research in this field as follows:

To move forward, the fields of research on teaching and teacher education need to develop more programmatic research that addresses a set of critical questions over time as well as develop a range of common tools and approaches for making progress in answering those questions. (p. 198)

As we have not reached a point at which a robust, research-based knowledge base for the pedagogy of teacher education is available, teacher educators and policy-makers could be more critical regarding the implementation of strategies into their own practices, and be more aware that often views of 'good teacher education' may be nothing more than inspiring beliefs. Murray et al. (2008) suggested that the status quo is a natural result of the fact that teacher education is a new field, trying to prove itself.

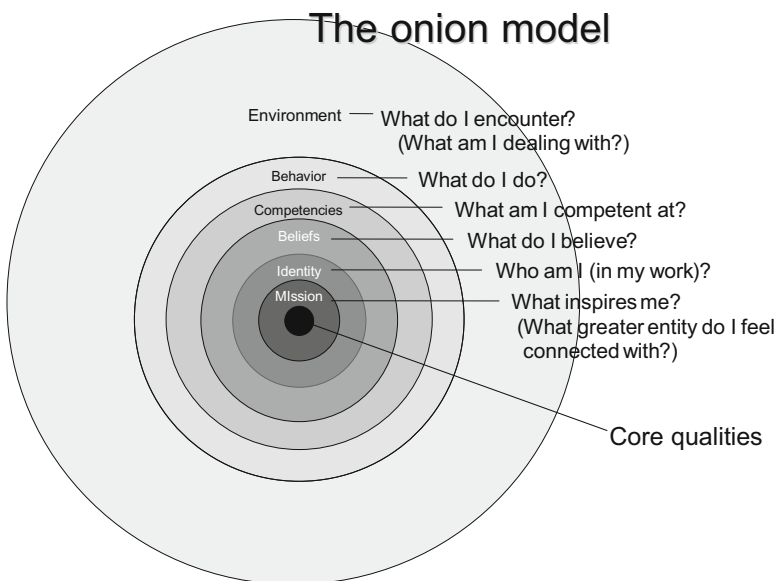
### *Underlying Tensions*

Grossman and McDonald (2008) discussed contextual factors that make the development of a solid pedagogy of teacher education difficult. First, through standards for accreditation and requirements for licensure, the contours of teacher education programmes are often dictated from above. Secondly, the vast majority of teacher education programmes are situated within institutions of higher education and operate within an institutional context that constrains the work of teacher education.



Thirdly, teacher education programmes are situated in local contexts and labor markets. Supply and demand issues often determine what is and is not possible.

Another problematic factor is that “there is no one right way of doing teaching” (Loughran, 2013, p. 14), and this is equally true for teaching teachers. Clarke and Hollingsworth (2002) stated that the problem of educating teachers is much more complex than often assumed (compare Bronkhorst, Meijer, Koster, & Vermunt, 2011). Berry (2007) described well how the work of teacher educators is characterized by underlying tensions (or dilemmas), such as those between telling and growth, confidence and uncertainty, action and intent, safety and challenge, valuing and reconstructing experience, or planning and being responsive. This chapter shows another important underlying tension in teacher education, one that originates in dilemmas about what the focus of teacher education should be. Should the focus be the development of adequate behavior, or the formation of a stable professional identity? Are solid competencies the most important features of good teachers or is it their awareness of their personal values and ideals that makes a difference? Korthagen (2004) discussed how throughout the history of teacher education, answers to these questions have shifted and that the field has not arrived at a view that is commonly shared. He introduced the so-called *onion model* (Fig. 8.2), which shows various levels on which professional reflection and learning can take place. Each level represents a different perspective on teacher learning and leads to a different answer to the question of what should be the focus and goal of teacher education.



**Fig. 8.2** The onion model

The basic idea underlying the onion model is that all levels always play a role in teacher behavior, professional development and teacher reflection, but that teachers may not always be aware of all these levels in themselves. Broadening their reflection, in particular by including the deeper levels of the onion model into the reflection process, can help the teacher bring alignment into the various levels (Korthagen et al., 2013). The level of mission is often overlooked by teacher educators and researchers, but seems to play an important role in the development of teacher identity, in particular when there is a contradiction between an ideal and the capacity to enact the ideal in the classroom (Anspel, Eisenschmidt, & Löffström, 2012; De Ruyter & Kole, 2010).

The onion model also points towards the risk of making the focus of professional development too limited, and of overlooking the fact that a good teacher is one in whom the various levels are in harmony with each other. This implies that many of the views, models, and strategies discussed in this chapter are not necessarily in contrast with each other, but that it is possible to use various perspectives in parallel to one another (Bronkhorst et al., 2011), ideally in a manner that supports harmonious merging of the various levels of the onion model.

