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Abstract

Professional development needs to be understood as a spontaneous process of learning at work before moving on toward the 'desired' professional development. Learning as a result of working is often implicit, stems from social interaction and direct experience, involves the (thoughtless, implicit) reproduction of habits as well as the building of expertise, does not depend on any educational intervention to go on, and is very powerful in directing behaviour in work situations. A critical social-cultural constructivist view recognises learning as socialization, sharing meaning in more implicit and explicit ways, but also emphasizes learning as critical reflection on premises and joint action to change practice. In short, professional learning implies participating in the social construction and reconstruction of reality. Depending on the organizational culture, professional learning may primarily serve the sharing of dominant discourse (socialization), or support individuals and groups in critical reflection on the shared premises, values, behaviour, (hierarchic) relations in school and community, and possibilities to change these.

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PROFESSIONAL DEVELOPMENT BETWEEN TEACHERS' PRACTICAL KNOWLEDGE AND EXTERNAL DEMANDS: PLEA FOR A BROAD SOCIAL-CONSTRUCTIVIST AND CRITICAL APPROACH

Introduction

Professional development is a popular concept these days, used in various combinations such as 'professional development schools' and 'professional development programs'. What do we mean when we talk about 'development' and when we use the adjective 'professional'? The first meaning of 'development' according to Collins English Dictionary is 'the act or process of growing, progressing or developing'. It seems important here to recognize both the act and the process, that is, development can be an act as well as something just happening. Assuming that professional development is the result of learning processes, the act can be interpreted as the purposeful, intentional learning activities professional teachers may carry out, while the process of professional development may refer to the less conscious and implicit learning that comes from working in the teaching occupation. The second meaning of 'development' according to Collins is 'the product or result of developing'. In other words, 'development' may be used both as a verb and as a noun, referring to the learning activities and processes or to the result of learning.

A profession is 'an occupation requiring special training in the liberal arts or sciences'. Although Collins mentions especially law, theology, and medicine, we now assume teaching to be a profession as well. Note that 'professional' has a double meaning, simply referring to a person's work within a certain field, but also referring to a qualification, the high standard this person and his/her work should fulfil to deserve the adjective. Thus, professional development may be understood as a type of development that is required of professional workers such as teachers, and is characterized by certain qualities. However, it is important to recognize that professional development also refers to the process and result of learning from activities and experiences in the professional field, which may or may not contribute to fulfilling quality standards. While professional education and training including professional development programs focus on the intentional professional learning designed to meet professional requirements, it is often overlooked that professional learning and development also happen spontaneously while working, no matter whether anyone is paying attention to this process and its results.

In studying and promoting professional development we need to be aware of both meanings. If we want to facilitate the desired professional learning, the previous work-based learning needs to be taken into account, since learning always builds on prior knowledge. Also, spontaneous learning at work needs to be understood in order to reach and sustain changes in teachers' practice. Unfortunately, work-related learning is not understood very well within the mental models of learning that prevail in education. The dominant model focuses on the individual and puts cognitive understanding before action, while professional learning needs to be understood as a social process in the cultural context of work, often stemming from experience and action rather than the other way around. Moreover, the social interpretation of learning leads to the cultural and historical origins of meaning

construction, and the significance of diversity and power in this context. I will argue that, to understand and deal with teachers' professional development in a productive way, we need a broad, social-constructivist approach, combining insights from the cognitive and behavioural as well as the social, historical, cultural, and critical theory (Simons & Bolhuis, 2004).

Teachers' spontaneous learning at work

Studies of learning at work provide important insights in other learning processes and results then we usually think of in education, although educational models of learning often influence even studies of learning at work. When sometimes using the word 'work-based' or 'work-related' learning, this is not to refer to such activities as might be organized for apprentice-learning, but to spontaneous learning at work as discussed below. Drawing on various theoretical approaches four characteristics of spontaneous learning appear to be important. The first, the experiential and implicit nature of learning as an aspect of working is discussed in this section. The next sections discuss the other characteristics: learning as taking part in the social (re)construction of reality, the emotional aspects of learning, and the role of our frame of reference (prior knowledge, mental models) in learning.

Learning is an aspect of all activity (Lave & Wenger, 1991), direct personal participation or observation. Learning in work situations results from experience: from being immersed, from observing what is going on, what the environment is like, from trying to survive, from acting and reacting. The process of learning is in experiencing the world and oneself, and the results are immediately available in acting in the world. While professional development programs are designed to change teachers' cognitions, presuming that this will lead to the desired change in classroom practice, very often the sequence is the other way round. Teachers will stick to those actions they have experienced as successful with their students. "It is well known that successful actions are reinforcing and likely to be repeated while those that are unsuccessful tend to be diminished" (Guskey, 2002).

