
MAKING TEACHER EDUCATION RELEVANT FOR PRACTICE: THE PEDAGOGY OF REALISTIC TEACHER EDUCATION

FRED A. J. KORTHAGEN

VU University, Amsterdam

Abstract: *The gap between theory and practice in teacher education has led to much criticism regarding the effectiveness of teacher education. In this article, the causes of this gap are discussed and related to a framework for teacher behaviour and teacher learning. Using this framework, the so-called 'realistic approach' to teacher education has been developed, which marks a new direction in the pedagogy of teacher education. This approach, developed at Utrecht University in the Netherlands, is described in this article, and its basic principles are discussed. Several evaluative studies into the realistic approach show its positive outcomes. Important conclusions are presented for (1) programme design, based on (2) a view of the intended process of student teacher learning, (3) the pedagogical interventions and arrangements used, and (4) the professional development of teacher educators.*

Key words: *gap between practice and theory, teacher education, realistic approach, reflection, teacher learning, empirical support for the realistic approach*

Introduction

At many places in the world, including the Czech Republic, there is a growing emphasis on bridging theory and practice in teacher education. In many countries, school-based teacher education has been introduced in an attempt to overcome the criticism that teacher education is not sufficiently relevant to practices in schools (Ashton, 1996). However, without careful consideration of the pedagogy used in teacher education, there is a risk that this move towards schools is counterproductive, as will be explained below.

In this context, it is a positive development that the book entitled *Linking practice and theory, the pedagogy of realistic teacher education* (Korthagen et al., 2001) has

been translated into several languages and has recently been published in Czech (Korthagen et al., 2011).

In the present article, the main issues that are elaborated in this book will be discussed. First, we will focus on the gap between theory and practice, which has made teacher education a difficult enterprise. Next, the causes of this gap will be analysed.

Central to the article is the presentation of a three-level model of teacher behaviour and teacher learning. This model clarifies that professional learning is a bottom-up process taking place in the individual student teacher. Based on the model, the so-called 'realistic approach' to teacher education will be described. It aims at supporting the bottom-up process, starting from experiences and leading to fruitful knowledge about teaching which really influences teachers' practices. After presenting the central principles of realistic teacher education, the approach will be illustrated by looking at one typical programme element, the so-called *one-to-one*.

Evidence of the effectiveness of the realistic approach to teacher education will be presented through a brief description of a number of evaluative studies, which show that the approach really makes a difference. Finally, important conclusions will be presented regarding (1) programme design, based on (2) a view of the intended process of student teacher learning, (3) the pedagogical interventions and arrangements used, and (4) the professional development of teacher educators. This will also lead to some critical remarks about current professional habits in teacher education.

The Gap Between Theory and Practice

The gap between theory and practice has been a perennial issue. As early as the beginning of the 20th century, Dewey (1904) noted this gap and discussed possible approaches by which it might be bridged (see also Shulman, 1998). Nevertheless, in the course of the more than 100 years since, the relationship between theory and practice has remained the central problem of teacher education world-wide (Lanier & Little, 1986).

What has become clear is that the idea of simply transmitting important pedagogical knowledge to teachers, hoping that they will apply this knowledge in their practices, does not really work. Wideen, Mayer-Smith, and Moon (1998, p. 167) describe this traditional view 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.

Many other researchers, too, have critiqued this model. Clandinin (1995) calls it "the sacred theory-practice story", Schön (1983, p. 21) speaks about "the technical-

rationality model”, and Carlson (1999) names it the “theory-to-practice approach”, and discusses its limitations. As Barone et al. (1996) argue, this approach often has led to a collection of isolated courses in which theory is presented with hardly any connection to practice, based on the following assumptions:

1. Theories help teachers to perform better in their profession;
2. These theories must be based on scientific research;
3. Teacher educators should make a choice concerning the theories to be included in teacher education programmes.

The traditional model has been dominant for many decades (Sprinthall, Reiman, & Thies-Sprinthall, 1996; Imig & Switzer, 1996, p. 223), although many studies have shown its failure in strongly influencing the practices of graduates of teacher education programmes. A thorough overview of these studies is presented by Wideen, Mayer-Smith, and Moon (1998), who conclude that the impact of traditional teacher education on their students’ practices seems rather limited, a conclusion also drawn by the Research Panel on Teacher Education of the *American Educational Research Association* (Cochran-Smith & Zeichner, 2005). Several of the cited studies show that beginning teachers struggle for control, and experience feelings of frustration, anger, and bewilderment. The process they go through is more one of survival than of learning from experience.

