LESSON STUDY (LS) AND THE DEVELOPMENT OF TEACHING COMPETENCES: FROM PRACTICAL KNOWLEDGE TO PRACTICAL THINKING

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This paper aims to show the relationship between the processes generated by Lesson Studies and the development of practical thinking in teacher training. We propose broadening the focus of Lesson Study in order to reconstruct and improve the practical knowledge of teachers.

1. Practical Thinking and Practical Knowledge

We believe it is necessary to clarify what is involved in the processes grouped together under the umbrella term "practical thinking".

In our opinion, understanding these complex processes requires clarification of the meaning between two oft-confused concepts: *practical thinking* and *practical knowledge* (derived largely from Schön's concepts: reflection-on-action and knowledge-in-action).

We have defined **practical knowledge**, or *knowledge-in-action by Schön*, as the set of beliefs, skills, values, attitudes and emotions which operate automatically, implicitly, without the need for consciousness, and which influence our perception, interpretation, decision making and action.

Few individuals, including teachers, are aware of these maps, images and artefacts which make up their repertoires of practical knowledge and which they put into action in each situation. These assumptions constitute a microcosm of diverging day-to-day knowledge which occasionally contradicts the theories explicitly espoused by the individual in order to explain his or her behaviour (Zanting, Verloop & Vermunt, 1998). To this end Argyris (1993) emphasises the need to differentiate between "theories-in-use" and "espoused theories". These theories-in-use, acquired throughout the personal and professional history of each teacher, are shaped by automated functions and by different teaching myths and errors, often unconscious, which help ensure our way of acting remains anchored in the past. This unconscious dimension is permeated with beliefs, attitudes and habits, organised in systems, which are formed from an early age. For this reason, it is essential to deal with and emphasise the importance of intuition and of emerging meanings which are often forgotten and which, nevertheless, penetrate practical knowledge (Tardif, 2004; Van Manen, 1995; Greeno, Collins and Resnick, 1996: Korthagen, 2005, 2010; Lampert, 2010; Inmordio & Damasio, 2007; Hagger & McIntyre, 2006).

Moreover, in line with Argyris (1993) and Hammerness (2006), it should be emphasised that the personal and professional efficiency of each individual is related to the level of congruence which he or she is able to achieve between these "theoretical" devices – espoused theories- and theories-in-use, and there is little doubt that serious differences between the two imply high doses of dysfunctionality in interpretation and in action.

For the purpose of this research, however, ***practical thinking*** includes *knowledge-in-action* and *reflective knowledge-on-action*. More specifically, we could define practical thinking as being similar to the concept of competences, which Pérez (2007, 2009, 2010, 2012) formulates as a series of knowledge, skills, attitudes, values and emotions, both conscious and unconscious, which make up a complex system of understanding and action, activated in specific contexts which require analysis and intervention.

The situated character of practical knowledge can help us to understand its process of formation and change, provided we are capable of relating and interpreting it within the coordinates of the context.

1. 1. From practical knowledge to practical thinking

Going a step further in the definition of practical thinking, we understand that this **practical knowledge** must incorporate reflection processes (consciousness) in order to constitute **practical thinking.** Reflection can take place before, during or after the development of the action, but will only become operational once converted into habits and automatic functions, partly unconscious, which govern the subsequent processes of perception, interpretation and decision-making in unknown situations.

The formation of the practical thinking of teachers requires the development of these implicit, personal theories (Pozo 2008; Polanyi, 1975), which are at the heart of beliefs and identity (Korthagen, 2005), within a context of living experience (Grimmet & MacKinnon, 1992).