The wide spread use of the concept of experiential learning, especially in adult education, has brought much confusion about the precise role of experience. Ever since Dewey and following Kolb (Kolb, 1984), educators have adopted 'experiential learning' to serve educational ends. With educational goals in mind 'experiential learning' is defined as a cycle moving from experience to concept formation, evaluation, and intentional experimentation. As a result, experiential learning was never defined properly (Heron, 1992, cited in Yorks & Kasl, 2002). The point is that experiential learning in itself does not necessarily include conscious concept formation, nor testing of these concepts in the following actions. The educational model of 'experiential learning' is modelled after the scientific research model and as such it is considered the 'ideal learning model' (Miettinen, 1999). However, learning does not automatically happen that way.

Criticism of the educational notion of experiential learning concerns a neglect of experiential learning itself and the underestimation of the emotional and social aspects of learning (Yorks & Kasl, 2002). When we restrict our understanding to pedagogical perspectives on experiential learning (Fenwick, 2000), it seems difficult to estimate the impact of what is really learned 'only' by experience, with its advantages and disadvantages. An important advantage of experiential learning is the immediate availability of the learning results in action. There is no transfer problem from theory to behaviour; doing is learned by doing. The (prospective) teachers act the way they learned from experience without hesitation, immediately initiating and responding to what happens in class, needing no time to think.

Experiential learning is implicit in the sense that what is learned has not been converted into educational content first, but is learned directly from observation and participation. Direct observation and participation may be accompanied by verbal exchanges about what is going on, but these conversations are part of what is going on. The person's focus in work situations is not on learning, but on the goals and nature of work: what to do and how to do it. The teacher at work is not aware of learning while working, although afterwards, the teacher may - but does not necessarily - conclude that s/he has learned, that s/he has become more skilful and more expert. Even when at the time of learning the teacher is aware of having learnt, the results usually become implicit in use. The teacher acts the way s/he has learnt without conscious reflection on the knowledge, skills and attitudes implied in acting, in the 'what and how and why' of his/her actions.

'Tacit knowledge and skills' are well-recognized aspects of expertise and an important resource of organizations (Nonaka & Takeuchi, 1995; Polanyi, 1967). Recent research on teachers tends to honour their experiential knowledge as 'practical knowledge' or 'practical wisdom' (Meijer, 1999). On the other hand the tacit or implicit results of learning are not per se contributing to expertise but may also comprise restricted or wrong understandings and behaviour. When teachers' experiential knowledge and skills remain implicit, this may have several disadvantages. Five reasons plead for raising awareness (Bolhuis, 2001). In the first place, to discover the restrictedness or faults in individual or shared understandings and practice it is necessary to make them explicit by discussing what is happening and what is assumed by the actors. Secondly, tacit knowledge and skills are not always easily shared with others who may have other experiences in other social and cultural contexts, hence another understanding of the situation. Thus, a mutual understanding, exchange and reconstruction ask for making the implicit explicit. Thirdly, tacit assumptions may make it difficult to help newcomers profit from the expertise of others. If they are only required to copy what more experienced

colleagues do, they may not understand the reasons why, and may not learn to think on their own. Fourthly, collaborative work in teams requires sharing of assumptions about the goals and activities in the team in order to build team expertise and be productive as a team. Finally, tacit knowledge and skills may need critical appraisal and change in response to changing situations. When the current situation is taken for granted signs of change may be unnoticed and not adequately responded to.

Learning as taking part in the social (re)construction of reality

Experience is coloured by the social context. To understand what is involved in teachers' daily experiences in practice, we need to turn to theories that regard learning from the cultural and historical perspective, locating learning processes and results in social interaction and practice. Learning may be conceived of as the process of sharing meaning with others and thus participating in the social construction of reality (Berger & Luckmann, 1967). Social-cultural theory includes the historical perspective: culture as a set of shared meanings has been built up in time, by generation after generation. Schein (1985, p. 3) defined culture as 'the pattern of basic assumptions that a given group has invented, discovered, or developed in learning to cope with its problems of external adaptation and internal integration, and that have worked well enough to be considered valid, and, therefore, to be taught to new members as the correct way to perceive, think, and feel as related to those problems'. Since solutions to problems may have been invented long ago, even generations back, the correct ways to perceive, think, feel, and behave have become rather self-evident. They have turned into habits and are not discussed any longer. Discussions may emerge around elements of the solutions, or about new problems arising from the original solutions, without returning to the original problem however. It has become very hard to conceive of other solutions, and if anyone tries to do so, the resulting ideas are often rejected as 'too radical' and 'unrealistic'.

