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Inconvenient truths about teacher learning: towards professional development 3.0

Fred Korthagen

Department of Education, Utrecht University, Utrecht, The Netherlands

ABSTRACT

Based on recent findings about teacher learning, a critical analysis of traditional and new approaches to professional development is presented. To a large degree, teacher learning takes place unconsciously and involves cognitive, emotional and motivational dimensions. Moreover, teacher learning takes place at various levels. Although these insights may be inconvenient truths to policy-makers, empirical evidence is presented showing that approaches building on the multi-level and multi-dimensional nature of teacher learning are effective at influencing teacher behaviour. Hence, in teacher learning, the connection with the person of the teacher is crucial. Practical consequences for professional development are discussed.

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1. Introduction

For a long time, educational researchers have been searching for the Holy Grail: an effective method of educating teachers which would positively influence 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 there is a huge gap between theory and practice (e.g. Bakkenes, Vermunt, & Wubbels, 2010; Robinson, 1998; Wideen, Mayer-Smith, & Moon, 1998), and that many attempts at promoting innovations in schools fail (Holmes, 1998).

Already in 1904, Dewey (1904) noted this gap between theory and practice, and he discussed possible approaches to bridging it (see also Shulman, 1998). Nevertheless, an inconvenient truth is that during the whole of the twentieth century, the theory–practice divide has remained the central problem of preservice and inservice teacher education (Lanier & Little, 1986). Traditionally, in analyses of this problem, the focus has been on the question of how practice can become better linked to theory. Only relatively recently have practitioners and researchers considered the option of reversing the order and linking theory to practice (Korthagen, Loughran, & Russell, 2006). Underlying this shift in focus is that more attention is nowadays going to the question of *how teachers learn*. Without

CONTACT Fred Korthagen  fred@korthagen.nl

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sufficient knowledge about teacher learning, attempts to improve the link between theory and teaching practices are no more than a shot in the dark. Given the many failing attempts at influencing teacher behaviour, it is remarkable that for quite a long time, there has been little research on the topic of teacher learning (Clarke & Hollingsworth, 2002).

The aim of this article was to present important findings about teacher learning as a fundament for thinking about professional development of preservice and inservice teachers. We will discuss that much of a teacher's behaviour is unconsciously guided by three dimensions (the cognitive, affective and motivational dimensions), and that teacher learning takes place at various levels. We will explain that teacher reflection on these dimensions and levels is important in promoting meaningful learning in teachers. Although several of these findings have appeared in various publications, they have seldom been connected to each other. In the present article, they will be combined into one coherent and evidence-based framework for teacher development and linked to the literature on educational change.

The insights discussed in this article explain the meagre impact on teacher behaviour of many traditional strategies, for example, the strategy of presenting theories about teaching and learning to teachers, hoping that this will promote teacher behaviour matching those theories. This is often called the *theory-to-practice approach* (e.g. by Carlson, 1999), which we name *professional development 1.0*. This approach has been dominant for many decades (Imig & Switzer, 1996, p. 223; Sprinthall, Reiman, & Thies-Sprinthall, 1996), although a variety of studies have shown its failure in strongly influencing the practices of teachers (Cochran-Smith & Zeichner, 2005; Wideen et al., 1998). As Darling-Hammond & Snyder (2000) conclude, a major problem of teaching and teacher education is the problem of moving from intellectual understanding of the theory to enactment in practice.

In reaction to this situation, teacher educators have tried to find strategies for making theory more meaningful to teachers, for example, by using practical examples on video or other pedagogical measures. However, this did not fundamentally change the 'sacred theory-practice story' as Clandinin (1995) called it. Hence, we might summarise these approaches under the umbrella term *professional development 1.1*.

More recently, many schools of education and institutions for teacher education started to give practice a central place in their curricula (Lunenberg, Dengerink, & Korthagen, 2014) and the focus shifted towards *workplace learning* (Avalos, 2011). As Munby, Russell, and Martin (2001) noted, this represents a more fundamental shift, which we call *professional development 2.0*. Characteristic of this approach is that institutions for teacher education build partnerships with schools, in which close co-operation takes place between university-based teacher educators and teachers who gradually become school-based teacher educators (Martin, Snow, & Franklin Torrez, 2011). This development went hand in hand with the creation of various alternative routes into the profession (Brouwer, 2007; Feistritzer & Chester, 2003), for example, programmes starting with practical teaching, i.e. hardly without any preparation, programmes for students who already have a job as a teacher, programmes for second-career teachers and more (Zeichner & Conklin, 2005). However, although this approach towards more practice-oriented programmes has at the same time been strengthened with the aid of pedagogical tools such as portfolios or reflective log-books, a new problem has emerged, namely how to connect practical experiences to theory (Furlong, 2013). In addition, the more emphasis is put on practical teaching in the school context, the stronger the socialising influence of the – often traditional – school context on teacher learning may become (Cherubini, 2009; Tomlinson, 2004).