This reconstruction of practical knowledge into practical thinking therefore requires two complementary, equally essential processes:

- **Reflection-on-action (Theorisation of practice)**. In other words, leading to teachers reviewing and questioning the same images, ideas and practices as used in their day-to-day activity. Hagger and Hazel (2006) call this process ***practical theorising***. By compiling evidence on the development of their teaching in a specific context, teachers can first identify and then question the implicit theories which make up and condition their practice, and develop systematic processes to generate and check action hypotheses for the development of valuable changes and innovations (Franke & Chan, 2007; Ghousseini, 2008). It is therefore possible to discover the divergences and contradictions between their espoused theories and theories-in-use, along with the resources (knowledge, skills, attitudes, emotions and values) which are activated when intervening in the complex contexts of the classroom. In synthesis, practical theorising is the reflection of the teacher on his or her own practice, his or her own way of acting, in light of more relevant educational experiences and of the more consistent results of educational research.

- **The reconstruction of practical knowledge (Conversion of theory into habits to govern practice).** This process of reflection-on-action leads to the enrichment of the *primitive Gestalts* of each person or professional and their reconstruction in *informed Gestalts, in-use* (Korthagen, 2010). This is what we could call **Experimentation of theory**, in other words the transfer of the reformulated personal theory and of reflection on our practice to new methods, habits, values, attitudes and emotions which are now informed by our previous

reflection on the possibilities and limits, strengths and weaknesses, of our habitual ways of perceiving, interpreting, making decisions, relating and acting. This moment therefore requires the experience, practice and experimentation of new ways of perceiving, designing, making decisions, relating and acting to be emphasised.

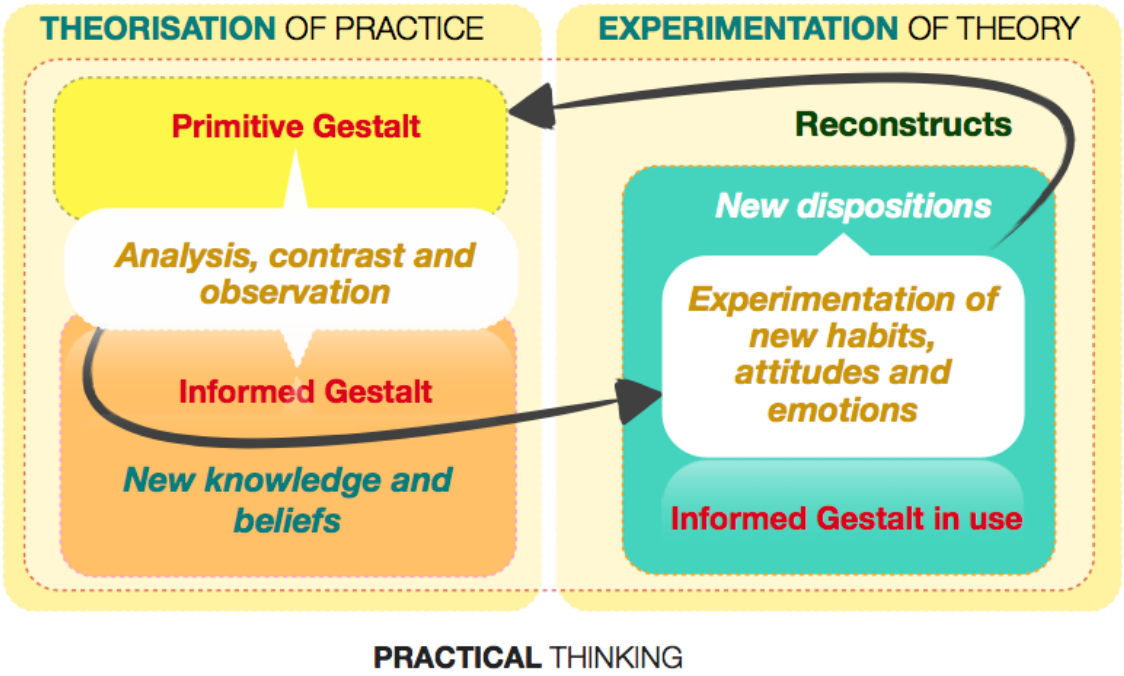

Chart 1. Process of reconstruction of practical knowledge into practical thinking

1. 3. The dimensions of practical thinking

In this respect, in order to clarify and guide the identification of practical thinking, we have distinguished several aspects and levels which may, *a grosso modo,* facilitate the description and understanding of the different comprising elements.