Teachers' behaviour and learning are rooted in the cultural and historical phenomenon of our educational system, in school experiences from early age on. On numerous occasions everybody has learnt by experience what 'school', 'teaching', 'learning', etc. mean. This implies that basic assumptions about why and how education is organized as it is in our society are not easily made explicit or criticized. When the well-known solutions, that have been regarded valid as long as one can remember, seem not to work as well anymore, it turns out very difficult to change. At the individual level of the teacher, at the group level within school, at the school level, at the level of the community involved (parents, policy makers, etc.). The old solutions are deeply engrained, in the perception, thought and feelings of individuals; they are also strengthened through social discourse, the social interaction in diverse settings, and embedded in the organizational solutions, language, tools, and instruments.

However, culture is also a dynamic phenomenon; learning may imply sharing in the well-known solutions, but may also involve the reconstruction and invention of new solutions to old and new problems. The social nature of learning does not imply a determinist view which would reduce all learning to reproduction. Social, cultural and historical theories of learning as well as theories of organizational learning often recognize this double function of learning: "the production of continuity with, and the displacement of, the practice of old-timers" (Lave, 1991), 'single loop and double loop learning' (Argyris & Schön, 1978), 'reproductive and productive', or 'adaptive and innovative' learning (Ellström, 2001). Critical theory (Bolhuis, 2003) also recognizes this double function, and explicitly situates learning in the socio-political context, when analysing learning as part of power relations and strategies. Power is expressed in the cultural meanings and in the imposition of these meanings as if they hold the only possible truth. The concept of learning in critical theory includes both the internalisation of - oppressive - cultural meaning, transmitted and imposed by the most powerful, as well as critical, liberating, or transformational learning (Baumgartner, 2001). This critical part of learning implies becoming conscious as well as action, 'conscientizaçao' and 'praxis' in the words of Paolo Freire (1971). Critical theory and critical pedagogy seek to raise consciousness and critical appraisal of the 'truths' that are embodied and presented by schools and society. A multicultural world shows the conflicts between 'truths'. Today's rapid growth of knowledge also indicates the tentativeness of actual knowledge. Critical pedagogy challenges schools to recognize the oppressive effects of learning, to help teachers and students to deal with the uncertainties and provisional character of our understanding of the world, to reflect on what seems self-evident, and on the differences and conflicts between the 'truths' of diverse participants, to deal with the power dimensions of knowledge, and to think of alternatives and possibly realize these (Bolhuis, 2003). Teachers as well as students need to become aware how they play a part in the construction and reconstruction of reality (Baumgartner, 2001; Berger & Luckmann, 1967; Cranton, 1996). However, this is not merely a cognitive and rational task. Taking responsibility for the social (re)construction of reality requires an emotional commitment, involving the teacher's sense of identity, motivation and tolerance of uncertainty.

Emotional aspects of learning: identity, motivation, and certainty orientation

Experience and the social sharing of meaning are coloured by emotions. Human beings have a need to belong, to feel part of a community - hence the motivation to learn, as the way to become a member of the community. Teachers' professional development evolves around the development of identity as a teacher. A growing participation in the social practice of the profession involves an increasing sense of identity as a master practitioner. Not only is identity development a source of motivation, moreover, "learning and a sense of identity are inseparable: They are aspects of the same phenomenon." (Lave & Wenger, 1991 p.115). Thus, the development of a professional identity is closely related to sharing meaning construction in the social context. The culture of the community and in particular the school has an important influence on how teachers feel they should behave, what they tend to value in their students and in their own activities, what they belief teaching and learning is all about. When at work teachers want to feel at ease with their colleagues as well as with their students, they want to feel they are doing something meaningful with their students, and they want to feel appreciated by students and colleagues. As Guskey (2002) points out, teachers feel rewarded when students' behaviour and results seem satisfactory. If not, an explanation is needed. "Teachers who have been consistently unsuccessful in helping students from educationally disadvantaged backgrounds to attain a high standard of learning, for example, are likely to believe these students are incapable of academic excellence. If, however, those teachers try a new instructional strategy and succeed in helping such students learn, their beliefs are likely to change." (Guskey, 2002, p. 384). Guskey does not discuss under what conditions teachers would try a new instructional strategy.

