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Experience, theory, and practical wisdom in teaching and teacher education

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In this contribution, we discuss what it means to be a professional teacher with practical wisdom, and how practical wisdom is related to theory and experience. These questions are especially relevant as nowadays, in many countries, teacher education becomes more school-based. Building on theories on the functioning of the human mind in general, and teacher behavior in particular, the notions of practical wisdom, theory, and experience are connected in a triangular model. We elaborate on the idea that each element can be an entry point for practices in teacher education, which brings discussion on the relationship between theory and practice in teacher education into a broader perspective. Several pedagogical approaches are discussed which help to link practical wisdom, theory, and experience within teacher education programs.

Keywords: professional development; theory; practical wisdom; experience

‘A fool sees not the same tree that a wise man sees.’

William Blake (1790)

2005. Mary is a young teacher in her first year of secondary school teaching. She can tell enthusiastically about her subject, geography, prepares her lessons very precisely, and thinks hard about ways of stimulating her students to work on interesting tasks. From her teacher education program and from the literature, she knows that it is important to have clear routines and procedures in the classroom, and to be consistent in their use. For example, her students know that they can have a quiet discussion with their neighbor while working on tasks.

Last year, during her teaching practice, this approach was quite successful, but it was in a situation in which the co-operating teacher was also present in the classroom and assisted by helping pairs of students. Somehow, this teacher’s presence had a positive influence on discipline.

This year, Mary teaches on her own. And now, she is faced by many problems. Her class is often very noisy. Sitting behind her desk, she tries to keep an overview and repeatedly asks for more silence. However, her ‘ssh-ing’ does not always have the desired effect. Moreover, in last weeks’ lesson, she noticed a scrap of paper flying across the classroom while explaining a complex issue concerning volcanic activity. Because she needed to keep her attention focused on the explanation, she ignored it. The noise became louder,

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and after the lesson she realized that many students must have failed to understand the content of the lesson.

2008. Three years later. Today, Mary is explaining the essence of volcanic activity when she notices Carl seeking Sophia's attention to pass on a note, probably to Clare, who is sitting next to Sophia and whom he recently has started dating. Carl is a good student, but Mary does not want Sophia to be distracted, because Sophia is dyslectic and therefore needs Mary's oral explanation. Mary looks in Carl's direction and cautions 'Carl!'. Carl stops in his tracks, Mary smiles at him and continues her lesson, sending him a friendly wink in order to reaffirm her good relationship with Carl. All the students are listening well and seem to be involved in the lesson.

Later, they are working in pairs on a task while Mary is walking around, helping if necessary. She is aware of the diversity of approaches and learning styles among the pairs. As usual, for example, Chris and John are following a trial-and-error approach. Both of them seem to learn more from doing than from starting from a plan. Mary also takes time to check and see if Sophia has had enough information to carry out the task. It turns out that Sophia and Clare are working together systematically and progressing smoothly. While doing all of this, Mary – almost unconsciously – is using theory that she has learned about the role of the affective in student learning.

Introduction

From the aforementioned example, most experts would conclude that Mary has grown as a teacher and has become more 'professional' in her classroom teaching. But what does this mean? Why would we call her behavior more professional? One way of answering this question might be to say that Mary has developed more 'practical wisdom.' Again, what do we mean by this and how does this practical wisdom relate to Mary's theoretical knowledge and her growing experience as a teacher? This article is a quest to answer these questions and derive some consequences of our analysis for teacher education.

This quest builds on earlier work of one of the authors of this article, Fred Korthagen (see Korthagen & Kessels, 1999; Korthagen, Kessels, Koster, Lagerwerf, & Wubbels, 2001), which was based on the work of Aristotle and Plato on *phronesis* and *episteme*. These publications explained that *phronesis* is the capacity to make holistic judgments of high quality, i.e., to deal 'wisely' with particular situations in the course of teaching. This capacity to act wisely, which professional teachers need and use – often unconsciously – is rather different in nature from the more abstract, systematized, and general expert-knowledge researchers develop (Tom, 1997). That kind of knowledge was called *episteme* by Aristotle (Jonsen & Toulmin, 1988, p. 66). *Episteme* is the knowledge (or 'Theory with a big T') produced by conventional research in order to answer a question such as 'What are characteristics of effective education, and why and how are they effective?', 'What are the causes of student drop-out?', etc. Such knowledge meets the traditional criteria of reliability and validity, and has the potential for broad generalization. It is *conceptual* knowledge, whereas *phronesis* represents the quality of the *perception* of concrete situations.