### *Guidelines for Teacher Educators*

Although it may be realistic to conclude that the pedagogy of teacher education is at its infancy as an academic area, it seems important to conclude this chapter by looking at what we do know and in what aspects a reasonable degree of consensus about an effective pedagogy of teacher education exists. Helpful in this respect are studies that aimed at finding a set of basic principles of good teacher education by comparing a number of teacher education programmes. One such attempt was made by Howey and Zimpher (1989), who studied six ‘exemplary’ elementary teacher education programmes in the US, chosen by peer nomination. Although the researchers emphasized that these programmes were not necessarily representative of programmes in general and that there were no data on the effectiveness of the programmes under study, they found 14 attributes, the most important of which were:

1. A clear set of shared ideas and values (a coherent vision).
2. Distinctive qualities of the programme that stimulate faculty to collaborate, which also creates ownership.
3. Clear, explicit, and reasonable programme goals.
4. Elaboration of these goals into themes permeating all programme elements.
5. High levels of rigor and academic challenge.
6. An integrative and interdisciplinary approach, with a balance between general knowledge, pedagogical knowledge, and experience.
7. Working in cohort groups of student teachers.
8. Close links between campus-based and school-based activities.

Darling-Hammond (2006) presented an overview of the research she and her colleagues conducted on seven distinctive teacher education programmes from across the US. These programmes were “sought out by principals and superintendents because they prove consistently capable of creating successful classrooms and helping to lead successful schools” (Darling-Hammond, 2006, p. 5). Common features of these programmes were (slightly abbreviated):

1. A shared, clear vision of good teaching, permeating all coursework and clinical experiences.
2. Well-defined standards of practice and performance.
3. The curriculum is grounded in knowledge of development, learning, social contexts, and subject matter pedagogy, taught in the context of practice.
4. Extended clinical experiences (at least 30 weeks) are carefully developed to support the ideas and practices in simultaneous, closely interwoven coursework.
5. Explicit strategies help students (1) confront their deep-seated beliefs about learning and students and (2) learn about the experiences of people different from themselves.
6. Strong relationships, common knowledge, and shared beliefs link school- and university-based faculty.
7. Case study methods, teacher research, performance assessments, and portfolio evaluation relate teachers’ learning to classroom practice (Darling-Hammond, 2006, p. 41; Hammerness & Darling-Hammond, 2005, p. 406).

Korthagen, Loughran, and Russell (2006) took a more international perspective when they compared three programmes, in Australia, Canada, and the Netherlands, considered to be responsive to the expectations, needs, and practices of student teachers. From their analysis of these programmes, seven principles evolved. Briefly summarized, these authors stated that learning about teaching:

1. involves continuously conflicting and competing demands;
2. requires a view of knowledge as a subject to be created rather than as a created subject;
3. requires a shift in focus from the curriculum to the learner;
4. is enhanced through (student) teacher research;
5. requires an emphasis on those learning to teach working closely with their peers;
6. requires meaningful relationships between schools, universities, and student teachers; and,
7. is enhanced when the teaching and learning approaches advocated in the programme are modeled by the teacher educators in their own practice.

As Zeichner and Conklin (2005) concluded, we are still far from final conclusions about the attributes of effective teacher education programmes, but at least such lists of features resulting from comparative studies offer some first building blocks for a coherent pedagogy of teacher education.

## *The Education of Teacher Educators*

The above discussion naturally leads to the need to create a knowledge base for teacher educators. First attempts to build such a knowledge base have been made, for example in Israel by the MOFET Institute, and in the Netherlands by the Dutch Association of Teacher Educators (Lunenberg, Dengerink, & Korthagen, 2014). The next question is how existing knowledge about the pedagogy of teacher education can start to positively influence the professional development of teacher educators. Here we encounter the remarkable situation that in many places in the world, the professional growth of teacher educators is not called into question at all, as many studies show (Butler, Burns, Frierman, Hawthorne, Innes, et al., 2014; Russell & Korthagen, 1995). There persists “a common taken-for-granted assumption that a good teacher will also make a good teacher educator” (Korthagen, Loughran, & Lunenberg, 2005, p. 110). However, many teacher educators report intense struggles with the transition from classroom teaching to teacher educator (e.g., Ritter, 2011; Williams, Ritter, & Bullock, 2012).

Buchberger et al. (2000) concluded:

Most teacher educators ... have never received education and training in methodologies of teaching, co-operation and learning appropriate for *adult learners* (student teachers and professional teachers). A number of problems of teacher education could arise from the fact that the whole issue of education of teacher educators has been rather neglected. (p. 56)

We can draw the remarkable conclusion that in teacher education, which has as its focus the professional development of teachers, that there has been a striking lack of attention to the education of teacher educators (Bates, Swennen, & Jones, 2011; Smith, 2003); although at some places in the world educational programmes for teacher educators do exist. In such programmes, fruitful pedagogical strategies can be taught, for example through explicit modeling (Korthagen et al., 2001). The experiences with professional development programmes for teacher educators that do exist have shown that they can be pivotal in developing an effective pedagogy of teacher education, in particular when carried out among teams of teacher educators (Hadar & Brody, 2010; Korthagen et al., 2001).

As Lunenberg et al. (2014) and Murray (2010) stated, the powerful instrument of self-study research should get a central place in the professional development of teacher educators. This kind of research into one’s own practices helps teacher educators to develop a research-based fundament for their own practices. This is of crucial importance, as teacher education plays a central role in enhancing the quality of education in general. Hence, “developing a pedagogy of teacher education is a professional responsibility for all those teacher educators committed to deeper understandings of teaching, learning, and teaching about teaching and learning” (Loughran, 2006, p. 176).

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