However, changing habitual behaviour - and thought - is not easy, and a major problem in professional development programs. Emotions play an important part here as well. Trying new behaviour is a risky endeavour that goes with uncertainty about the effects on students, one's own competence, and appreciation of colleagues and others. Therefore trying new behaviour may seem unattractive or even dangerous. In work-based learning, teachers may need to experience their actual behaviour in relation to their students as unsatisfactory or in some way problematic to take the risk of trying something else. Trying new behaviour can become more attractive when teachers have an alternative model around, on the condition that this model looks like an improvement as well as a feasible alternative.

A strong certainty orientation may prevent teachers' change, as they tend to stick to what they (believe to) know and do not like to investigate what is unknown to them. Individuals as well as cultures differ in their certainty orientation or tolerance of uncertainty (Hofstede, 1991; Huber & Sorrentino, 1996). People with a high tolerance of uncertainty tend to feel challenged by ambiguous situations, and like to examine new information that contradicts their conceptions. The traditional school culture often reduces uncertainty in students' as well as in teachers' learning as much as possible. School organization and the curriculum usually afford a kind of certainty (about what to do and what is true) that we seldom come across in life outside school. Differences in certainty orientation between teachers as well as students of different backgrounds within a school need to be taken into account in school improvement activities. While uncertainty oriented teachers (and students) may enjoy changes, discussions, and collaborative work, the more certainty-oriented teachers may need support in a more gradual participation (Huber & Roth, 1999).

The role of frame of reference in learning

Findings in cognitive psychology about the significant influence of prior knowledge on subsequent learning are also relevant in work-based learning. To avoid a narrow cognitive interpretation of knowledge the concept 'frame of reference' may be preferred to include all types of prior learning. A person's frame of reference comprises all (emotional, cognitive, procedural) meaning constructions the person has acquired as a result of the personal learning history, which includes both spontaneous and formal learning (Bolhuis, 2001). Learning theorists use various concepts when discussing the importance of prior knowledge such as mental models, subjective theories, and preconceptions. Whatever was learned first has a very firm position, and provides the person in most situations with an immediate meaning construction. As mentioned, spontaneous learning such as learning at work contributes to the frame of reference, which happens in experiential and socially constituted situations. As a result, teachers understand their activities, their students, and whatever happens in and around school, from the point of view they have acquired in the first place. People will always try to fit in new experiences within their frame of reference. Research on prior knowledge has shown how learners may invent all kinds of distortions to make new information fit with the existing mental models, or forget about the new information. This is not an intentional process but happens unconsciously; people are not aware of the eyes with which they view the world.

The role of prior knowledge is mediated by individual differences in certainty orientation as discussed before. When confronted with contradictory information some teachers will be more likely to investigate the situation while postponing their initial interpretation (high tolerance of uncertainty) than other teachers who are more afraid to let go of their cognitions (low tolerance of uncertainty).

What may the insights about spontaneous learning at work as discussed above contribute to the way we interpret teachers' professional development? The next sections will discuss the possible implications focusing on reflection and teacher research as mainstream ideas about professional development.

Professional development and reflection

Today reflection as a way to learn is widely recommended in teacher education and professional development schools and programs. The concept is used in combinations such as reflective teaching or reflective practice, and often accompanied with the adjective 'critical' (Clegg, Tan, & Saeidi, 2002; Cranton, 1996; Korthagen & Kessels, 1999; Zeichner & Liston, 1996). Schön should be mentioned as the author who has drawn attention to reflection as a professional way of learning and developing (Schön, 1983, 1987), irrespective of the later criticism on his conceptualisations of reflection-in-action (Beckett, 1996), and on Schön's individual perspective, lacking a focus on the social context in which the professional is working (Zeichner & Liston, 1996). In educational settings such as teacher institutes, reflection is usually employed as a bridge between experiences in practice and theoretical learning, and as a way for the student to explore one's own hidden assumptions (Korthagen & Kessels, 1999; Korthagen, Klaassens, & Russell, 2000). Reflection is "the mental process of trying to structure or restructure an experience, a problem or existing knowledge or insights"(p. 247). When students get reflective assignments, that is, when they are required to reflect, often according to a prescribed format of questions or guidelines, and in a written form, this may not be productive for all of them, and overlook the value of practical immersion (Clegg et al., 2002). It seems appropriate at least not to restrict reflection to thought but to focus on critically reflective work behaviour, which may be defined "as a set of connected activities carried out individually or in interaction with others, aimed at optimising individual or collective practices, or critically analysing and trying to change organizational or individual values" (van Woerkom, 2003).