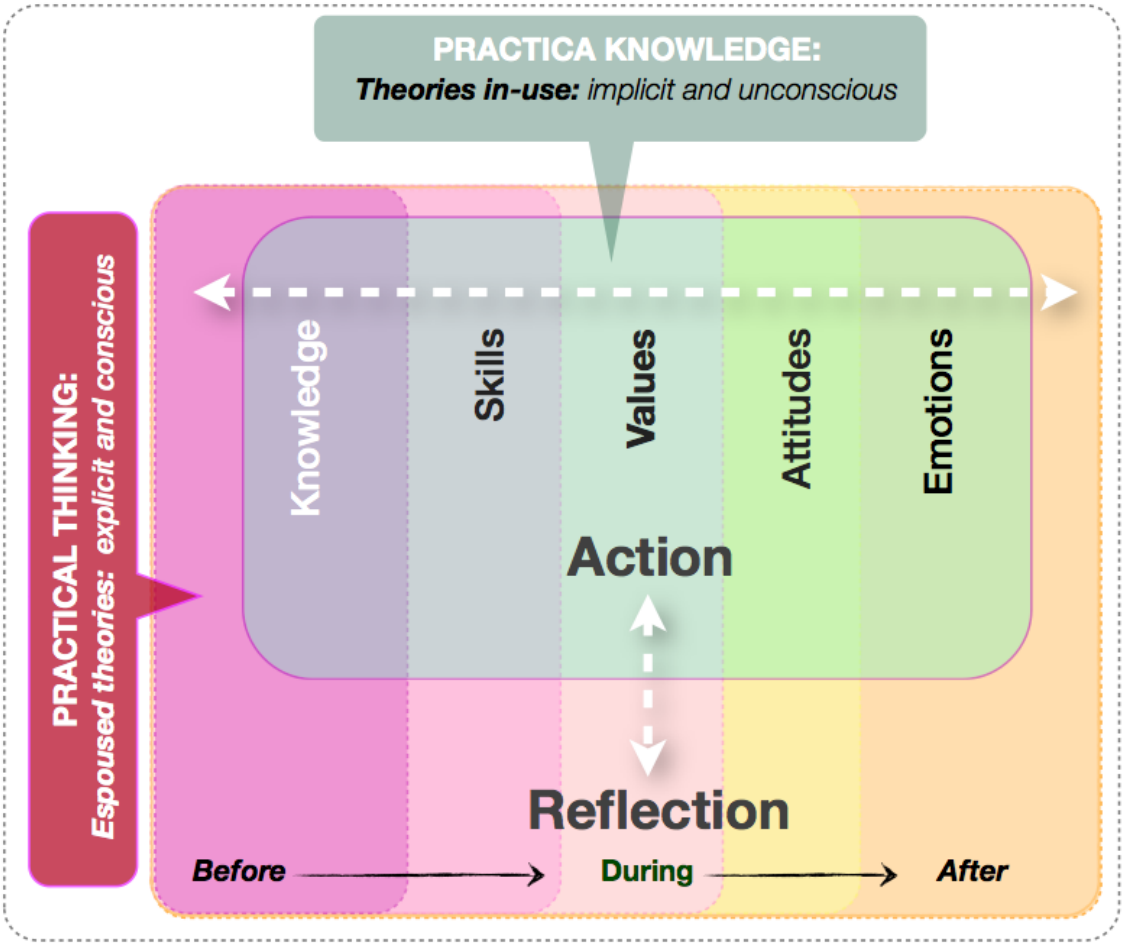

Chart 2. Dimensions of practical thinking and knowledge

- **Knowledge.** Knowledge consists of conceptual structures, systems of ideas, models or maps which help us interpret reality, design our intervention and envisage the consequences of a way of acting (Taber, 2006).
- **Skills** and **abilities**. These are also considered procedural knowledge and refer to expertise.
- **Values.** These constitute the principles of understanding and action which we consider valuable in our personal or professional life. They provide us with guidelines to formulate aims. These powerful resources reflect our most important interests, feelings and convictions (Jiménez, 2008). Obviously, values imply knowledge and are closely related to emotions.
- **Attitudes.** Eiser (1999) defines them as learned predispositions to respond in a consistent manner to a social object. These are closely related to emotions and habits.
- **Emotions**. These are primitive and/or evolved tendencies of acceptance or rejection, of approach to, stopping before or fleeing from stimuli and contexts.

All these elements are present both in declarative knowledge, which has traditionally occupied the content of pedagogical discussion, and in knowledge-in-use. This possible relationship between each of the aspects and the systematic series they make up helps us to better understand the peculiarities of our unique practical thinking, as well as the possible gap which may exist between our espoused theories and theories-in-use. This is

one of the core areas of our project: to analyse in depth the relationships of convergence and discrepancy between espoused theories and theories-in-use, and the capability of Lesson Study as a methodological tool to identify, contrast and review them.

As shown in most research (Elbaz-Luwisch, 2010; Savvidou, 2010; Pareja, N., Ormel, B., McKenney, S. Voogt, J. & Pieters, J., 2014; Peña, 2013), active participation in reflective and cooperative research practice is indeed a privileged instrument to identify and reformulate the different resources which make up the knowledge and practical thinking of teachers. Teachers have to train as researchers into their own practice in order to identify and regulate the implicit and explicit resources which make up their professional human competences and qualities. Such research-action processes clearly require a real practice scenario and the constant use of investigation. Understanding the necessary link between theory and practice, reflection and action, rather than a decontextualised theory or research, or repetitive, routine practice with scant regard for reflection and review (Grossman, Wineburg & Woolworth, 2001; Levine, 2010; Cochran-Smith, M. & Lytle, S., 1999).