The distinction that Korthagen and colleagues made between *phronesis* and *episteme* proved to be helpful in studying the professional development of teachers (see, e.g., Loughran, 2006), but now, almost a decade later, we feel that it is time to take the discussion one step further, for at least two reasons to be explained in the following section.

Theoretical background

Two important reasons for taking this discussion a step further are that during the last decade (1) Aristotle's terms, *phronesis* and *episteme*, have been used in a variety of meanings, and that (2) the context of teacher education has changed during the last decade. Hence, we feel that the language used in the discussion on professional development deserves some closer analysis and should be placed in today's context.

Clarifying the terminology

First, we want to clarify the language used. In articles based on Korthagen's work, the terms *episteme* and *phronesis* seem to have acquired different meanings and interpretations. The discussion on *episteme* and *phronesis* has been enriched by this broadening of interpretations, and has had its influence on practice (see, e.g., Loughran, 2006). As a consequence, however, the meaning of the terms *episteme* and *phronesis* is also becoming less clear and this may cause conceptual confusion. For this reason, in this contribution, we will start afresh with an analysis of the relevant concepts. We will use the English terms 'practical wisdom,' 'theory,' and 'experience' in our attempt to understand the growing of Mary's professional teaching. We define these three terms as follows.

Practical wisdom is the sensitivity for and awareness of the essentials of a particular practice situation that shape our perception of this situation, and help us find possible courses of action. Practical wisdom is not something that is just stored in our heads, but it is intrinsically connected to specific phenomena occurring in the here-and-now and it only functions well in relation to these phenomena. Practical wisdom makes use of practical knowledge, but goes beyond it, as it helps the practitioner to perceive the essence of a situation. Hence, it is connected to our sensory organs, because seeing, hearing, and even physical awareness are essential in the development and functioning of practical wisdom. For this reason, it is hard to make practical wisdom explicit.

Fenstermacher (1994) and Marton and Booth (1997), too, strongly emphasize the role of perception and awareness in (professional) learning, and argue that after the learning process 'the learner has become capable of discerning aspects of the phenomenon other than those she had been capable of discerning before' (Marton & Booth, 1997, p. 142). In previous work, Marton, Dahlgren, Svensson, and Saljö (1977, p. 23) referred to this kind of learning as 'a change in the eyes through which we see the world' and they consider it to be the essence of professional learning. Marton and Booth (1997) add that through the changed awareness of the phenomenon, the relationship between the person and the phenomenon has also changed.

Theory fulfils our need for order in and verification of phenomena in our experience. It involves logical structuring, such as the formulation of definitions and logically derived propositions. Theory is relatively static and somewhat detached from the specific situations it has a bearing on. Theory can be written down and more or less fully 'known.' If a teacher makes use of theory, it is generally the inner reconstruction of insights developed by others, and hence it is something 'in the head.' According to Kuhn (1977), there are at least five characteristics of a 'good' theory: (1) it is accurate, i.e., consistent with known data; (2) it clarifies a broad range of data; (3) it is both internally consistent and consistent with other accepted theories; (4) it is simple, i.e., it brings order to a variety of isolated phenomena; and (5) it is fruitful, i.e., it generates new results.

Experience is what one gains from operating in the real world, in practice (in our case the real world of teaching in schools), and encompasses both the environment (e.g., the classroom) and one's own inner reality while relating to this environment. This inner reality is multi-layered, as it encompasses, for example, good or wrong ways of doing things (know-how), beliefs about practice, as well as a sense of professional identity developed through internal encounters with the 'I' that goes through the experiences. The term experience refers to the constantly changing flow of events, and hence one's experience can never be 'fully known.'