Causes of the Gap

The causes of these problems are well-documented in the literature.

A first, oft-mentioned cause of the theory-practice divide has to do with the learning process within teacher education itself, even before the stage in which theory can be applied to practice. Student teachers’ prior knowledge plays a powerful role in their learning during a teacher education programme (e.g., Wubbels, 1992), and their preconceptions show a remarkable resistance to change (Joram & Gabriele, 1998). In the literature, this has been explained by the many years of experiences that student teachers have had as pupils within the educational system (Lortie, 1975; Brouwer & Korthagen, 2005).

A second, more fundamental cause has been named the feed-forward problem: “resistance from the student teacher at the time of exposure to given learnings and, later, protestations that the same learning had not been provided in stronger doses” (Katz et al., 1981, p. 21; see also Bullough, Knowles, & Crow, 1991, p. 79). This problem can also be stated as follows: in order to learn anything during teacher education, student teachers must have personal concerns about teaching or they must have encountered concrete problems (Korthagen et al., 2001). Otherwise, they do not perceive the usefulness of the theory.

A third cause has to do with the nature of teaching. Hoban (2005, p. 9) states that “what a teacher does in a classroom is influenced by the interaction of many elements such as the curriculum, the context, and how students respond to

instruction at one particular time". Hoban continues by saying that this view of the nature of teaching necessitates 'holistic judgement' (cf. Day, 1999) about what, when and how to teach in relation to a particular class, and this is something for which it is hard to prepare teachers. Moreover, practice is generally ambiguous and value-laden (Schön, 1983), whereas teachers often have little time to think and thus need prompt and concrete answers to situations (Eraut, 1995). What they need is rather different from the more abstract, systematised and general expert-knowledge that teacher educators often present to student teachers (Tom, 1997).

Finally, it is not only knowledge that is involved. Many studies on teacher development show that teaching is a profession in which feelings and emotions play an essential role (Day, 2004; Hargreaves, 1998), but "the more unpredictable passionate aspects of learning, teaching and leading (...) are usually left out of the change picture" (Hargreaves, 1998, p. 558). The problem of promoting fundamental professional change is first of all a problem of dealing with the natural emotional reactions of human beings to the threat of losing certainty, predictability or stability. This affective dimension is too much neglected in the technical-rationality approach, which seems to be another cause of the gap between theory and practice.

Although these causes of the gap between theory and practice are well-known, it is remarkable that many teacher education programmes still reflect the traditional 'application-of-theory model' described above. In his work as a trainer of teacher educators in various countries, the author of this article has had the opportunity to analyse the 'everyday pedagogy' of teacher education. It has clarified that basically the traditional view of teacher education has not changed and even that many "new" approaches often take the form of sophisticated procedures to try and interest student teachers in a particular theory, for example by using video cases or having students create portfolios. This means that the fundamental idea that there exists theory that should be transferred to student teachers still represents a very dominant line of thought. The fundamental conception inherent to this line of thought is that there is a gap to be bridged. One often forgets that it was the *a priori* choice of the educator that created this gap in the first place. In line with this, Robinson (1998, p. 17) states: "[N]arrowing the research-practice gap is not just a matter of disseminating research more effectively or of using more powerful influence strategies."

The Essence of Teacher Behaviour and Teacher Learning

In order to further develop our understanding of the problems, but also to better realise the opportunities we have in teacher education, there is a need for a theory on teacher behaviour and teacher learning. For this purpose, Korthagen and Lagerwerf (2001) developed a model which contributes to a deeper insight into the phenomena described above (see Figure 1).

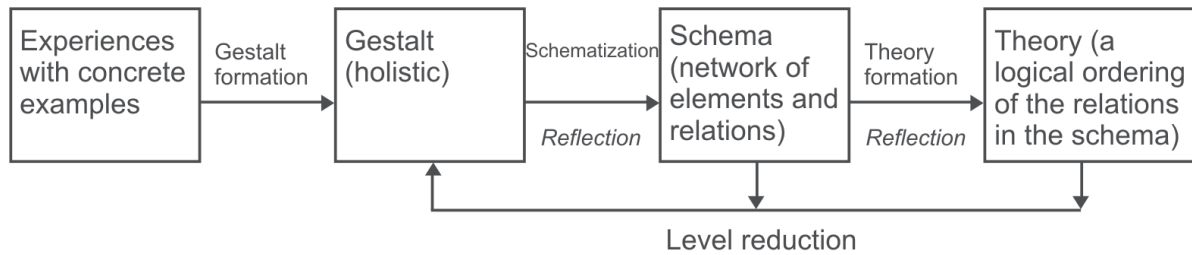


Figure 1. The three-level model and the accompanying learning processes.