2. Lesson Study as a context for the reconstruction of practical knowledge

Lesson Study is research work carried out by a group of teachers who meet regularly over a long period of time in order to design, experiment and analyse the development of a lesson (Stiegler and Hiebert, 1999).

In our opinion Lesson Study constitutes a fundamental resource to facilitate the internal contrast between the different espoused theories of the components of the group of teachers who design the core methodologies of the action and, above all, between the design itself and the development of a proposal which not only sets out the consequences of these espoused theories, but also opens the door to the natural emergence of the group's theories-in-use by connecting with the most immediate, practical aspects of the action and of those of the teachers developing it.

Practical thinking can find ways of discursive mediation and expression which make it communicable and interchangeable, and which, when shared, increases the quality and range of training for teachers and others.

2. 1. The design phase... after the description of one's own practice

In its original version, LS starts with a phase of problem definition and cooperative design of an experimental lesson. We have also found that introducing an initial description phase dealing with the core areas of individual practice in the Lesson Study is helpful from the point of view of the reconstruction of knowledge and practical thinking.

This initial stage can stimulate the contrasting of the teachers' *primitive Gestalts* and their informed reconstruction through group discussion and comparison with the contributions of others. Group deliberation may bring about the first movements in the formation of practical thinking, which we have called ***theorisation of practice.***

2. 2. Development and lesson observation phases

This stage develops the experimentation of the lesson by one of the team members, while the others record and collect evidence of student learning.

The development stage of the agreed design allows the teacher developing the practice to experience new attitudes, skills and emotions which may contribute to the formation of new habits for the experimentation of this *informed Gestalt* which has been progressively reconstructed in the design stage. Moreover, this process allows the teachers carrying out the action to observe the plasticity and flexibility of their thinking, allowing them to deal with the emerging processes found in any educational practice, even those based on shared research.