Taking a changed context into account

Second, Korthagen's publications referred to above were written at a time when many studies showed that the 'theory-into-practice' model (the 'application model') in teacher education did not seem to work very well. Graduates from teacher education programs proved to have difficulty in applying the theory that had been presented to them during their professional preparation (Wideen, Mayer-Smith, & Moon, 1998). Research showed that it was even questionable whether these graduates did 'learn' these theories at all, or that these were so much in conflict with their existing preconceptions that the new knowledge offered to them did not really become integrated into their thinking about teaching (for a discussion of this phenomenon, see Wubbels, 1992). The literature also provided us with many explanations for the meager application of theory by graduates of teacher education programs. The first explanation for this is the complexity of teaching. Teaching involves a variety of complex psychological and sociological processes (cf. Hoban, 2002; Loughran, 2006), which implies that it is too simple to think that a practical problem can easily be solved by applying the 'right' theoretical insight. Clark and Lampert (1986, p. 28) argue that teachers 'are expected to accomplish complex and even conflicting goals. Under these circumstances, a priori knowledge identified by researchers about the relationship between particular decisions or actions and their outcomes is of limited worth.' Hoban (2005, p. 9) states: '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.' The last part of the previous sentence points to an additional explanation for the failure of the application model: what works in one situation with one group, does not automatically work in another situation or with another group. This means that all the time, teachers have to make what Dolk (1997) calls *immediate decisions* about how to act in a specific situation with a specific group. Clark and Peterson (1986) found that every two minutes teachers make such interactive decisions. Yinger (1986) reports that at least 75% of these decisions are made unconsciously. Eraut (1995) explains that this is due to the fact that in the course of teaching, there is only limited time for reflection and that, in practice, it is almost impossible to search for alternatives in a certain situation on the basis of theoretical frameworks and then to choose the best. Moreover, there is not always a single best alternative. Practice is generally ambiguous and value-laden (Schön, 1983). Robinson (1998) writes that in specific educational situations, even experts have different opinions on what is the best way to use theory. Different theories may each have their value in explaining a certain aspect of the situation, and hence lead to different perspectives. Based on these findings, Korthagen and his colleagues emphasized the importance of paying more attention to the experiences of the novice teachers in their daily practice in schools and to their

concerns, beliefs, and teaching conceptions, as well as to the connection between practice and theory.

These ideas seemed to fit in with the big changes that have taken place during the last decade in the way teacher education is being organized. Developments toward more school-based teacher education have been welcomed as possibilities to bridge the gap between theory and practice. Worldwide, many teacher education programs state that they have changed from a mainly ‘academic’ and content-based curriculum toward a more practice-based curriculum. To date, student teachers often spend more time in schools than 10 years ago. As a consequence, the responsibilities of the teachers in the schools for the education of novice teachers have grown enormously (Lunenberg, Snoek, & Swennen, 2000). Although the role of practice in learning about teaching has thus increased, these changes are not necessarily helpful in bridging the gap between theory and practice. Teachers with a lot of experience in teaching do not automatically ‘act wisely.’ Their behavior may have been shaped by earlier successes and thus by ‘what works to keep the class going’ instead of deep insights into what is really helpful to effective student learning.

Moreover, although student teachers spend more time in schools than 10 years ago, this has not automatically affected the way teacher educators in teacher education institutes teach. There are indications that in teacher education institutes the theoretical still continues to be privileged (Boyd et al., 2008). So, the shift toward more school-based teacher education seems not to have the aimed results. The question still arises how we can support novice teachers to develop practical wisdom.

A triangular relationship

Experience is important in developing practical wisdom, but it is not enough. Profound theoretical knowledge is also necessary. Wilson (2006) even states that teaching asks for an *immersion* in theory. The triangle in Figure 1 may help us to analyze further the relationship between experience, theory, and practical wisdom.

It is important to realize that the three elements of this model are essentially different in nature (as described above), and that it is the *teacher* who makes them come together (or not) in the day-to-day school practice. One could say that the three elements find their ‘embodiment’ in the teacher. It must be emphasized that this is a complicated, non-linear process, in which the context, i.e., workplace conditions, play an important supporting or inhibiting role. Nevertheless, we feel

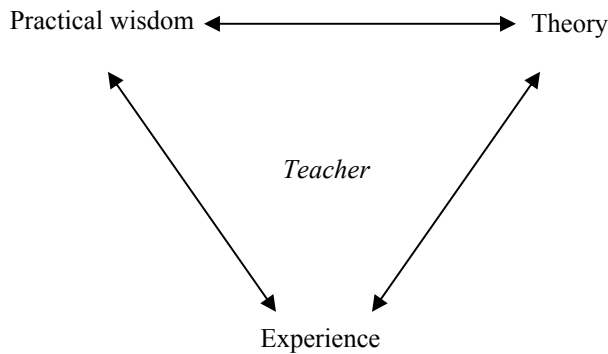


Figure 1. The triangular relationship between practical wisdom, theory, and experience.

that the model, presented in Figure 1, can support our thinking about these complex relationships.