The model distinguishes between three main levels, the first of which is the *gestalt level*, which is rooted in practical experiences, and is often unconscious. Through reflection on the gestalt level, teachers may develop a *personal practical theory*, and, at the next level, a logical and adequate ordering in such a theory concurring with research outcomes, called *formal theory*. The three levels will be explained below.

The gestalt level

Based on a general psychological perspective, Epstein (1990) argues that the manner in which humans deal with most situations is mediated by the so-called *experiential body-mind system*, which processes information in a rapid manner. According to Epstein, the experiential system functions through emotions and images in a holistic and often subconscious manner, which means that the world is experienced in the form of wholes, in which cognitive and emotional aspects are interconnected (Epstein, 1990, p. 168; Epstein, 1998; cf. Bargh, 1990). Epstein's analysis is highly relevant to the teaching domain, as many studies on teacher routines (e.g., Halkes & Olson, 1984) emphasise that automatic or mechanical behaviour is characteristic of much teaching. Dolk (1997) states that most teacher behaviour is *immediate behaviour*, i.e. behaviour occurring without reflection. A similar position is taken by Eraut (1995).

This view implies that much of a teacher's behaviour is grounded in unconsciously and instantaneously triggered images, feelings, notions, values, needs or behavioural inclinations, and often in combinations of these aspects. Precisely because they often remain unconscious, they are intertwined (Lazarus, 1991) and thus form a whole that Korthagen et al. (2001) call *a gestalt*, based on Korb, Gorrell, and Van de Riet (1989). This implies a broadening of the gestalt concept, which was originally used just to describe the organisation of the visual field (Köhler, 1947). A gestalt is considered to be a dynamic and constantly changing entity encompassing the whole of a teacher's perception of the here-and-now situation, i.e. sensory perceptions of the environment as well as images, thoughts, feelings, needs, values, and behavioural tendencies triggered by the situation. This implies an holistic view, which concurs with the observation by brain researcher Damasio (1994, p. 83–84) that behaviour is grounded in many parallel bodily systems, and that emotion is strongly linked to the primary decision-making process (see

Immordino-Yang & Damasio, 2007 for a more detailed elaboration and a model of the complex relations between cognition and emotion).

The notion of a gestalt can be illustrated with an example from a study by Hoekstra et al. (2007) into informal learning among 32 teachers. The aim of the research study was to find relationships between the teachers' behaviours and the accompanying internal processes, and their influence on their professional learning in the workplace. The 32 experienced teachers were monitored over a period of 14 months with the aid of questionnaires, digital reports on their learning experiences, and interviews. In an in-depth component of the study, four of the 32 teachers were observed more intensively, using video recordings of their teaching and post-lesson interviews. One of the teachers, Albert, was observed while teaching on the topic of potential energy. It seemed that the pupils were lost while he kept on talking. In the interview after the lesson, Albert said:

I later noticed they did not have a clear idea of what that [potential energy] was. (...) And looking back, I am not quite satisfied with how I've done it. Some concepts were not clear enough to the pupils. To understand the whole story, you actually have to know more about the phenomenon 'potential energy'. I ignored that concept, because it had been talked about in the previous assignment. But in that very assignment, the question of 'what exactly is potential energy?' had not been dealt with either.

What we see here is quite a common didactical problem. The teacher went on, although, from the perspective of his objectives, something seemed to be going wrong. A sequence of actions unfolds, probably triggered by the (conscious or unconscious) need to get the concept of potential energy across, based on a (perhaps not completely conscious) notion that the concept had already been dealt with. After the lesson, Albert becomes aware of the fact that his teaching strategy was not very effective, and he also reflects on why he did what he did. This may have been triggered by the fact that he was being interviewed about the situation. In many cases, however, teachers are not really aware of the effects of their behaviour and its underlying causes, as several authors (e.g., Clark & Yinger, 1979) have found.

The level of personal practical knowledge

As noted, many of the sources of a teacher's behaviour may remain unconscious to the teacher. However, through reflection, he or she may become aware of at least some of these sources. In the example, Albert became aware of an underlying cause of his behaviour, namely his (wrong) idea about the previous assignment, and the effects of this idea on what happened in the situation. During such a reflection process, in this case a didactical reflection, notions or concepts become interrelated. Hence, when a teacher reflects, often a previously unconscious gestalt develops into a conscious network of concepts, characteristics, principles, and

so on, which is helpful in describing practice. This cognitive network is called a *personal practical theory*. It is very much coloured by the desire to know how to *act* in particular situations, as opposed to having an abstract *understanding* of them.