The process of observation of the rest of the group gives teachers the chance to look in a mirror and immediately compare their day-to-day practice. In consequence, the opportunity to observe, question and discuss in a group the strengths and weaknesses of one's own practice, dealing with both the design of the Lesson and its development, should be considered a privileged resource for developing the training strategy for practical thinking we have called ***theorisation of practice***.

2. 3. Analysis and shared reflection phase

This phase involves reflection on the evidence collected during the development of the Lesson, in order to improve it. After this, the Lesson Study is developed by another member of the group, in a different classroom, and then reviewed again.

The reformulation and practice of new habits and mechanisms in a second intervention, as deriving from the new, enriched understanding of the new *informed Gestalt,* is a perfect strategy for the development of what we have called the second movement in the formation of practical thinking: the ***theory experimentation*** phase.

The experimentation of the new theory or new *Gestalt* and its conversion into new, more flexible and powerful habits and dispositions requires more practice than reformulating and experimenting the Lesson a second time. In our proposal, this second experimentation is the starting point for subsequent practice in order to consolidate the new habits, attitudes, values and emotions which the new theory –the new, more informed and elaborate Gestalt– induces. To this end, in order to use LS as a powerful tool to promote the reconstruction of practical knowledge, it would appear necessary to conceive it as a series of continued Cooperative Action-Research programmes with the involvement of a group of teachers over an extended period. Informed practical thinking requires reflection and experience, experience and reflection. This experiential, reflective nature involves transforming deep-rooted beliefs and assumptions about teaching which are resistant to analysis, change and reformulation.