Hence, serious challenges of bridging boundaries to support beginning teachers remained, although in this respect some alternative certification programmes were more successful than others (Zeichner, 2010). Clarke and Hollingsworth (2002) state that the problem of educating teachers is thus much more complex than often assumed. Therefore, after discussing a framework on teacher learning, an approach will be presented representing a more radical attempt at integrating practice and theory, namely by giving the person of the teacher a more central place. In this approach, which I call *professional development 3.0*, the professional and the personal aspects of teaching are intertwined.

2. What guides teacher behaviour?

An important reason why the theory-into-practice approach (professional development 1.0) does not work well is its assumption that teacher behaviour is guided by teacher thinking (Clark & Lampert, 1986). It seems an attractive idea that once teachers would have the right insights and beliefs about teaching and learning, they could change their behaviour in the right direction. However, this has been shown to be a rather primitive view of teacher learning. Eraut (1995), for example, stressed that during a lesson, many things happen simultaneously, and there is a continuous pressure on the teacher to act. Already more than 30 years ago, Clark and Yinger (1979) stated that it is impossible for a teacher to be consciously aware of all that happens in a classroom. As a result, teachers make relatively few conscious decisions while teaching and therefore their behaviour is only partly influenced by thinking, let alone by the theories they have learnt.

An example can be found in a study into teacher learning by Hoekstra (2007). In this study, she observed experienced teachers in their classrooms, for example, science teacher Albert, who gave a lesson in which he wanted to deepen the topic of potential energy. While his pupils were working in pairs, Albert walked around and assisted them in their reasoning about the problem they were working on. Several pupils had questions about the concept of potential energy. Albert reported afterwards:

I noticed later that they did not have a clear idea of what that [potential energy] was. [...] And thinking back, I think I have not done that entirely well. Some concepts were not clear enough for the pupils. To understand the whole story you actually have to know more about the phenomenon potential energy. I ignored that concept because it was mentioned in the former assignment, but in that assignment the question 'what exactly is potential energy?' was not dealt with either. (Hoekstra, 2007, p. 43)

This is an example of an instructional problem often occurring in classrooms: the teacher goes on with the same behaviour, although from the perspective of his lesson objectives something is going wrong. During his preparation for the profession, this teacher has probably learnt what is needed in such a situation. However, in Albert's lesson, a behavioural sequence evolves in him which is probably triggered by the (conscious or unconscious) wish to finish the lesson as planned. Hoekstra describes that it is only after the lesson that Albert started to reflect on his assumption that the pupils had sufficient knowledge about potential energy and on his ineffective behaviour. Perhaps he started this reflection in reaction to being interviewed by the researcher.

From such examples found in her research, Hoekstra (2007) concludes that 'it is remarkable that research on teacher learning is mostly concerned with teachers' change in cognition, as if behavioural change automatically follows from a change in cognition' (p. 116). Cases

such as the above show that other sources in teachers are actually guiding their behaviour. During teaching, a teacher's behaviour is the result of a complex mix of cognitive, affective and motivational sources in the teacher, which remain partly implicit and are often not reflected on (Bullough, 1989; Day & Gu, 2009; Hargreaves, 1998a; Schutz & Zembylas, 2009; Van Veen & Slegers, 2006). Examples of such feelings are joy, satisfaction and pleasure, but also negative feelings, such as anger and frustration (Sutton & Wheatley, 2003).

The psychologist Epstein (1990) stated that unreflected behaviour in people is mediated by a so-called *experiential system* enabling rapid processing of information, based on emotions and images. This experiential system is linked to physical responses and automatic processes (unconscious routines). The system works in a holistic way (cf. Day, 1999), which means that sensory perceptions of the world are translated into meaningful 'wholes' directing behaviour in an unconscious way (Lazarus, 1991). Korthagen, Kessels, Koster, Lagerwerf, and Wubbels (2001, p. 420) call them *gestalts* and define them as 'personal conglomerates of needs, concerns, values, meanings, preferences, feelings and behavioural tendencies, united into one inseparable whole'. These *gestalts* trigger a certain standard behavioural pattern, which often reflects a basic fight, flight or freeze tendency. Such routine patterns in teachers partly evolve as a result of their earlier experiences in life, which is a well-known phenomenon in psychology (Rothschild, 2000). In their overview of the literature on teacher socialisation, Zeichner and Gore (1990) referred to this phenomenon stating that 'deeply ingrained and partly unconscious feelings and dispositions developed as a pupil, exert a continuing influence on teacher activity' (see also Hollingsworth, 1989). In addition, habitual patterns in schools have a strong influence on new teachers entering the school (Zeichner & Gore, 1990), as the unspoken message, even from the pupils, may be: 'please behave as the other teachers do' (cf. Richardson, 1994). The socialising role of the school context is thus known as a crucial factor in how teachers learn (Lortie, 1975; Wideen et al., 1998).