The level of formal theory

If someone aims at developing a more *theoretical understanding* of a range of similar situations (as researchers often want and do), this may lead to the next level. This is the level at which a logical ordering is constructed in the personal practical theory formed before: the relationships within one's cognitive network are studied or several notions are connected into one coherent theory. One can only speak about reaching the third level if the resulting cognitive network concurs with formal scientific theory.

Interestingly, in the study by Hoekstra et al. (2007) mentioned above, no examples were found in which teachers demonstrated this level. Perhaps this is understandable. The third level is aimed at deep and generalised understanding of a variety of similar situations, whereas practitioners often focus on directions for taking action in a particular situation, and as a consequence, often do not reach the level of formal theory. This was also the conclusion reached by an empirical study by Korthagen and Lagerwerf (2001).

Level reduction

If a teacher does reach the theory level, knowledge at this level first has to become part of a personal practical theory if it is to start influencing behaviour; or, even better, it has to be integrated into a gestalt in order to become part of the teacher's routine. This is called level reduction (see Figure 1). Often, however, level reduction does not take place at all, for it requires much practising in authentic contexts, and even then friction may remain between pre-existing gestalts and the new theory. This is an important cause of the gap between theory and practice.

Originally, the three-level model was developed by Van Hiele (1973, 1986) within the context of mathematics education, as an adaptation of Piaget's theory. It concurs with Epstein's (1990, 1998) distinction between an experiential and a rational system within the human organism, which reflects the distinction between the gestalt level on the one hand and two levels on the other. Other authors whose work shows similar lines of thinking are Johnson (1987) and Lakoff and Johnson (1999). They talk about the *embodied mind*, and emphasise the importance of *image schematic structures*, which are of a non-propositional and figurative nature, and mostly unconscious:

These are gestalt structures, consisting of parts standing in relations and organized into unified wholes, by means of which our experience manifests discernible order. When we seek to comprehend this order and to reason about it, such bodily based schemata play a central role. For although a given image

schema may emerge first as a structure of bodily interactions, it can be figuratively developed and extended as a structure around which meaning is organized at more abstract levels of cognition." (Johnson, 1987, p. xix-xx).

The idea that a great deal of people's behaviour is grounded in unconscious gestalts, concurs with findings from neuroscience showing that much of our decision-making is rooted in subconscious processes in our brain, and that decisions are made unconsciously, even before our conscious mind thinks we make such decisions deliberately (William, 2006). Brain researcher Gazzaniga (1999, p. 73) points towards the same phenomenon: "Major events associated with mental processing go on, measurably so, in our brain before we are aware of them."

More empirical data supporting the three-level model are described in Korthagen and Kessels (1999), Korthagen and Lagerwerf (2001, pp. 185–190), and Korthagen (2010).

Realistic Teacher Education

The *realistic approach* is an approach to teacher education that takes into account the above analysis of the gap between theory and practice as well as the above framework regarding teacher learning and teacher behaviour. It was originally developed at Utrecht University in the Netherlands. Its five guiding principles are formulated by Korthagen et al. (2001) as follows:

1. The approach starts from concrete practical problems and the concerns of student teachers in real contexts.
2. It aims at the promotion of systematic reflection by student teachers on their own and their pupils' wanting, feeling, thinking and acting, on the role of context, and on the relationships between those aspects.
3. It builds on the personal interaction between the teacher educator and the student teachers and on the interaction amongst the student teachers themselves.
4. It takes the three-level model of professional learning into account, as well as the consequences of the three-level model for the kind of theory that is offered.
5. A realistic programme has a strongly integrated character. Two types of integration are involved: integration of theory and practice and the integration of several academic disciplines.

Reflection

From the above it is clear that reflection plays an important role in the realistic approach, as it helps to promote level transitions. The approach to reflection used in realistic teacher education is based on an alternation between action and

reflection. Korthagen (1985) distinguishes five phases in this process: (1) action, (2) looking back on the action, (3) awareness of essential aspects, (4) creating alternative methods of action, and (5) trial (see Figure 2). This five-phase model is called the *ALACT model* (named after the first letters of the five phases). The fifth phase is again the first phase of the next cycle, which means that we are dealing with a spiral model: the realistic approach aims at an on ongoing process of professional development.