Korthagen and his colleagues call attention to the importance of congruence in teacher education. It is in line with what we know of spontaneous learning to assume that the best way to learn reflective behaviour is the opportunity to observe and interact with model-practitioners who show what it is like to practice critical reflection as a teacher. When the community of practice is not reflective, how can novices be expected to participate in reflective practice? "The existing cultures and discourse communities in many schools, however, do not value or support critical and reflective examinations of teaching practice" (Putnam & Borko, 2000).

Another possible flaw in promoting critical reflectivity may be caused by a rational, purely intellectual view on reflection. Not taking into account the affective, emotional aspects may lead to reverse effects. The (prospective) teachers may be tempted to rationalize their own behaviour and what goes on in school, by blaming the outside world, instead of looking for their own role, seeking explanations e.g. in habitual behaviour that goes with implicit assumptions, and preparing for alternatives. Ponte for example notes that teachers in action research find it easier to tell what the school should do than to think of what they could do themselves (Ponte, 2002). The same happens in environmentalist groups where members were very critical about the external world, but not about their own processes and strategies (Wildemeersch, Jansen, Vandenabeele, & Jans, 1998). The authors situate critical reflectivity on a dimension of distance versus identification, and the authors conclude that focusing too heavily on the cognitive and rational side (distance) will easily enhance feelings of "emptiness" and "being lost". Guidelines are needed "for the affective need of identification and belonging" (p. 256). In other words, the social context should be sufficiently safe as well as challenging for teachers – who vary in their certainty orientation – to be able to admit and discuss what went wrong, why, and how things might go better.

When discussing how to promote professionals' critical reflective learning, the conceptual change research may be informative. This research concerns the problem of changing prior knowledge (beliefs, mental models, naïve or subjective theory), and identified several conditions that are important in facilitating this type of learning (Strike & Posner, 1985, summarized in Biemans, 1997). These conditions include 1) a feeling of dissatisfaction with prior knowledge, e.g. because of contradictory experiences or unsolved problems, 2) the new conception must at least make some sense to the learner, since completely incomprehensible information will be immediately rejected, 3) the new conception must appear plausible enough to invite further consideration, and 4) the new conception must be fruitful, that is solve problems in a better way than the prior conceptions did. Although the conceptual change theory has focused on acquiring scientific conceptions replacing prior understanding, the identified learning conditions may be extended to professional learning. There are some points to add however that we may derive from critical theory.

Firstly, professional learning does not only or primarily require the replacement of prior conceptions: professional behaviour is the most important outcome. The assumption that professional learning will lead to a change in behaviour by focusing on a change in cognitions (attitudes, beliefs and perceptions) has proven to be wrong. Therefore, professional 'behaviour' needs to be added to 'conception' in each of the four conditions. Secondly, taking into account the implicit nature of the learner's frame of reference, a preceding condition is necessary, namely becoming aware of one's own behaviour, assumptions and interpretation of the situation. As discussed above, the individual's implicit cognitions and habitual behaviour are likely to be socially shared and reinforced as part of the cultural assumptions and arrangements. Therefore, raising awareness is not an easy

condition. It involves for instance the overcoming of the explanations of an unsatisfactory situation. As Guskey already illustrated (see above), many beliefs are already in place to explain the unsolved problems. The social nature of teachers' learning and participating in school practice indicates that the conditions for change should be fulfilled at the social-cultural level, which may involve the school team as well as the local or larger community. Since teachers, and all others involved, are habituated to the accepted solutions of teaching, an explicit effort in rising awareness of the unsatisfactory quality of these solutions is necessary to reach the kind of dissatisfaction that frees the way to the consideration of alternatives.

Further research on conceptual change has identified the following steps in learning: searching for preconceptions (to be compared with raising consciousness), comparing and contrasting preconceptions with new information, constructing new conceptions, and evaluating new conceptions (Ali, 1990; cited in Biemans, 1997). Interestingly, conceptual change vanishes when use of the new concepts is not integrated in daily practice (Kikas, 1998). We may expect this to be certainly the case when a change in professional behaviour is concerned. Of all aspects of professional development, sustaining change is perhaps the most neglected (Guskey, 2002).