Let us use the triangle model to clarify the way experience, theory, and practical wisdom may come together using the example of Mary, presented at the beginning of this contribution. Her practice is ever-changing and provides her with experiences on which she can build her practical wisdom. For example, on the basis of her difficult first-year experiences as a teacher, she has developed a sensitivity for ‘cues’ in a classroom situation that could well develop into obstacles to optimal learning. This sensitivity is part of the practical wisdom she brings to bear on the situation. The movements of Carl, who wanted to pass on a note in Mary’s 2008 class, are not as threatening to the classroom discipline as the phenomena occurring in her 2005 class, but Mary immediately (on the spot) ‘feels’ that this small ripple could become a major obstacle, for example to Sophia, and Mary is wise enough to correct Carl immediately. Moreover, she does so while hardly interrupting the flow of her explanation. She is even sensitive in the here-and-now to the effect that her correction might have on her relationship with Carl, and reaffirms this relationship by smiling at him and giving him a wink. This is a good example of what Van Manen (1999) labels *pedagogical tact*. Mary’s ‘feeling for the situation’ is also fed by her theoretical knowledge of dyslexia – knowledge that has been internalized and thus can be used in this specific situation.

In sum, within a couple of seconds, Mary *perceives* (the basic characteristic of practical wisdom) a variety of essentials in the situation: the beginning of a disturbance, Sophia’s dyslexia problem and her need to understand the oral explanation, and the importance of maintaining a good relationship with Carl. Perhaps she even keeps an eye on the rest of the classroom while all this is happening. In any case, she is able to proceed smoothly with her explanation, so she ‘stays in touch’ with her own needs and the structure of her explanation about volcanic activity. This is a good example of ‘holistic judgment:’ within the complexity of the situation, Mary is able to act wisely and demonstrates a growth in practical wisdom in comparison with her 2005 class. This growth can be characterized as a growth in her ability to sense, to perceive the essential aspects of the here-and-now, in other words as a growth in awareness.

Another example may help to sharpen the distinction between theory and practical wisdom. Novice teachers, like Mary, may know a lot of concepts and principles that have to do with the affective side of learning, and they may even have a deep theoretical insight into the importance of empathy toward the students. Still, this is no guarantee that during teaching, they will be aware of the students’ feelings and will be able to react to them in an empathic way. The ability to perceive the students’ feelings and needs, to be aware in the here-and-now of their importance, and to act upon this awareness in a pedagogical tactful manner, is the essence of practical wisdom.

The underlying psychological processes

How are these concepts related to the functioning of the human mind? According to Epstein (1998) there are two different ways in which the mind can deal with experiences in the real world: through a *rational* mind and an *experiential* mind. The rational mind, which operates according to logical inference, is conscious, deliberative, and relatively emotion-free. It is this rational mind which is capable of theory formation and of developing *practical wisdom from theory*. The experiential mind seems to

enable humans to develop *practical wisdom from experience*. The experiential mind learns directly from experience (without reflection), is partly preconscious, and is intimately associated with emotions. It has a strong influence on human behavior and operates in a concrete, associative, rapid, and automatic manner (Epstein, 1998). The rational and the experiential mind operate as parallel systems, with all kinds of connections between the two, which are influenced by experiences, and thus by the context of a person’s life. For example, Epstein notes that recurring patterns in the experiential mind lead to stable assumptions about the world in the rational mind. The rational mind can also influence the experiential mind. For example, fight or flight tendencies occurring in the experiential mind can be suppressed or altered by the rational mind. There are more of such connections, making the whole functioning of the human mind effective but also complex. In the same manner the relation between practical wisdom and theory is not one-dimensional but the result of a complex interaction, which is strongly influenced by the environment. For example, when student teachers have their first teaching experiences under difficult workplace conditions, concerns for survival tend to push back their concern for theory (Wideen et al., 1998).

Korthagen and Lagerwerf (2001) present a three-level model that may help to further understand the relations between experience, practical wisdom, and theory (see Figure 2). They state that the experiential mind makes use of – partly unconscious – conglomerates of cognitive, emotional, and motivational aspects, which they refer to as *Gestalts*. These Gestalts also contain action tendencies which help people deal with their environment. When these Gestalts become richer (more internally differentiated), we can say that the teacher develops practical wisdom.