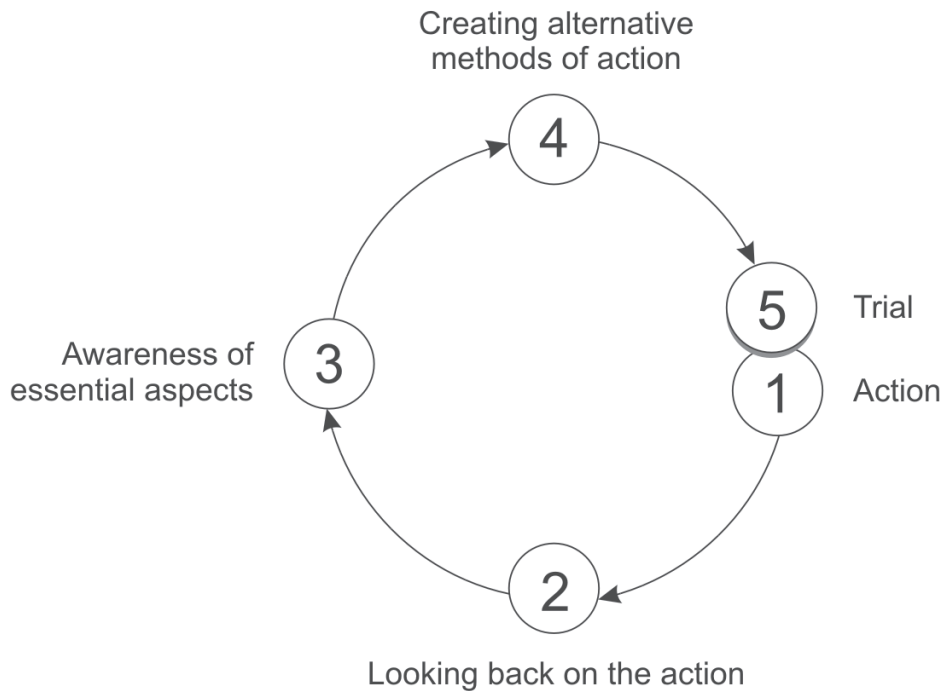


Figure 2. The ALACT model describing the reflection process

Here is an example of a student teacher, Judith, going through the phases of the ALACT model under the supervision of a teacher educator:

Judith is irritated by a pupil named Jim. She has the feeling that Jim always tries to avoid having to do any work. Today she noticed this again. In the preceding lesson the children received an assignment for three lessons to be worked on in pairs; they would hand in a written report at the end. Today, during the second lesson, Judith had expected everyone to work hard on the assignment and to use this second lesson as an opportunity to ask for her help. Jim, however, appeared to be busy with something completely different. In the lesson she reacted to this by saying: "Oh, so again you are not doing what you are supposed to....I think the two of you will again end up with an unsatisfactory result!" (Phase 1: action)

During the supervision, Judith becomes more aware of her irritation and how this influenced the way she acted. When the supervisor asks her how her reaction might have affected Jim, she realises that her irritation may, in turn, have caused irritation in Jim, probably causing him to be even more demotivated in his work on the assignment. (Phase 2: looking back)

By this analysis she becomes aware of the escalating negativity which is evolving between her and Jim and she starts to realise how this leads to a dead end (phase 3: awareness of essential aspects). However, she does not see a way out of the escalation. Her supervisor shows understanding of Judith's struggle. She also brings in some theoretical notions about escalating processes in the relationship between teachers and pupils, such as the often occurring pattern of 'more of the same' (for the underlying formal theory, see Watzlawick, Weakland, & Fisch, 1974) and the guidelines for how to de-escalate by changing this pattern by deliberately giving a positive reaction. This is the start of phase 4: creating alternative methods of action. She compares these guidelines with her impulse to be even stricter and put more constraints on Jim. Finally, she decides to try out (phase 5) a more positive, empathetic approach, which starts by asking Jim about his plans. This is first done in the supervision session: the supervisor asks Judith to practise such reactions and includes a mini-training exercise in the giving of empathetic reactions. If the results of this new approach are reflected on after the try-out in a real situation with Jim, phase 5 becomes the first phase of the next cycle of the ALACT model, thus creating a spiral of professional development.

As we see in the example, during phase 3 of the ALACT model, when the student teacher starts to become aware of the essence of the situation she is reflecting on, the teacher educator can bring in theoretical elements, but these need to be tailored to the specific needs of the student teacher and the situation at hand. As explained above, this changes the nature of relevant theory brought in during a supervisory session: it seldom takes the form of formal theory.