Professional development and teacher research

Especially in the U.S. many authors recommend involvement in research of teachers - and teacher educators - as the best way to promote professional development and learning. Often the research is not solely done by teachers, but is a joint effort of academic researchers and teachers, and/or teacher educators. Authors certainly do not agree on what should be the role of teachers and how collaboration with researchers should be (Anderson & Herr, 1999; Cochran-Smith & Lytle, 1999; Cohen, Manion, & Morrison, 2000; Cousins & Earl, 1992; Cranton, 1996). In his review of the 'new scholarship in teacher education', Zeichner notes that in many self-studies teacher educators focus on the contradiction between their professed philosophies and the reality of their practice, and goes on to observe that "the self-study genre of research in teacher education is the one clear example of where research has had an important influence on practice in teacher education" (Zeichner, 1999). Most of the critique of teacher research bears on questions about knowledge status and related methodological issues. In short, are the results valid, are they of any value beyond the particular context in which they were found. Advocates commend teacher research as an important professional development strategy.

Why would teachers' involvement in research promote their professional development and, as a result, educational innovation? One argument for practitioner research is that teacher-researchers will choose more relevant problems, because of their direct involvement in practice, and thus produce knowledge that is more useful. Other explanations focus on sharing knowledge as key feature, including the collaborative processes of choosing issues to examine, collecting data and discussing what they mean, perhaps followed by planning collaborative experiments and other action to change practice. This is in line with Cousins (1992) who states that the literature on organizational learning provides theoretical support for participatory evaluation stemming primarily from the view that knowledge is socially constructed and cognitive systems and memories are developed and shared by organization members. A review of empirical studies was found to support the organizational learning model (Cousins & Earl, 1992). When researchers from outside are involved, the amount of contact with teachers is a predictor of the teachers' use of the research data. The 'social processing' of information seems to be a key factor. Huberman, although quite critical about teacher-research, also observes that sustained interactivity is effective in the 'dissemination' of results of educational research (Huberman, 2002).

Pleading in favour of teacher research as a professional learning strategy is often built on similarities (as discussed above) between a cognitive social-constructivist model of reflective learning and the research model. These similarities need some caution. Research rests upon (regularly disputed) agreements about how to arrive at knowledge that will be accepted as valid. Teachers and teacher educators studying their own practice are supposed to produce 'shared knowledge' in much the same way. This fits well within the tendency to employ idealized models of learning in educational settings. From the educational point of view the focus is on the desired type of professional learning, just like models for doing research are concerned with the desired way to produce the right knowledge. Although the research-model may be similar to a certain type of learning, this does not mean that all learning is like doing research. The analogy may lead to forget about those learning processes and results that are usually overlooked in educational settings. As discussed above, studies of learning at work have enriched the cognitive social-constructivist model with a focus on behavioural learning, the role of identity and emotions, the implicit aspects of learning, and learning at group level (organizational learning). A social-constructivist view needs to include the cultural-historical origins of knowledge construction, and therefore the possibility of reconstruction as advocated by the critical theory. The critical theory stresses the struggle necessary to reconstruct reality not only because of the strong nature of socialization requiring the raising of consciousness to make reconstruction possible, but also because of the often hidden societal power relations that are involved in the status quo. A conceptual reconstruction needs to go with a reconstruction of social-political practice; consciousness (cognition, understanding) and action in practice are necessarily connected as two sides of one process (Freire, 1970). When viewing research as similar to learning, similarities should also be looked

for in the way research is embedded in societal power structures that influence where the money goes, the choice of topics, questions of validity, publication of results, in short whose voices about what are heard by whom.

Aims of professional learning and development

This brings us to the most important issue that remains: who is to decide, why and on what grounds, on the contents and directions, on the values to be pursued in professional learning. On a general level, agreement on the goals seems self-evident. Professional development should be pursued in the light of equity and democracy (Cochran-Smith, 2003); the main challenge of educational research is to serve 'the pursuit of opportunity' (Schoenfeld, 1999). Zeichner and Liston (1996) warn that reflection does not per se lead to better professional action, but may instead even reinforce bad practice when reflection is not critical and based on values to be pursued with education in a democratic country. At the same time, teacher research as 'critical praxis' also presupposes open and democratic relations in schools, which may not always be reality (Cohen et al., 2000). In practice more over, professional development is often connected to external demands, politically inspired and/ or research-based, and for instance formulated in innovation programs or requirements for accreditation. Unless external demands are a shared ambition within the school, they usually have little impact on educational practice.