Next, the rational mind may be used to reflect on a previously unconscious Gestalt, which means that a conscious cognitive schema is formed. Through further reflection or confrontation with theory, for example presented by a teacher educator, the schema may evolve into an educational theory in the mind of the teacher. However, this does not mean that the theory will then influence the teacher’s behavior, as teacher behavior is generally mediated by processes in the experiential mind and its Gestalts. In order for theory to influence the Gestalts, and thus to become practical wisdom, a process is needed which is called *level reduction* (Van Hiele, 1986, p. 46): through repeated exercising, the theory, which is in essence conceptual, can begin to influence teachers’ perceptions of practical situations, and make them more aware of certain aspects in these situations. Only then theory can start to play a role in teachers’ actions in practice in a more automatized manner (for more details, see Korthagen & Lagerwerf, 2001).

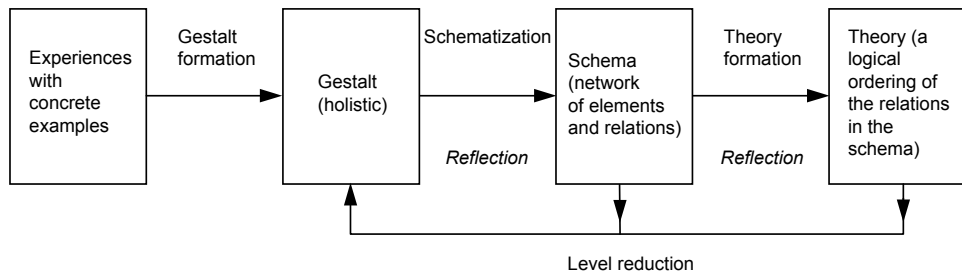


Figure 2. The three-level model and the accompanying learning processes.

Developing practical wisdom in teacher education

Recently, there has been a debate in the *Educational Researcher* between Evans (2007) and Shulman (2007; Shulman, Golde, Bueschel, & Garabedian, 2006) about the question of what should be taught in doctoral programs of education. Whereas Shulman advocates more emphasis on the development of practical wisdom, Evans seems to understand this as a plea for building curricula on simple practical principles of dealing with specific situations, on tricks and tips so to speak. We agree with Shulman, who states that ‘the practical wisdom of practice is of interest because of its variance, not its mean’ (2007, p. 560) and that ‘if we study and learn from the practical wisdom of practice, we are studying the rich ways in which practitioners draw upon their theoretical understandings, their values and commitments, their practical experience, the interests of their stakeholders’ (2007, p. 561).

It is our impression that Evans’s kind of reaction to authors emphasizing practical wisdom is quite widespread, and is due to the difficulty of understanding that the level of awareness that is characteristic for practical wisdom has both a bearing on the particulars of a specific educational situation, and is the result of extended experience and interaction with theory. In fact, the development of practical wisdom reflects a high level of professional growth.

For teacher education programs, this triggers the question of how practical wisdom can be developed in student teachers. In this respect, Mary’s case can be informative. Her professional development can be characterized as a growth in (1) experience, (2) theoretical knowledge, and (3) practical wisdom, and we believe that these three elements are interdependent, as shown in Figure 1. Hence, when thinking about the promotion of practical wisdom in teacher education, we first of all have to realize that this will always require a period of time in which novice teachers are gaining experience in the daily school practice. In this respect, teacher educators face certain limitations, as most teacher education programs are in fact rather short, given the difficult and complex task at hand. However, within the limited available time, teacher educators can make the best use of the situation by realizing that the development of practical wisdom requires more than just experience. As Figure 1 shows, it is the *interaction* between experience, theory, and practical wisdom that is essential to the development of the latter. So, we agree with Loughran and Russell, who in their introduction to this special issue argue that teaching should be embedded in a deep and rich knowledge base. However, we want to be more precise. As the three-level model (Figure 2) explains, in order to develop practical wisdom, the presentation of theory should not only be focused on presenting a knowledge base for better *understanding* of classroom realities, but also for stimulating awareness in student teachers of relevant aspects of concrete situations. Going back to the final example in the previous section, if one wants student teachers to be sensitive to their students’ feelings, it is not sufficient to teach them theories about the role of the affective in teaching. They have to be helped to *perceive* this aspect in real situations, which is something almost completely different, and requires a process of level reduction.

Going through the triangle

Consequently, teacher educators should support student teachers in acquiring practical wisdom, theory, and experience in connection with each other. Depending on the background and learning style of a student teacher, and the actual situation in a teacher education class, the route through the triangle can start from any angle. Moreover, the learning

opportunities for students are also influenced by factors such as whether emphasis is put on university-based or school-based teacher education, whether field experiences take place in inner-city schools or in more rural areas, in multi-cultural or mono-cultural schools, and so on. In these different contexts, the experiences that students gain, and the nature and availability of relevant theoretical knowledge will vary.