The idea of learning by reflection is in harmony with the three-level model introduced above and can also be applied to other components of teacher education, such as group seminars. The teacher educator may, for example, create an experience in class which is the basis for an ALACT process in the whole group. An example of this is the idea of organising ten-minute lessons given by student teachers to their peers.

The promotion of reflection is not only important for the supporting of level transitions. When teachers learn how to reflect during their preparation for the profession, by systematic use of the ALACT model, for example, they develop a *growth competence*, i.e. the ability to direct their own professional development during the rest of their careers. If they experience how this can be done in collaboration with their peers, this prepares them for peer-supported learning during the rest of their careers, which creates a counterbalance to the often somewhat individualistic culture of teaching that exists in many schools.

An Example: the One-To-One

This Section describes an example of a programme element, namely the one-to-one, which has been developed in response to the problem that teaching a whole class on a regular basis appears to be a complex experience for novice teachers, and that this experience tends to foster gestalts and concerns related to

'survival'. This is why the first teaching-practice period has been simplified. Each prospective teacher gives a one-hour lesson to one high-school pupil once a week for eight weeks. Neither the university supervisor nor the mentor teacher is present during actual one-to-one lessons, but there are supervisory sessions and seminar meetings during the one-to-one period. The lessons are recorded on audio or video, and are subsequently the object of detailed reflection by the student teacher. This reflection is structured by means of the ALACT model.

During the one-to-one period, the student teachers form pairs. Of the eight one-to-one lessons, four are discussed by the student teachers within these pairs, and four lessons are discussed by the pair and the teacher educator. The teacher educator can suggest small theory-based ideas that fit the processes the student teachers are going through. These ideas can be derived from a variety of theoretical backgrounds. After both types of discussion, each student teacher writes a report that brings together the most important conclusions.

A general finding is that by use of audio and video recordings the student teachers rapidly discover that they failed to listen to what the pupil was saying, or started an explanation before the problem was even clear to the pupil. As one of our student teachers put it: "The one-to-one caused a shift in my thinking about teaching, from a teacher perspective to a pupil perspective." This quote is representative of the learning processes of most student teachers in the one-to-one. However, there also appear to be considerable differences between student teachers in terms of what is learnt during such a one-to-one arrangement. To give some examples, one student teacher focused on a lack of self-confidence in the pupil she was working with, and started a search for ways of improving the child's self-image, while another student teacher was confronted with her own tendency to explain things at a fairly abstract level. The latter developed the wish to include more concrete examples.

In sum, the one-to-one gives student teachers many opportunities to learn on the basis of their own experiences and the concerns they develop through these experiences. In this way the student teachers reflect on, and sometimes question, their initial gestalts and develop a personal practical theory that is meaningful to them. In this respect, the one-to-one is a good illustration of realistic teacher education.

Once student teachers have developed their own personal practical theory, it becomes important to offer them theoretical knowledge from professional articles and books in order to deepen, challenge and adapt their personal theories and help them reach the level of formal theory. For this reason, the final part of the Utrecht programme has curriculum elements in which experts in areas such as learning psychology or classroom interaction offer theoretical knowledge to students. It is important at this stage, too, that theory is built onto the experiences and insights the students themselves have already developed.

Empirical Support for the Realistic Approach

As Zeichner (1999) notes, what really happens in teacher education programmes often remains obscure. Processes and outcomes are seldom studied systematically. In contrast to this general picture, the realistic approach is well researched. Of interest are the following evaluative studies, described in more detail in Korthagen et al. (2001) and in the Czech translation of this book (Korthagen et al., 2011).

1. *A national evaluation study* of all Dutch secondary-teacher education programmes carried out by an external research office, showed that 71% of a sample of graduates of the Utrecht programme (n=81) rated their professional preparation as good or very good (Luijten, Marinus, & Bal, 1995; Samson & Luijten, 1996). In the total sample of graduates from all Dutch secondary-teacher education programmes (n=5135) this percentage was only 41%, which shows a statistically significant difference ($p < .001$).
2. *An evaluative overall study among all graduates of the Utrecht University programme* carried out at the end of the 1990s, showed that 86% of the respondents considered their preparation programme as relevant or highly relevant to their present work as a teacher (Koetsier, Wubbels, & Korthagen, 1997).
3. *An in-depth study* by Hermans, Créton, and Korthagen (1993) in a cohort group of twelve student teachers, showed that all experienced a seamless connection between theory and practice. In the context of the above-cited research on the problematic relationship between theory and practice in teacher education, this is a remarkable result. Some quotes from student teachers' evaluations are: "To my mind, the integration theory/practice was perfect"; "Come to think of it, I have seen and/or used all of the theory in practice"; "The things dealt with in the course are always apparent in school practice."