Epstein's theory clarifies that there are strong relations between thinking, feeling and behaviour. This has been confirmed by brain research. For example, Immordino-Yang and Damasio (2007) conclude that most of human behaviour and learning is grounded in processes in which thinking and feeling are closely connected. The title of their article is noteworthy: 'We feel, therefore we learn'. These authors also state that we are often not aware of the connections between thinking and feeling.

We can summarise the above discussion with the help of Figure 1. It shows that for quite a long time, researchers have assumed that the sources of teacher behaviour and teacher learning could be found in cell #1, whereas many sources are unconscious and not as rational as we might think, which means that the other cells (#2, 3, 4) are at least as important.

3. Three dimensions in teacher behaviour and teacher learning

Although nowadays we are witnessing more awareness in researchers regarding the affective dimension playing a role in teachers, there is another dimension at the right-hand side of Figure 1 that deserves our attention. This is the *motivational* dimension, or in everyday language, what teachers *want* and *need*. For example, De Ruyter and Kole (2010), Palmer (1998), and Newman (2000) maintain that teachers' ideals are an important driving force in their teaching. Based on Self-Determination Theory (Deci & Ryan, 2002), Evelein, Korthagen, and Brekelmans (2008) carried out research on the basic psychological needs

	Rational	Non-rational
Conscious	1	2
Subconscious	3	4

Figure 1. The sources of teacher behaviour.

of teachers, i.e. the need for competence, autonomy and relatedness. They found statistically significant relations between the degree of fulfilment of these basic needs in teachers and the quality of their classroom behaviour. This line of research has also shown that fulfilment of the basic psychological needs is often problematic in beginning teachers (Evelein et al., 2008). As a result, their concern is generally not how to apply theory to practice, unless the theory is directly useful to the problems they face in their classrooms. This is an important explanation for the fact that the impact of initial teacher education on beginning teachers is generally meagre: most of the theory presented in academia is often not experienced as helpful to the problems and concerns that beginning teachers encounter (Katz, Rath, Mohanty, Kurachi, & Irving, 1981, p. 21). In the case of more experienced teachers, their first concern is often to acquire quick and clear learning outcomes in their pupils (Guskey, 1986), whereas the effective application of theory may involve a long-term learning process.

In sum, cognition, emotion and motivation are three dimensions determining behaviour (Damasio, 1994; Järvillehto, 2001). Hence, we agree with authors such as Nias (1996), Hargreaves (1998a) and Hoekstra (2007) that it is time for research on teacher learning to move beyond a one-sided rational approach to learning. Teaching is a profession in which feelings and motivation play an essential role, but until recently ‘the more unpredictable passionate aspects of learning, teaching and leading [...] are usually left out of the change picture’ (Hargreaves, 1998b, p. 558). Hence, if we wish to promote teacher learning, we will have to take their thinking, feeling and wanting into account. Moreover, these dimensions are always influenced by the social context (Clarke & Hollingsworth, 2002; Illeris, 2007), which means that attempts at influencing teacher behaviour have to be adjusted to individual teachers in their specific circumstances and settings, and that it is impossible to promote change through a pre-planned, fixed curriculum. In other words, we need a shift in focus from the curriculum to the learner (Korthagen et al., 2006).

Hence, a possibly inconvenient truth is that a central problem in educational change may lie in a one-sided rational approach to teacher learning, as if we can change teachers by merely influencing their thinking. This implies a need for learning in those responsible for teacher education programmes or innovation projects: people who wish to try and influence teacher behaviour may themselves have to learn more about what actually guides teacher behaviour and teacher learning and could often take the affective and motivational dimensions more seriously (Van Veen & Slegers, 2006).

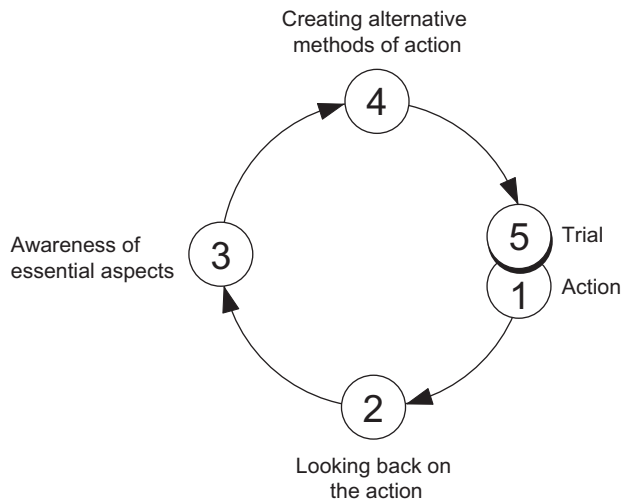


Figure 2. The ALACT model of reflection (Korthagen et al., 2001).