Starting from existing practical wisdom

Students' own school experiences can provide them with a sensitiveness about what is happening in their class, and hence with practical wisdom helpful to their work as a teacher. A student teacher, for example, who has been to a school based on the ideas of Maria Montessori, may be sensitive to a student's need to follow an individual learning path. This sensitiveness can be used to encourage her to look for literature about adaptive learning and to experiment with this in her teaching. Finally, the student teacher could write a reflective report in which she connects her experiences as a student in a Montessori school with her experiences as a teacher promoting adaptive learning in a regular school. This student teacher's learning sequence begins and ends at the practical wisdom angle of the triangle. Not the student's previous experiences in themselves, but her sensitiveness to certain issues are the starting point here. Studying literature, experimenting, and reflecting are crucial for building on the student's learning history and for developing rich practical wisdom (Bullough, 1991).

Interesting impulses for an approach based on such a sequence through the triangle can be found in self-studies on multicultural education in which the learning of student teachers and teacher educators often comes together. Johnston-Parsons, Lee, and Thomas (2007), for example, describe how, during a period of three years, they spoke with their students of color about being culturally sensitive teachers when dealing with diversity in the classroom. Prada-Olmos, Rios, and Vega (2007), themselves faculty members of color, describe a special summer session geared to recruiting people of color for teaching. Discussing identity issues ('we are the other, but we are not all the same') proved to be an important item. The authors describe how they love teaching this summer session class, because they feel more comfortable telling their own stories than in regular classes. In this manner, students and teacher educators further developed a sensitiveness to the influence of cultural identity on learning and teaching.

In an approach that builds on existing practical wisdom, there is also a danger. Is the practical wisdom really based on sound educational principles? There is a danger that practical wisdom is simply equated to 'tricks that work,' and thus is based on fairly superficial Gestalts, and this is not a solid basis for developing professional teaching, as Zeichner and Tabachnick (1981) already emphasized in the early 1980s. This has been the fundamental critique on the classic apprenticeship model (cf. Wideen et al., 1998, p. 159). Induction into the profession should indeed be more than learning some tricks from a veteran teacher, as Britzman (2003) has clearly described. This requires from those who educate teachers, for example supervising teachers, that they are able to see the connections between practical wisdom and theory. In terms of Figure 2, it is important that the right side of the picture plays a role and not only the left side.

Starting from theory

It is also possible to go through the triangle starting from the theory angle. For example, from our own teacher education practice, we know that novice teachers often find

the theory on learning styles or on student motivation very interesting, even if they do not yet have experience with teaching in schools. When they start teaching, the theory helps them to be more sensitive to certain phenomena in the classroom. For example, a student teacher may say: 'The theory helps me to understand what is going on in my class, why it seems impossible to get every student simultaneously satisfied.' Their awareness of such aspects in the teaching situation often encourages them to introduce more variation into their teaching methods, and they experience the positive outcomes of their attempts. In this case, the sequence through the triangle follows the order of theory, practical wisdom, experience. Important is the fact that these teachers get the opportunity to experience that theory can be helpful, which may stimulate them to read more theory during the teacher education program and during the rest of their careers. This requires that teacher educators are able to remind novice teachers during the first difficult stage of survival in the classroom of the theoretical baggage that they already have or can acquire, and that can contribute to solving problematic situations. These educators face the challenge of doing so 'just enough, and just in time,' and of counterbalancing the tendency in novice teachers to search for 'tricks and recipes' that help them to survive. Moreover, as discussed above, theory will generally only lead to practical wisdom after repeated application, so that a process of level reduction takes place in which conceptual knowledge begins to influence teachers' perceptions.

Starting from experiences

As a result of the conclusion of various research studies that novice teachers do not seem to be able to put theory into practice, there has been a shift in teacher education from a theory-oriented to a practice-oriented approach with the result that the connection with theory is sometimes lost. In many places, this trend is also influenced by the need to solve the problem of teacher shortages. Although this development may satisfy teachers, politicians, and parents, there is a great risk involved. In fact, it has been shown that teaching experience can be a socializing factor rather than an opportunity for professional development (cf. Wideen et al., 1998). Often the process of socialization into the school context creates a dislike for reflection and theoretical deepening (Cole, 1997). We believe this is a dangerous development, as professional teachers should in our view be able to link their experiences to practice, and to build their practical wisdom with the aid of theory.