However, one may wonder here what these student teachers mean by 'theory'. Considering the processes and contents of the programme, probably they are not referring to purely formal theory but to a mixture of personal practical theory and more formal theory. Perhaps this is the essence of what a real integration of theory and practice might mean.

4. *An extensive longitudinal study* by Brouwer and Korthagen (2005) focused on the relationship between the programme design and outcomes of the realistic approach. At various moments during the programme, and during the first two years in which the graduates worked as teachers, quantitative and qualitative data were collected among 357 student teachers, 31 teacher educators and 128 mentor teachers. Positive influences on these teachers' practices appeared to depend primarily on the degree to which theoretical elements in their preparation programme were perceived by the student teachers as being functional for practice during their student teaching, and on the degree of cyclical alternation between school-based and

university-based periods in the programme. In addition, a gradual increase in the complexity of activities and demands placed on the student teachers appeared to be a crucial factor in the integrating of theory and practice.

5. In 1992 and 1997 *external evaluations of the programme* performed by official committees of experts on teacher education, researchers, and representatives of secondary schools led to highly positive outcomes. In 1997, 25 out of 34 evaluation criteria scored 'good' or 'excellent', including the criteria 'value of programme content' and 'professional quality of the graduates'. The school principals in the committees reported that they considered Utrecht graduates to be the best teachers in their schools. In the nine other criteria the programme received the qualification 'sufficient'. No other Dutch teacher-education programme received such high evaluations.

Implications for Teacher Education

The realistic approach concurs with the model of teacher learning proposed by Clarke and Hollingsworth (2002), who also advocate "[the placing of] 'the pedagogy of teachers' (that is, the theories and practices developed by teachers) at the heart of our promotion of the professional growth of teachers" (p. 965). It should be emphasised that the development of a programme based on the principles of realistic teacher education may take much time and energy, especially as it requires that teacher educators assume a special and often unconventional role. To achieve the following, they often need to go through a deep process of professional change that affects their professional identity:

1. They must be able to create suitable learning experiences for student teachers, in which these student teachers can develop fruitful gestalts as the basis for the next step.
2. They must be competent in promoting further awareness in student teachers as the student teachers reflect on their gestalts and thus develop fruitful personal and formal theories. It is often helpful to take as a starting point for reflection *one* concrete, recently-experienced and relatively short teaching situation that still evokes some concern or question in the student teachers. It is our experience that for many teacher educators, this is not an easy role to take.
3. They must be able to offer theoretical notions based on empirical research in such a way that these notions fit the student teachers' reflections on their existing gestalts and support them as they develop helpful practices. Moreover, after the students have developed personal practical theories, they should reflect on the relation between more formal theories and their own thinking. Only then will a real integration of practice and theory take place.

The realistic approach to teacher education has consequences not only for the types of interventions teacher educators should make to promote the intended

learning process in the student teachers but also at the organisational level of teacher-education curricula. First of all, linking theory and practice with the aid of the ALACT model requires frequent alternation of school teaching days and specific meetings aimed at the deepening of teaching experiences. Secondly, in order to harmonise the interventions of school-based mentor teachers and institute-based teacher educators, close cooperation between the schools and the teacher-education institute is necessary. Not every school may be suitable as a practicum site: the school must be able to offer a sound balance between safety and challenge and a balance between the goal of serving student teachers' learning and the interests of the school.

The approach advocated here implies that it is impossible to make a clear distinction between different subjects in the teacher-education programme. The realistic approach is not compatible with a programme structure showing separate modules such as 'subject matter methods', 'general education', 'psychology of learning', and so forth, meant to provide student teachers with knowledge they can later apply to their own practices. Relevant and realistic teacher learning is grounded in gestalts formed during experiences, and teaching experiences are not as fragmented as the structure of many teacher-education programmes would suggest.

All this implies the need for professional development of teacher-education staff and mentor teachers, an issue often overlooked (Koster & Korthagen, 2001). Most teacher educators do not receive any formal preparation for this profession, whereas several authors emphasise that being a good teacher does not automatically mean being a good teacher educator (Arizona group, 1995; Dinkelman, Margolis, & Sikkenga, 2006; Murray & Male, 2005). The team of teacher educators at Utrecht University have invested much time and energy in their own professional development, through training sessions, intensive staff meetings, all kinds of collegial support, and structured individual reflection. Without such an investment in the professional development of teacher educators the changing of traditional habits in teacher education would appear to be a difficult matter.