4. Reflection and learning from experience

Above we already noted that both beginning and experienced teachers are often unaware of their own behaviour and its sources. Still, we may expect from professionals that they are able to reflect on their functioning (Calderhead & Gates, 1993). This makes reflection an indispensable element in professional learning (Schön, 1987; Vermunt & Endedijk, 2010). As a result, reflection has become a keyword in the education of teachers and other professionals. In an empirical analysis of practitioners in a number of professions, Van Woerkom (2003) showed that strong professionals can indeed be characterised by the fact that they regularly reflect on their experiences with the aim of improving their future behaviour. In other words, strong professionals learn from their experiences in a conscious and systematic manner through reflection.

However, the focus on reflection is often problematic in teacher education. Although teacher educators may emphasise reflection, the question is what they mean by the term. In practice, views of reflection differ substantially (Day, 1999). Most conceptualisations of reflection seem to draw upon Dewey (1910, p. 6), who defined reflection as ‘active, persistent and careful consideration’. However, there are not so many publications presenting specific guidelines for *how to do this*. As a result, student teachers as well as experienced teachers often consider reflection as something vague, if not downright useless (Cole, 1997). Korthagen et al. (2001) describe a fairly simple but effective five-phase model for reflection that appears to give support to teachers in how to go through a reflection process. It is called the ALACT model, named after the first letters of the five phases (Figure 2). It is now in use in a variety of countries and has the advantage of being fairly simple, while at the same time offering concrete support.

In phase 2 and 3 of this model, the reflection should not only focus on the rational aspects playing a role in phase 1 but also the emotional and motivational aspects. As such, the ALACT model is less oriented towards rational analysis than other well-known models, such as the Action Research Cycle (Act, Observe, Reflect, Plan, Act; Kemmis & McTaggart,

1981) or Kolb's (1984) model (Concrete Experience, Reflective observation, Abstract conceptualisation, Active experimentation, Concrete Experience). A focus on reflection as concretised by the ALACT model helps teachers in developing their own personal theories about teaching and learning, of course under the guidance of experienced experts (*guided reflection*). As these theories are grounded in the teachers' own experiences (phase 1 of the ALACT model) and the gestalts triggered in these teachers during the experiences, such personal theories are much more intertwined with practice and thus more relevant to teachers than much of the formal theory presented in traditional theory-based approaches to teacher education. Hence, a focus on promoting reflection as defined by the ALACT model implies a fairly radical shift in comparison with the traditional theory-into-practice model of teacher development. If we take the above analysis seriously, reflection is not just an interesting addition to a traditional view of teacher education, but will necessarily be the basis of teacher learning. As such, the importance of a strong reflection-based approach may represent another inconvenient truth to many policy-makers in education and even to some teacher educators, namely that we will have to focus on individual teachers and support them in their idiosyncratic learning processes. We can then no longer rely on standardised approaches to teacher learning, and no longer will 'good teaching' mean the same to everybody, as teachers will differ in their experiences, their thinking, feeling and wanting.

Hopefully, people charged with the promotion of teacher learning may become convinced of the necessary change in perspective when comparing the limited outcomes of traditional teacher education with those of approaches starting from teachers' actual concerns and experiences instead of from theory, and focusing on promoting guided reflection, taking thinking, feeling, as well as wanting into account (Korthagen et al., 2001). Such an approach starts from students' real experiences and from what is elicited in them as persons. Various evaluative studies show that this so-called *realistic approach* does have a positive impact on teacher learning and on the behaviour of graduates from realistic teacher education programmes, for instance, studies in which student teachers were followed into their first years in the teaching profession (Brouwer & Korthagen, 2005; Korthagen, 2010).

For example, an evaluative study of a Dutch realistic teacher education programme preparing for secondary education showed that 71% of a sample of graduates of a realistic programme ($n = 81$) rated their professional preparation as good or very good study (*Research voor Beleid*; Luijten, Marinus, & Bal, 1995; Samson & Luijten, 1996). This is a remarkable result, as, in the total sample of graduates from all Dutch teacher education programmes preparing for secondary education ($n = 5135$), this percentage was only 41% ($p < 0.001$).

Even more convincing is a study among 357 student teachers, carried out by Brouwer and Korthagen (2005). It focused on the effects of a realistic teacher education programme on the actual teaching behaviour of its graduates. Data were collected at various moments during the programme and during the first two years in the profession, showing that the graduates demonstrated the kind of teaching behaviour that was aimed at in the programme. The authors conclude that teacher education does have the potential to make a difference, but that much depends on the approach chosen.

5. Meaning-oriented reflection

Characteristic of this successful approach to teacher education is the focus on guided reflection on practical experiences. However, there is still a risk that reflection is used in a merely

Table 1. Questions supporting the transition from phase 2 to phase 3.