Considering what we know about learning as discussed above, it does not help us much further to take the answer to the question about the purpose of professional learning for granted. The experiential and implicit, tacit nature of spontaneous learning make understandable how beliefs and behaviour remain unconscious, and contradictions between professional behaviour and beliefs about the purposes of education go unnoticed, reinforced by the cultural assumptions about, and the habits and organization of education. The emotional aspects of learning, such as teachers' identity involved in learning at work, and an educational culture favouring certainty orientation, may function as an extra safeguard against honest inquiry and considering difficult, perhaps painful change. The social-cultural and political nature of our beliefs and behaviours should make us cautious about the diversity of these understandings in different cultural groups, and of the possible conflicts between them that we may not even be aware of. Depending on the organizational culture, work-based learning in the school may primarily serve the sharing of dominant discourse (socialization), or support critical reflection of individuals and groups on the shared premises, values, behaviour, and (hierarchic) relations.

Conclusion

Promoting professional development cannot afford to work with an idealized model of learning, but needs to start with a comprehensive understanding of the implicit, behavioural, and emotional characteristics of spontaneous learning, and especially the social-constructivist nature of our world-understanding with its historical roots and socio-political weight. Promoting teachers' professional development should be approached as a learning problem at both the individual and social level of the team, school and community, embedded in the socio-political struggle to conserve and/or reconstruct our world in which teachers are co-actors.

If we are serious about the key role of education in a democratic and open society, education should position itself as a key facilitator for all. Critically reflective and social learning involves moving from implicit to explicit, from individual autonomy and the authority of power to shared responsibility in a continuous process of dialogue and joint action, including the socio-political and ethical dimensions (Veugelers, 2000) of our shared enterprise, education.

References

Anderson, G. L., & Herr, K. (1999). The new paradigm wars: Is there room for rigorous practitioner knowledge in schools and universities? *Educational Researcher, 28*(5), 12-41.

Argyris, C., & Schön, D. A. (1978). *Organizational learning: A theory of action perspective*. Reading: Addison-Wessley.

Baumgartner, L. M. (2001). An Update on Transformational Learning. In S. B. Merriam (Ed.), *The New Update on Adult Learning Theory* (Vol. 89, pp. 15-24). San Francisco: Jossey-Bass.

Beckett, D. (1996). Critical judgment and professional practice. *Educational Theory, 46*(2), 135-149.

Berger, P. L., & Luckmann, T. (1967). *The social construction of reality*. Harmondsworth: Penguin Books.

Biemans, H. J. A. (1997). *Fostering activation of prior knowledge and conceptual change.* Proefschrift. Katholieke Universiteit Nijmegen.

Bolhuis, S. (2001). *Leren en veranderen bij volwassenen. Een nieuwe benadering. [Learning and change of adults. A new approach.]* (2nd ed.). Bussum: Coutinho.

Bolhuis, S. (2003). Towards process-oriented teaching for self-directed lifelong learning: A multidimensional approach. *Learning and Instruction, 13*(3), 327-347.

Clegg, S., Tan, J., & Saeidi, S. (2002). Reflecting or acting? Reflective practice and continuing professional development in higher education. *Reflective Practice, 3*(1), 131-146.

Cochran-Smith, M. (2003). Learning and unlearning: the education of teacher educators. *Teaching and Teacher Education, 19*(1), 5-28.

Cochran-Smith, M., & Lytle, S. L. (1999). The teacher research movement: A decade later. *Educational Researcher, 28*(7), 15-25.

Cohen, L., Manion, L., & Morrison, K. (2000). Action research. In L. Cohen, L. Manion & K. Morrison (Eds.), *Research Methods in Education* (fifth ed., pp. 226-241). London: Routledge Falmer.

Cousins, J. B., & Earl, L. M. (1992). The case for participatory evaluation. *Educational Evaluation and Policy Analysis, 14*(4), 397-418.

Cranton, P. (1996). *Professional development as transformative learning: New perspectives for teachers of adults*. San Francisco: Jossey-Bass.

Ellström, P.-E. (2001). Integrating learning and work: Problems and prospects. *Human Resource Development Quarterly, 12*(4), 421-435.

Fenwick, T. J. (2000). Expanding conceptions of experiential learning: A review of the five contemporary perspectives on cognition. *Adult Education Quarterly, 50*(4), 243-272.