Conclusion

In conclusion, it is possible to bridge the gap between theory and practice in teacher education if we put the emphasis on student teachers' experiences, concerns, and existing gestalts, and work towards level transitions as described by the three-level model of teacher behaviour and teacher learning. Here the principles of realistic education provide a gateway. As we have seen, teacher education can make a difference, but this requires (1) careful programme design, based on (2) a clear view of the intended process of teacher learning, (3) specific pedagogical interventions, and (4) an investment in the education of teacher educators (Korthagen, Loughran, & Russell, 2006). In the development of a programme based on the principles of realistic teacher education, each of these components may take much time and energy, especially as they require from teacher educators a specific and often unconventional role.

A warning has to be given regarding an extreme elaboration of the realistic approach. In many programmes in the world at large, the traditional approach of 'theory first, practice later' has been replaced by the adage 'practice first, theory later'. Many alternative programme structures have been created in which novice teachers receive very little theoretical background and teacher education becomes more of a process of guided induction into the tricks of the trade. Often this trend is influenced by the need to solve the problem of teacher shortages. Although this development may satisfy those teachers, politicians and parents who criticise traditional practices in teacher education, there is a great risk involved. The balance seems to shift completely from an emphasis on theory to reliance on practical experiences. Such an approach to teacher education does not, however, guarantee success. Long ago, Dewey (1938, p. 25) stated that "the belief that all genuine education comes about through experience does not mean that all experiences are genuinely or equally educative" (cf. Loughran, 2006, p. 22). As discussed above, teaching experience can be a process of mere socialisation into established patterns of practice rather than an opportunity for sound professional development (cf. Wideen, Mayer-Smith, & Moon, 1998). There is a risk that in a 'practice first approach' the basic question, namely *how to integrate theory and practice*, will remain unsolved. This integration is the basic feature of the realistic approach, and this article may have clarified that this requires much more than a shift away from university-based teacher education towards a school-based alternative.

Moreover, as we have emphasised above, student teachers have to learn how to direct their own professional growth through the use of structured reflection as a means of integrating theory and practice. Hence too much emphasis on learning the 'tricks of teaching' is counterproductive to life-long professional learning.

Recent Developments

Currently there are new developments taking place in the theory of realistic teacher education. In particular, significant changes are taking place in the approach to reflection. The ALACT model is in itself only a process model and does not describe the content of the reflection. To fill this gap, a model has been developed which describes content levels of reflection. This so-called *onion model* appears to be helpful for deepening teacher reflection. It describes six of such levels: (1) environment, (2) behaviour, (3) competencies, (4) beliefs, (5) professional identity, and (6) mission (Korthagen, 2004). This onion model can be applied to a variety of different contents of teachers' reflections, for example didactical or pedagogical reflections, or reflections about collaboration with colleagues. We talk about *core reflection* if the inner levels (5 and 6) are included in the reflection process and if the person considers the relations of these inner levels with the more outer levels of competencies, behaviour, and environment (Korthagen & Vasalos, 2005).

Moreover, under the influence of positive psychology (Seligman & Csikszentmihalyi, 2000), the importance has been discovered of reflection on positive experiences, successes and ideals instead of on problems and failures. Such a shift in focus makes it easier to include the inner levels of the onion model in the reflection process. This implies that concerns and ideals deeply ingrained in teachers' thinking are touched upon and used as starting points for deep reflection and enduring professional change. Recent research has shown the strong impact of this new view of reflection on the supervision of teachers (Meijer, Korthagen, & Vasalos, 2009; Hoekstra & Korthagen, 2011).

Within the limitations of the present article we cannot address this area in greater depth, but this brief sketch of recent developments illustrates that the realistic approach is not a static framework but rather a dynamic view of teacher education that is open to adaptation and cultural change. This view continues to evolve, and as a result of the translation of publications on the realistic approach into many different languages, this evolution is currently taking place in a variety of countries at the same time. It is to be hoped that this will have a beneficial effect on teachers and pupils all over the world.

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Contact information

Fred A. J. Korthagen

Centre for Educational Training Assessment and Research (CETAR)

VU University

Takstraat 14

3572 HZ Utrecht

The Netherlands

f.korthagen@uu.nl