0. What is the context?	
1. What did I think?	5. What did the pupils think?
2. How did I feel?	6. How did the pupils feel?
3. What did I want?	7. What did the pupils want?
4. What did I do?	8. What did the pupils do?

cognitive manner, overlooking the broader view of the sources of teacher behaviour discussed above. As an example, let us consider a teacher named Susan, who is struggling with classroom discipline. After her lesson, Susan might think: ‘in the next lesson I will have to be more strict’. Not only does Susan then jump from phase 2 to phase 4, skipping phase 3, but also this is also an example of a rational analysis which does not include awareness of what is really going on during the lesson inside Susan and her pupils in terms of the affective and motivational dimensions. As a result, this teacher runs the risk of trying a superficial, ineffective solution in the next lesson. The moment Susan notices that her solution does not really work she may even conclude that reflection is apparently useless, as some teachers actually do (Cole, 1997). What is needed, is a deeper awareness of the essence of the problem (phase 3), which can only be reached through a more detailed reflection in phase 2, a reflection including the dimensions of thinking, feeling, wanting and acting, as discussed in the previous section.

As these dimensions do not only play a role in the teacher herself, but also in the pupils, the questions in Table 1 may support a more effective reflection process, especially when Susan will try to answer all the questions and look for frictions between the various areas in Table 1.

For example, Susan may discover a discrepancy between what she wanted and what she did, or a discrepancy between what she wanted and how the pupils felt and what *they* needed or wanted. It will be clear that through such awareness, phase 3 and 4 can become much more fruitful. Perhaps Susan may become aware that as a result of her lack of certainty, she had hardly given attention to what she wanted and the needs of the children, something that many beginning teachers struggle with (cf. the example of Albert above). This may stimulate Susan to think more about motivating the children in her next lesson. If she concretises this idea, she will arrive at another strategy than her original idea of being more strict. But even then, reflection seems also necessary on the gestalts triggered in her during the lesson, as these made her behave in the way she had done previously. She may then become aware that her uncertainty caused her to close her eyes to what was going on inside the children. Such a phase 3 reflection would further deepen phase 4, since motivating the pupils will probably only work well if this teacher is really aware of what is happening in the children.

This example shows the important difference between *action-oriented* and *meaning-oriented reflection* (Hoekstra, 2007), the latter being ‘oriented toward understanding underlying processes’ (Mansvelder-Longayroux, Beijgaard, & Verloop, 2007, p. 57). The fact that teachers rarely have time to reflect often causes them to focus on *what to do* or *do better* (action-oriented reflection), in other words to quickly jump from a superficial phase 2 to phase 4 and skip the deeper understanding of the meaning of the situation under reflection. The example of Susan clarifies how ineffective the reflection can then become, compared to an attempt to become aware of what was essential in the situation. Hence, it is no surprise that in her empirical study of teacher learning, Hoekstra (2007) found that in the long run,

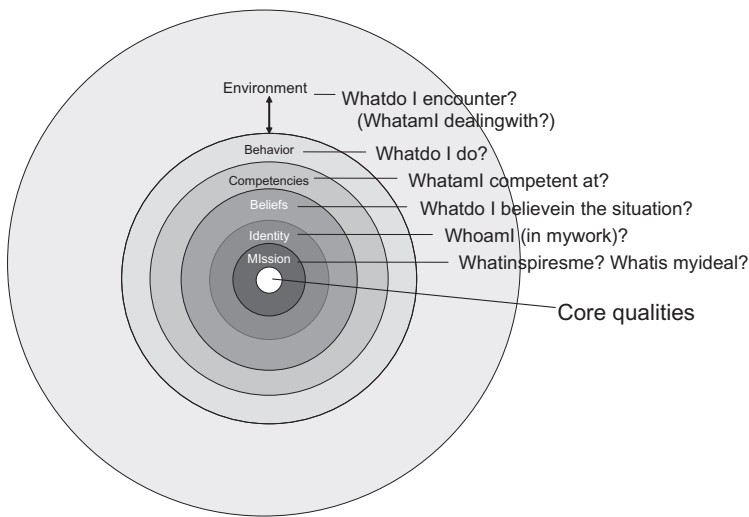


Figure 3. The model of levels in reflection (the onion model; Korthagen, 2004).

meaning-oriented reflection contributes to professional development, whereas action-oriented reflection hardly ever does.

The reflection model in Figure 2 does not provide guidelines for how to arrive at such meaning-oriented reflection. It does show that phase 3 is important, but as it is only a phase model, it does not say much about the *content* of a teacher's reflection. For this purpose, the *model of levels of reflection* (Figure 3), or briefly the *onion model*, is more helpful.

This model shows various levels, or layers, and as such, it clarifies that in order to find a deeper meaning in a teaching situation, one has to include the more inner levels (Korthagen, 2004). In Susan's case, this means that she will not only have to reflect on what was happening in her classroom (the layer of the environment), and about what to do (the layer of behaviour), but also about her own beliefs in the situation, and about the question of what kind of teacher she wants to be, and what ideal she has: Is she really interested in connecting with her pupils, also at the dimensions of feeling and wanting?