Freire, P. (1970). *Pedagogy of the oppressed*. New York: Herter and Herter.

Guskey, T. R. (2002). Professional development and teacher change. *Teachers and Teaching: theory and practice, 8*(3/4), 381-391.

Hofstede, G. (1991) *Allemaal andersdenkenden. Omgaan met cultuurverschillen.* Amsterdam: Contact. [*Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. 2nd ed. 2001 Thousand Oaks, CA: Sage]

Huber, G. L., & Roth, J. H. W. (1999). *Finden oder suchen? Lehren und Lernen in Zeiten der Ungewissheit [To find or to search? Teaching and learning in times of uncertainty]*. Schwangau: Ingeborg Huber.

Huber, G. L., & Sorrentino, R. M. (1996). Uncertainty in interpersonal and intergroup relations: An individual-differences perspective. In R. M. Sorrentino & E. T. Higgins (Eds.), *Handbook of motivation and cognition. Part III. Group Dynamics* (pp. 591-619). New York: Guilford.

Huberman, A. M. (2002). Moving towards the inevitable: the sharing of research in education. *Teachers and Teaching: theory and practice, 8*(3/4), 257-268.

Kikas, E. (1998). The impact of teaching on students' definitions and explanations of astronomical phenomena. *Learning and Instruction, 8*(5), 439-454.

Kolb, D. A. (1984). *Experiential Learning*. Englewood Cliffs, N.J.: Prentice Hall.

Korthagen, F., & Kessels, J. (1999). Linking theory and practice: Changing the pedagogy of teacher education. *Educational Researcher, 28*(4), 4-17.

Korthagen, F., Klaassens, C., & Russell, T. (2000). New learning in teacher education. In R. P. J. Simons, J. Van der Linden & T. Duffy (Eds.), *New Learning* (pp. 243-259). Dordrecht/ Boston/London: Kluwer Academic Publishers.

Lave, J. (1991). Situating learning in communities of practice. In L. B. Resnick, J. M. Levine & S. D. Teasley (Eds.), *Perspectives on socially shared cognition* (pp. 63-82). Washington, DC: American Psychological Association.

Lave, J., & Wenger, E. (1991). *Situated learning. Legitimate peripheral participation*. Cambridge: Cambridge University Press.

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

Miettinen, R. (1999). Transcending traditional school learning: Teachers' work and networks of learning. In Y. Engeström, R. Miettinen & R.-L. Punamäki (Eds.), *Perspectives on activity theory* (pp. 325-344). Cambridge: Cambridge University Press.

Nonaka, I., & Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York: Oxford University Press.

Polanyi, M. (1967). *The tacit dimension*. New York: Doubleday.

Ponte, P. (2002). *Actie-onderzoek door docenten: uitvoering en begeleiding in theorie en praktijk [Action Research by teachers: performance and facilitation in theory and practice]*. Leuven/Apeldoorn: Garant.

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

Schoenfeld, A. H. (1999). Looking toward the 21st century: Challenges of educational theory and practice. *Educational Researcher, 28*(7), 4-14.

Schön, D. A. (1983). *The reflective practitioner. How professional think in action*. Aldershot: Arena, Ashgate Publishing Limited.

Schön, D. A. (1987). *Educating the Reflective Practitioner*. San Francisco: Jossey-Bass.

Simons, R.-J. S., & Bolhuis, S. (2004). Constructivist learning theories and complex learning environments. In R. H. Mulder & P. F. E. Sloane (Eds.), *New Approaches to Vocational Education in Europe* (pp. 13-25).Oxford: Symposium Books.

van Woerkom, M. (2003). *Critical reflection at work. Bridging individual and organisational learning*. Proefschrift Universiteit van Twente. Enschede: Twente University.

Veugelers, W. (2000). Different ways of teaching values. *Educational Review, 52*(1), 37-46.

Wildemeersch, D., Jansen, T., Vandenabeele, J., & Jans, M. (1998). Social learning: A new perspective on learning in participatory systems. *Studies in Continuing Education, 20*(2), 251-265.

Yorks, L., & Kasl, E. (2002). Toward a theory and practice for whole-person learning: reconceptualizing experience and the role of affect. *Adult Education Quarterly, 52*(3), 176-192.

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

Zeichner, K. M., & Liston, D. P. (1996). *Reflective teaching: An introduction*. Mahwah, New Jersey: Lawrence Erlbaum Associates.