On the other hand, there are various approaches that start from experience and do follow a fruitful route through the triangle, thus incorporating the development of theory and practical wisdom. In the next section, we will briefly discuss three of such approaches: (1) studying cases, observations, looking at videos, (2) detailed reflection on students' own practices, and (3) self-study research.

Three fruitful approaches starting from experiences

Cases, observations, videos

One fruitful approach uses authentic cases as a basis for teacher education (Goldblatt & Smith, 2005; Shulman, 1992). During the last few decades, several multi-media tools have been developed for introducing such cases into teacher education (see, e.g., Van den Berg & Visscher-Voerman, 2000). Already in 1940, Gragg published his article 'Because practical wisdom can't be told.' In this article, based on his teaching

experiences at Harvard Business School, Gragg (1940) concurs with our present analysis in the sense that he states that experience or theory in itself does not improve sound judgment or promote the ability to act wisely in conditions of responsibility. Gragg propagates a case-based approach to learning. His main arguments for this approach are that it supports purposeful thinking and collaboration of groups of students engaged in learning activities around real-world situations. With Gragg, and with others advocating case-based learning in teacher education, we feel that discussing cases is a helpful way of creating meaningful educational experiences for student teachers, leading to the development of practical wisdom. Also, when student teachers look at videos of teaching episodes, or even if they attend lessons given by others, this can have an important impact on the development of their perception, their sensitivity, and awareness. Nevertheless, in our view an analysis of student teachers' *own* cases is most effective, as it is essential that student teachers learn to perceive important aspects in their own teaching.

Mary appears to have achieved the stage of being able to perceive such relevant aspects of the classroom situation *while teaching*, and she also knows theory related to her awareness and pedagogical tact. This is why we can call her a professional teacher. On the other hand, the example tells us little about her ability to construct sound tests, or her capacity to collaborate with other teachers, things that again require experience, theory, and the development of practical wisdom. Hence, in order for teachers to be professional, they should have a broad variety of experiences, theory, and practical wisdom at their disposal.

Detailed reflection

Reflection seems the vital instrument for making the connections between experience, theory, and practical wisdom. Korthagen (2001, p. 71) gives the following guideline for making such reflection effective: 'A teacher's professional learning will be more effective when the learner reflects *in detail* on his or her experiences.' The more specific the analysis of a small part of a lesson is, the more a student teacher is supported in developing practical wisdom, as he or she is then supported in developing *sensitivity to the particulars of educational situations*.

This implies, for example, that the student teacher can be helped to carefully consider his or her *concrete* thoughts, feelings, needs, and actions (in other words the cognitive, emotional, motivational, and behavioral aspects of the situation), which of course requires an atmosphere of trust. Evenly important is that the student teacher reflects on the specifics of the students' thoughts, feelings, needs, and actions. Together this leads to the reflection technique of the eight areas (Table 1, derived from Korthagen et al., 2001, p. 121), which is most effective when applied to specific situations.

Finding answers to these eight questions is often difficult for student teachers. Sometimes student teachers have no idea about their students' thinking or feeling. Of

Table 1. Concretizing reflection questions.

1.	What did I want?	5.	What did the students want?
2.	What did I think?	6.	What did the students think?
3.	How did I feel?	7.	How did the students feel?
4.	What did I do?	8.	What did the students do?

course that is a good starting point for discussing the question what the student teacher could do in the next lesson to find the answers. This promotes the development of their awareness and sensitivity.

After answering the eight questions, the important final step is *connecting* the answers; in other words, analyzing the processes going on within the teacher and between the teacher and the students. For example: How did the student teacher's own feelings influence his or her actions during the lesson? How did these actions influence what the students felt and wanted? How did that influence their behavior? What was the effect of that behavior on the teacher's feelings? etc. In this way, the essential aspects of the process during the lesson become clear. Gradually, students may discover repeating patterns in the experiences they reflect on. For example, they may discover that they more often do not know the answers to the questions in the right hand column, or that they tend to overlook the tensions between their own perspective (left column) and the student perspective (right column). This may help them to see more general patterns in the particulars of specific situations, so that they do not have to reinvent the wheel over and over again. As already stressed above, at this stage theoretical input can also deepen the students' sensitivity, if the theory is carefully chosen and connected with the students' concerns, and if sufficient attention is given to the process of level reduction.