The assumption is that teachers will become more effective if all the layers of the onion model are aligned, i.e. if what inspires them concurs with how they define their role, with how they think about and act in specific teaching situations, and with what is suitable in the environment (e.g. a classroom). This means that meaning-oriented reflection should ideally include all the layers of the onion model. Such deep reflection is called *core reflection* (Korthagen, Kim, & Greene, 2013) and has been shown to have a strong impact on teacher learning and effective teaching behaviour. The relevant empirical studies will be summarised later in this article, after a discussion of teachers' core qualities (see the inner part of the onion model), which also receive much attention in core reflection.

6. Core qualities

During the last decade, much of the attention to teacher learning has focused on the acquisition of *teacher competencies*. In many countries, lists have been created with the most important competencies teachers should possess. As this seems a clear and solid way to

‘produce’ good teachers, this view is strongly supported by policy-makers (Becker, Kennedy, & Hundersmarck, 2003), although it is known for quite some time that the validity, reliability and practicality of such an approach is questionable (Korthagen, 2004). The most fundamental critique of the competency-based approach is that it is actually impossible to describe the qualities of good teachers in terms of competencies (Barnett, 1994; Hyland, 1994). In addition, Struyven and De Meyst (2010) state that ‘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’ (p. 1507). Lucas (1999) concludes that competency testing has little predictive value, and mainly serves the goal of ‘providing public appearance of quality assurance’ (p. 193). What seems to be disregarded in this view of teacher learning is what in the centre of the onion model (Figure 3) is shown as a teacher’s *core qualities*. This term refers to people’s personal qualities, such as creativity, trust, care, courage, sensitivity, decisiveness, spontaneity, commitment and flexibility. Tickle (1999) considers them essential when thinking about good teaching.

Attention to such personal qualities has been promoted by positive psychology, which focuses on people’s well-being and positive growth. The founders of this approach, Seligman and Csikszentmihalyi (2000) stated that for too long, psychology had focused on pathology, weakness and damage done to people, and hence on ‘treatments’. They maintained that ‘treatment is not just fixing what is broken; it is nurturing what is best’ (p. 7). It is not difficult to relate this perspective to certain approaches to the improvement of education, including most competency-based approaches, which are often rooted in a deficit model. Many researchers in education have emphasised the ineffectiveness of such models (e.g. Clarke & Hollingsworth, 2002; Guskey, 1986).

Partly returning to the roots of humanistic psychology, but also critical of its lack of empirical research, Seligman and many other positive psychologists emphasise the importance of positive traits in individuals, which they call *character strengths* (Aspinwall & Staudinger, 2003). Examples often mentioned in this field are creativity, courage, kindness, fairness and humour. In a study of Slovenian in-service and pre-service teachers, Gradišek (2012) found that their most important core qualities were fairness, kindness, honesty and love.

The way Seligman and other psychologists write about strengths, clarifies that these are synonymous to what Ofman (2000, p. 33) calls *core qualities*. Ofman states that such positive personal qualities are always potentially present and the distinction between qualities and competencies lies primarily in the fact that qualities come from the inside (although they can be stimulated from the outside, for example, by a coach), while competencies are acquired from the outside. This is in accordance with the onion model: competencies such as the ability to take into account different learning styles or to reflect systematically are located in the layer of competencies, while core qualities (e.g. curiosity or commitment) influence such competencies ‘from the inside out’. Almaas (1987, p. 175) calls them ‘essential aspects’, which he considers absolute in the sense that they cannot be further reduced or dissected into simpler components. This is another difference with competencies. In the core reflection approach, core qualities are considered as the driving force of productive teacher learning, and also as fundamental to the development of competencies (Korthagen et al., 2013).

7. What is a good teacher?

Now, what is a good teacher? Is this someone who shows the correct competencies, summarised in standardised lists? Or is it someone who is able to use his or her own unique core qualities and connect them with the other onion layers, including the layer of competencies? Korthagen et al. (2013) proposed a view of an effective teacher as someone who is strong at aligning all the layers of the onion model, and who thus impacts her environment on the basis of a certain coherence between her core qualities, ideals, sense of identity, beliefs, competencies, behaviour and the characteristics of the environment, e.g. a classroom or school. We may then define professional development as the process of working towards such coherence. Such a definition may solve the often encountered tension between the personal and the professional aspects of teaching (Nias, 1996), and help us arrive at an all-encompassing view of what it means to be a good teacher. Such an integrative view is still not common in the field of teaching and teacher education, let alone its consequences for professional development, although the emphasis on core qualities, and on the affective as well as the cognitive, has already been around for more than a decade.

The onion model includes competencies as an important layer, but also shows that it is the relation between this layer and the other layers that makes the difference in a teacher. The more a teacher's core qualities influence her professional role and behaviour, the more positive emotions will evolve in the teacher and the more effective the teacher will be (Boniwell, 2012; Fredrickson, 2009). It is important to realise that arriving at a state of complete coherence between the onion layers in all situations may take a lifetime to attain, if attained at all.