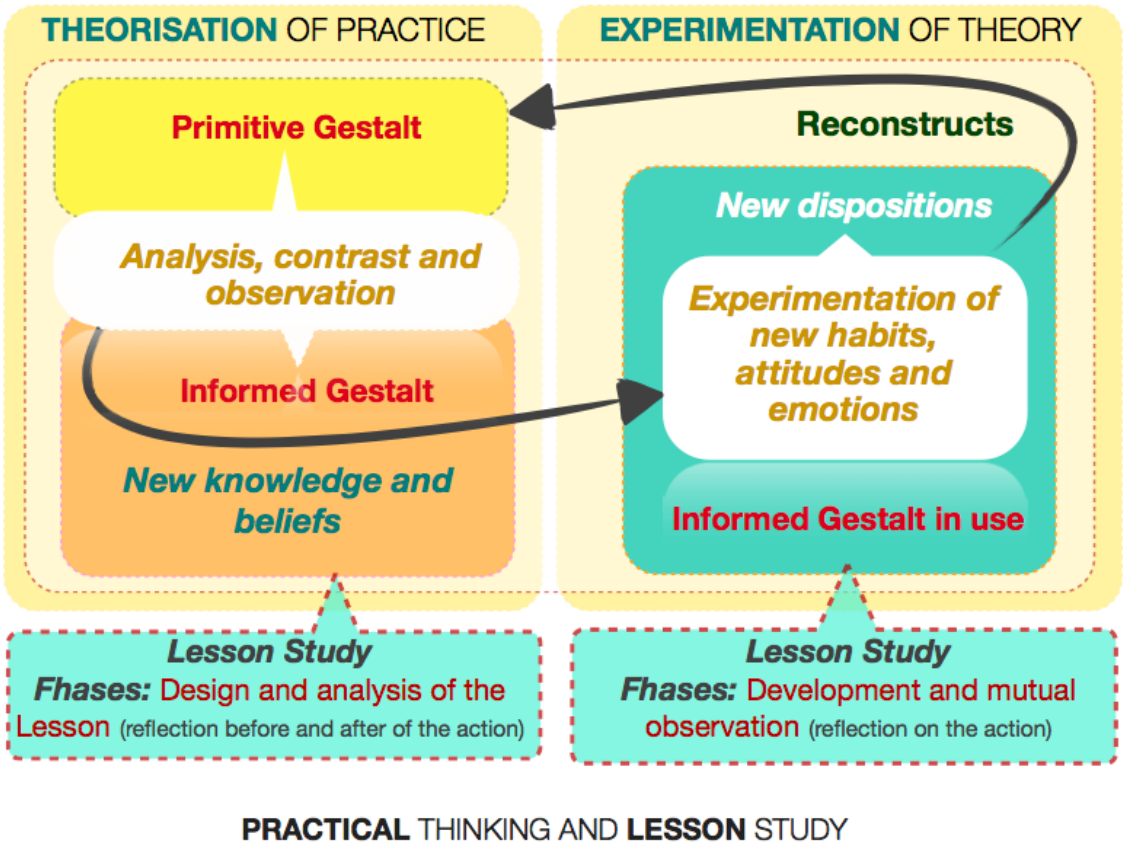

Chart 3. Reconstruction of Practical Thinking and Lesson Study

3. Conclusions

Apart from highlighting the observation of the effects which teaching has on the *learning* of students, the methodological slant we propose consists of focusing on *the practice of teaching-learning* as the object for observation, analysis, review and discussion, in order to:

- Firstly, facilitate the reflection of each teacher on the peculiarities of his or her practice and any congruence and/or dissonance between espoused theories and theories-in-use.
- Secondly, design a specific, ongoing programme of innovative action, consistent with the reconstructed theory and based on shared search, comparison of opinions and consensus on design.

We can therefore conclude that the purpose of the research developed through the implementation of LS contributes decisively to enriching the teacher training processes in line with an oft-forgotten dimension (Schön, 1998): that which is situated in the interstices between theoretical and practical training, through the incorporation of the practical knowledge of teachers in cooperative action research processes: Lesson Study.

BIBLIOGRAPHY

Argyris, C. (1993). *Knowledge for action: A guide to overcoming barriers to organizational change.* San Francisco, Jossey-Bass.

Cochran-Smith, M. & S. Lytle. (1999). "Relationships of Knowledge and Practice. Teacher Learning in Communities." *Review of Research in Education,* 24, pp 249-305.

Eiser, J.R. (1999). *Psicología Social*. Madrid, Valencia.

Elbaz- Luwich, F. (2010). "Studying teachers lives and experience. Narrative inquiry into K-12 teaching". In Clandining, D.J. (ed.). *Handbook of Narrative Inquiry Mapping a Methodology.* London, Sage, pp 357-382.

Franke, M.L. & Chan, A. (2007). "Learning about and from focusing on routines of practice." Paper presented at the annual meeting of the American Educational Research Association, Chicago.

Ghousseini, H. (2008). *Learning with routines: Preservice teachers learning to lead classroom mathematical discussions.* Unpublished doctoral dissertation. University of Michigan, Ann Arbor.

Greeno, J. G., Collins, A. M., & Resnick, L. B. (1996). Cognition and learning. En J. Greeno, A. Collins, & L. Resnick (Eds.) *Handbook of research in educational psychology*. New York: Macmillan.

Grossman, P., S. Wineburg, & S. Woolwoth. (2001). "Toward a Theory of Teacher Community." *Teachers College Record,* 103 (6), pp 942-1012.

Hagger, H. & Hazel, H. (2006), *Learning Teaching from Teachers: Realising the Potential of School-Based Teacher Educatio*n, Open University Press, Buckingham, GBR.

Hagger, H. & McIntyre, D. (2006). *Learning teaching from teachers. Realizing the potential of school-based teacher education.* Berkshire, Open University Press.

Hammerness, K. & Shulman, Lee (2006). *Seeing through teachers' eyes: Professional ideals and classroom practices.* Amsterdam, Teachers College Press.

Hammerness, K., Darling-Hammong, L., Bransford, J., Berliner, D., Cochran-Smith, M.