We believe that the guideline of promoting detailed reflection is essential to the development of practical wisdom and is often somewhat ignored in teacher education, probably because of the lack of time available for intensive individual supervision. However, we think that teacher educators who have to teach large groups of student teachers sometimes overlook possibilities for organizing structures in which student teachers promote this detailed reflection on practice in each other.

Self-study

Since the early nineties, there has been a growing international movement of 'self-study research' (Loughran, Hamilton, Kubler LaBoskey, & Russell, 2004). A growing number of teacher educators have produced detailed accounts of their own work in teacher education, or analyses of their own professional development. By doing so, teacher educators are setting an example for student teachers. Self-study research of teachers can be important for further development of practical wisdom, because in self-study research the questions, problems, and fascinations of one's practice form the starting point for developing greater awareness. This is illustrated by a statement from a teacher educator cited in Zwart, Korthagen, and Lunenberg (2008a, p. 10). After carrying out a self-study, she said:

It is still difficult to handle student teachers' experiences well, but I am getting better in recognizing what is important. I am not sure that I always ask the right question, but I recognize what is going on and that this offers opportunities for me as a teacher educator.

Over the past two decades, many teacher education programs have begun to include practitioner research and require student teachers to carry out a research project related to their practices (Grossman, 2005). However, carrying out research on their practices does not automatically enhance student teachers' practical wisdom. Gore and Zeichner (1991) show that students tend to focus on issues connected with discipline and classroom management, but when students' research projects are explicitly

designed to help children develop more insight and understanding, this proves to be effective (see Tabachnik & Zeichner, 1999). Hence, student teachers seem to need specific support to develop the insight that an important contribution of practitioner research is the development of their own practical wisdom, in connection to a broader overview, and a better understanding of existing theory.

Being able to help these students to acquire this insight may request a change in teacher educators themselves. Often teacher educators, at least in The Netherlands, have fairly traditional ideas about research. Self-study research is not common among teacher educators (Zeichner, 1999), or their superiors may force them to avoid a type of research focused on their own practice (Knowles & Cole, 1995). Self-study research can help to change these ideas, as is shown by the following citation from a teacher educator, who had been involved in a self-study project for a year:

Strong point of the facilitators was their fight against the idea that Research is about Important Things [with capitals]. That is not the case as now I too have found out. When I look at our group and myself, I see that we have a lot to offer. We have baggage that is important enough to describe and report on (as was emphasized again and again by the facilitators). (Zwart, Korthagen, & Lunenberg, 2008b, p. 6)

We feel that this teacher educator may now be more capable to help student teachers to choose a research topic and research methods that help these student teachers to develop their practical wisdom.

Improving teacher education

Our analysis shows why Mary's student teaching experience may have contributed little to the development of practical wisdom. Although Mary had experimented with working in pairs during her apprenticeship, a detailed reflection on her own role and her co-operating teacher's role in this situation was lacking; nor was she helped by being offered relevant theory for supporting her practical wisdom, or her awareness of the particulars of the classroom situation. Mary might have discovered what exactly happened in her class if, for example, she would have been challenged to test the learning style of some students, to interview them about the consequences for their learning, and to reflect on the meaning of her research results for her teaching practice, or if she would have made video-recordings of her lessons and would have interviewed students, and reflected about these experiences in a detailed and focused way. Then, probably, it would not have taken her three years to develop an effective solution to her problems. We feel that exactly at this point, there is room for improvement in teacher education. Teacher education can, in our view, be more effective, also within a limited time frame, if the triangular relationship between experience, theory, and practical wisdom is taken seriously as the basis for curriculum development and teacher educator interventions. This view goes beyond the frequent discussions about what should come first, theory or practice, or about the degree to which teacher education should be school-based. Hence, this requires that the whole context in which teacher education takes place is considered, for as Zeichner and Gore (1990, p. 343) put it in their review of teacher socialization:

Studies that have focused on the institutional and cultural levels of analysis have clearly shown, for example, that various ideological and material conditions within teacher education institutions, schools, and societies serve to establish limits on the range of options available to both teacher education students and teacher educators.

Finally, it is important to emphasize that it requires a high level of expertise on the part of both co-operating teachers in schools and teacher educators to promote student teachers' practical wisdom by enhancing their awareness for certain aspects of their experiences, and to promote student teachers' ability to use this practical wisdom during new teaching experiences. More complex is the task of effectively connecting experience, theory, and practical wisdom. Finally, an even higher level of expertise is needed not only to take care of this connection, but to help novice teachers in developing their own insight into this connection, and to promote their capacity to keep making this connection over and over again in their future careers.

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