We can thus support teacher learning by promoting their core reflection, and by giving them regular feedback on the level of coherence between the onion layers. If we accept this view, it might lead to a radical reframing of what teacher learning and teacher assessments are about. Hence, a possibly inconvenient truth may be that we cannot grasp teacher quality with any standardised list. In addition, supporting teacher learning would mean that facilitators of teacher learning should be competent at promoting alignment of the onion layers in teachers, which requires that they themselves would embrace this view of professional learning and thus also work towards alignment of the layers in themselves (Kim & Greene, 2011).

8. Empirical evidence

A variety of studies have yielded evidence for the effectiveness of the above view of professional development. For example, a study by Meijer, Korthagen, and Vasalos (2009) describes the learning process of a teacher who was being coached with the core reflection approach. In this study, both the teacher's growth and the coaching interventions are described in detail and illustrated with quotations from coaching sessions, logbooks and interviews. The authors show that the teacher started to reframe her previously limited and negative self-concept (layer of identity) and her beliefs (layer of beliefs) about the educational situations she encountered, which was an emotional process for her. As a result, she started to act more upon her ideals (level of mission), which led to effective changes in her classroom behaviour.

Another study, by Hoekstra and Korthagen (2011) also focused on the professional learning of one teacher. The authors describe Nicole, a veteran teacher, who struggled with

implementing a new pedagogy requiring her to teach in a more pupil-oriented way. Detailed descriptions of the coaching interactions and in-depth analyses of Nicole's learning process illustrate that core reflection helped Nicole realise her ideals by drawing more strongly on her core qualities. As Nicole had also been studied intensively before the period of coaching started, and data were collected about her classroom behaviour and her beliefs before and after the coaching, the researchers found statistically significant shifts that took place in Nicole, both in her beliefs and her behaviour. In addition, the approach supported Nicole in accepting herself as a learner as being a part of her professional identity.

A study by Attema-Noordewier, Korthagen, and Zwart (2011) describes a trajectory for professional development based on core reflection, carried out with entire teams of experienced teachers in six primary schools. This approach was essentially bottom-up, as the teachers' qualities and mission were taken as a starting point for professional growth. Quantitative and qualitative instruments were used for analysing the outcomes of the approach for teachers and pupils, and for the school culture as a whole. At the teacher level, the researchers found increased feelings of autonomy, more self-efficacy regarding the coaching of pupils and colleagues, new or renewed insights into teaching and learning, and increased awareness of core qualities, of pupils, colleagues and themselves. For most teachers, the learning process took place at all onion levels, which is called *multi-level learning*. At the pupil level, the teachers reported an increase in the pupils' working and communication skills and in the pupils' attitudes.

Adams, Kim, and Greene (2013) did a study on the role of core reflection in the professional development of beginning teachers in the US. They highlight their roles as facilitators of a beginning teacher group over a period of four years, and present scenarios of six new teachers, which include many literal quotes from these teachers. The authors analysed the scenarios, searching for patterns in how the group's use of core reflection and the six individual teachers' learning and behaviour developed over time. In a detailed way, this study shows that core reflection influences the actualisation of core qualities in beginning teachers, and reveals how this leads to new insights, self-understandings and behaviours.

9. Main conclusions

The essence of the above analysis is summarised in Figure 4, which illustrates that in teacher learning not only the link between practice and theory is important, but most of all the connection with *the person of the teacher* (Kelchtermans & Vandenberghe, 1994). Although a lot of teacher behaviour and learning seem to take place unconsciously, in-depth reflection is an important instrument in establishing fruitful connections between practice, theory and person.

We have discussed that:

- (1) many processes guiding behaviour take place without conscious awareness, and as a result, teacher learning is often *unconscious learning*.
- (2) in the person, the cognitive, affective and motivational sources of behaviour are intertwined, and embedded in a social context, and therefore, teacher learning is *multi-dimensional learning*.
- (3) learning processes take place at various levels in the onion model, i.e. teacher learning is *multi-level learning*.

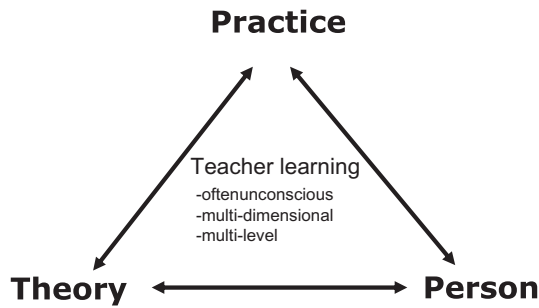


Figure 4. Teacher learning takes place in the connection between theory, practice and person.

Taken together, these features may look rather complex, and indeed, that is exactly the point. Teachers' learning processes are complex and dynamic (Hoban, 2005; Jörg, 2011). They are multi-dimensional, multi-level in nature and often unconscious. If we accept that as our point of departure, it is possible to design an effective approach to supporting teacher learning. Crucial is that such an approach builds on the concerns and gestalts of the teacher, and not on a pre-conceived idea of what this teacher should learn. This may also be an explanation of the positive outcomes of communities of learners in which teachers collaborate, as scholars studying teacher change emphasise (see, e.g. Fullan, 2007; Whitehead & Fitzgerald, 2007). Such communities often provide the safety to bring in one's real concerns and feelings, which are grounded in everyday practices, and if the community functions well, genuine attention will be given to these affective and motivational aspects in the person. Only then can effective learning take place.