Jiménez, J. C. (2008). *El valor de los valores en las organizaciones.* Caracas, Cograf.

Korthagen, F. (2005). "Introduction: Personal links that shape the identity of teacher educators". In G.F. Hoban (Ed.). *The missing links in teacher education design: Developing a multi-linked conceptual framework.* Dordrecht: The Netherlands, pp 231-234.

Korthagen, F. (2010). "The relationship between theory and practice in teacher education." In. Baker, E., McGaw, B. & Peterson, P. (Eds.) (2010). *International Encyclopedia of Education.* Vol. 7. Oxford, Elsevier, pp 669-675.

Lampert, M. (2010). "Learning teaching in, from, and for Practice: What do we mean?" *Journal of Teacher Education* 61(1-2), pp 21-34.

Levine, T. (2010). "Tools for the Study and Design of Collaborative Teacher Learning. The Affordances of Different Conceptions of Teacher Community and Activity Theory." *Teacher Education Quarterly* 37(1), pp 109-130.

Pareja, N.N., Ormel, B.J.B., McKenney, S.E., Voogt, J.M. & Pieters J.M. (2014). "Linking Research and Practice Through Teachers Communities: A Place Where Formal and Practical Knowledge Meet? *European Journal of Teacher Education,* 37(2), pp 183-203.

Peña, N. (2013). "Lesson Study and Practical Thinking: A Case Study in Spain." *International Journal for Lesson and Learning Studies.* 2(2), pp 115-136.

Pérez Gómez, A. I. (2007). La naturaleza de las competencias básicas. *Cuadernos de Educación*, *1,* 1-31.

Pérez Gómez, A. I. (2009). ¿Competencias o pensamiento práctico? La construcción de los significados de representación y acción. En José Gimeno (comp.), *Educar por competencias ¿Qué hay de nuevo?*, (pp. 59-102). Madrid, Editorial Morata.

Pérez Gómez, A. I. (2010a) La naturaleza del conocimiento práctico y sus implicaciones en la formación de docentes. *Infancia y Aprendizaje, 33* (2), pp 171-179.
Pérez-Gómez, A.I. (2010b). *Aprender a enseñar en la práctica.* Barcelona, Graó.
Pérez-Gómez, A.I. (2012). *Educarse en la era digital.* Madrid, Morata
Pérez-Gómez, A.I.; Soto-Gómez, E. & Serván-Núñez, M.J. (2010). "Participatory Action Research and the reconstruction of teachers' practical thinking. Lesson Studies and core reflection. An experience in Spain. *Educational Action Research.* 18(1), pp 73-87.
Polanyi, M. & Prosch, H. (1975). *Meaning.* Chicago, University Chicago Press.
Savvidou, C. (2010). "Storytelling as dialogue: how teachers construct professional knowledge." *Teachers and teaching theory and practice,* 16(6), pp 649-664.
Schön, D. A. (1998). *El profesional reflexivo: cómo piensan los profesionales cuando actúan.* Barcelona, Paidós.
Taber, S. (2006). "Beyond Constructivism: The Progressive Research Programme into Learning Science. *Studies in Science Education*, 42, pp 125-184.
Tardif, M. (2004). *Los saberes del docente y su desarrollo profesional.* Madrid, Narcea.
Van Manen, M. (1995). *The tact of teaching: The meaning of pedagogical thoughtfulness.* Albany, NY: SUNY Press; London, Ont.: Althouse Press.
Wong, D. (2007). Beyond Control and Rationality: Dewey, Aesthetics, Motivation, and Educative Experiences. *Teachers College Record.*109 (1), pp 192-220.
Zanting, A., Verloop, N., Vermunt, J.D. & Van Driel, H. (1998). "Explicating Practical Knowledge: an extension of mentor teachers' roles", *European Journal of Teacher Education,* 21(1), pp 11-28.