10. Consequences for professional development

Our discussion leads to fundamental consequences for professional development and educational change. Above, we have noted that this is a problematic area, which can partly be explained by an over-emphasis on either theory or practice. Often the person of the teacher and the practice in which he or she works, receives too little attention (Darling-Hammond & Richardson, 2009). Although it seems an attractive idea to introduce evidence-based theory in education (cf. Hammersley, 2007) and 'train' teachers in the use of this theory, there is much evidence that this does not work (Darling-Hammond & Richardson, 2009; Short, 2006; Wideen et al., 1998). Educationalists need a more realistic vision, which means that not only practice, but most of all the human beings working in the contexts of their schools become the starting point for change processes (Postholm, 2012). Otherwise, the school context will have an influence of its own, often counterbalancing attempts to change teacher behaviour.

What do the teachers think, feel, want, what are their ideals, what inspires them, what kind of teachers do they want to be? And above all: What is *their* potential? The challenge for innovators or in-service trainers is to take the responsibility for linking the personal strengths of people in schools with academic knowledge. This is contrary to teachers having to deal with expert knowledge that does not make them enthusiastic.

This describes what I call *professional development 3.0*. In this view of professional development, the often unconscious, multi-dimensional, and multi-level nature of teacher

learning is taken seriously. This implies that the outcomes of learning processes in teachers cannot always be predicted, as each individual teacher should be taken seriously and the process should build upon his or her concerns, *gestalts*, personal strengths and mission, within the context of their actual work (Fullan, 2007). Professional development 3.0 can thus never be a one-shot approach (Darling-Hammond and Richardson, 2009), or follow a 'one solution for all' strategy (cf. Borko, 2004; Voerman, 2014). For some teachers, approach x will work well, for another strategy y is needed. The building of communities of practice and the organising of individual or group coaching, including peer coaching, seem pivotal to success, as Darling-Hammond and Richardson (2009) emphasise in their review of the literature on teacher learning. These authors add that such approaches need to be intensive and sustained over time. This concurs with our above analysis of the sources of teacher behaviour, as only through individualised and long-term investments can individual concerns and *gestalts* be addressed. And only then is it possible to take personal qualities and ideals as the starting point for learning.

This view of teacher learning and professional development requires quite a shift in perspective, especially for many policy-makers. As Fullan (2006) notes in his overview of what is known about teacher change, 'the use of change knowledge does not represent a quick fix, which is what many politicians seek' (p. 13). An inconvenient truth may be that effective professional development 3.0 is first of all *value-based* (Biesta, 2010), which means that it starts from what practitioners themselves value in their own work. It is also much more open-ended, and to a certain degree more unpredictable than traditional approaches, as it often requires deep cultural change (Fullan, 2006). On the other hand, research studies on such an approach to professional development have shown that processes in teachers, although different, share certain general characteristics. In the first place, they really touch the person, and teachers become enthusiastic and experience more autonomy and self-efficacy (Attema-Noordewier et al., 2011), which enhances their learning. This seems also important in the light of current problems in many countries with teacher retention. Another outcome is that these teachers get acquainted with a new view of learning, namely as a process that starts bottom-up, i.e. from who the learner is.

Most of all, professional development 3.0 connects the professional with the personal aspects of learning. The studies on core reflection cited above show the need to address the whole person in efforts to bring about professional learning and also that this can lead to the reframing of deeply ingrained limiting beliefs and to new and effective behaviour in the classroom. In this respect, it is remarkable that until recently, in the literature on teacher learning, relatively little attention has been devoted to professional development at the layers of teachers' professional identity and mission, although there are inspiring exceptions (e.g. Hansen, 1995; Intrator & Kunzman, 2006; Mayes, 2001; Palmer, 1998). These deeper layers may in fact be the driving force behind any effective form of teacher learning. Therefore, I feel that Ayers (2001) summed up the essence of professional development 3.0 beautifully when – talking about educators – he stated that 'our calling after all, is to shepherd and enable the callings of others'.

Highlights

- A critical analysis of the literature on linking theory and practice.

- An overview of sources of teacher behaviour and consequences for teacher learning.
- A new and integrated view of professional development, supported by research evidence.

Disclosure statement

No potential conflict of interest was reported by the author.

Notes on contributor

Fred Korthagen is a Professor Emeritus of Utrecht University, the Netherlands. His academic fields are the professional development of teachers and teacher educators, and the pedagogy of teacher education. He published numerous articles and books on these topics in various languages, and he gave keynotes on conferences and workshops all over the world. He received awards for his publications from the American Educational Research Association (AERA) and the Association of Teacher Educators (ATE). In 2015, he became fellow of AERA.

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