Chapter 13
Learning from Research on Beginning Teachers

Beatrice Avalos

Introduction

The transition from teacher education into classroom teaching has been the subject of intense study in the last 25 years and an object of policy concerns, despite alerts on the particular situation of beginning teachers being raised in earlier times (Fuller & Bown, 1975; Huberman, 1989; Lacey, 1977; Lortie, 1975; Veenman, 1984; Waller, 1932). Evidence of the "reality shock" produced by having to face diverse and difficult situations in schools and classrooms, has been reviewed and conceptualised as problems or as concerns (Conway & Clark, 2003; Veenman, 1984; Watzke, 2007). Equally how teachers learn to consolidate professional practice and the factors that contribute to this learning, either by self-discovery or assistance from others, have been part of copious literature related to the process of beginning to teach, as evident in recent year reviews (Cherubini, 2009; Cooper & Stewart, 2009; Dempsey, Arthur-Kelly & Carty, 2009; Ingersoll & Strong, 2011; Orland-Barak, 2014; Schaeffer, Long & Clandinin, 2012; Silva, Rebelo, Mendes, & Candeias, 2011; Tynjälä & Heikkinnen, 2011).

In terms of international policy the situation and needs of beginning teachers were highlighted by the Organization for Economic Co-operation and Development (OECD) in its influential *Teachers Matter* policy document (OECD, 2005) which recommended the need for induction in this phase of a teacher's career. Although acknowledging the support that a number of educational systems were offering to their new teachers, the document noted that out of 24 countries surveyed, eight did not consider induction and another six left it to the initiative of each school. More

B. Avalos (✉)
Research Associate, Centre for Advanced Research in Education,
University of Chile, Santiago, Chile
e-mail: bavalos@terra.cl

recently the 2008 *Teaching and Learning International Survey* (TALIS) reported that, in countries such as Italy, Spain, Portugal, Ireland and Brazil, 20–60 % of new teachers had "appraisal and feedback from any source" (Jensen, Sandoval-Hernández, Knoll, & González, 2012, Figure 2.1, p. 43). The same results of low participation of new teachers in induction programmes are reported in the recent version of TALIS (OECD 2014).

Despite what seems still to be an insufficient recognition in country policies of the particular characteristics of entry into the teaching profession and the need for support, the existing body of research and experiences offers insight into how new teachers handle the demands of classroom teaching and school responsibilities, the role and forms of induction that may or not be appropriate to their needs, the interaction between what teachers learn in their teacher education programmes and what their schools and school systems expect when they begin to teach, the role of intellectual, emotional and social factors in this process, and the particularity of situations which may lead to "survival", "enduring commitment", or "walking out". This chapter seeks to review some of this research over the last 15 years with the following two main purposes:

1. Examine the available literature from 2001 onwards using a conceptual organizing framework derived from research and experience and anchored on the complexities in beginning teachers' practice.
2. Shed light on the diversity of teaching and systemic conditions that impinge on professional learning, and on the processes, both individual and collective, through which teachers become self-sufficient and competent.

The review is organised in the following sections: Conceptual organising framework and review procedures including a schematic description of sources, three main analytic-thematic sections and a concluding analysis about beginning teacher professional learning and the implications this has for teacher education and educational policy.

Conceptual Organising Framework and Review Procedures

Every new teacher contributes with specific personality traits, funds of knowledge, dispositions, beliefs and skills, which are partly the result of teacher education experiences and partly their somewhat tentative, but personal definitions of professional self or identity. What a teacher encounters when she or he begins to teach is a set of tasks to be performed, groups of students with varying characteristics and possibilities and particular school environments. Their work involves interacting with instruments expressed in curriculum documents and learning targets as well as participating in school communities and handling different patterns of interaction with colleagues, parents and authorities. The beginning teacher has prior knowledge of some of these conditions and demands, which were acquired during teacher education field experiences, but the range and combination of possibilities and restrictions actually encountered in the first formal employment setting, is certainly new. Added to these elements of interaction, are contractual conditions which for
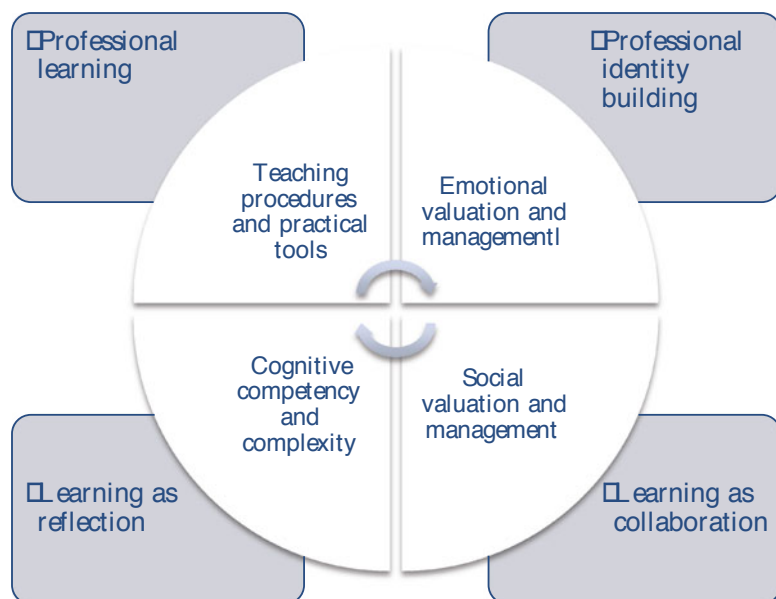
Fig. 13.1 Beginning teachers, professional learning and identity building (Source: Personal elaboration)

some new teachers may mean a full time job in a school of their choice, a full time job in the only school that offered work or part time teaching in more than one school.

The diversity of conditions, personal and external, and the demands of the job form a mesh, which is uniquely experienced or perceived by the teacher, although not necessarily fully reflected upon and understood. Whatever the form of each situation, every new teacher must engage in those activities demanded by his or her specific field of teaching and become part of the school context where this occurs, using cognitive capacities and practical tools, being emotionally involved and committed to the growth of others, and seeing him or herself as the bearer of a social mission (Dewey, 1990; Freire, 2000). The interplay of all these factors contributes to changing definitions of professional identity and self-efficacy perceptions along the life career and leads to the progressive consolidation of forms of teaching and of educating pupils considered to produce desirable learning results (Huberman, 1989). Understanding this process means recognising that the quality of teaching and learning is a social product that emerges and grows from collaborative work with colleagues within and across school contexts and is nourished by systematic reflection. Figure 13.1 attempts to illustrate the various components of what is an integrated process of learning development throughout a teacher's career, but which has its own particularities in the beginning stages of teaching.

The concepts and relationships illustrated in Fig. 13.1 will be used, for the purposes of this chapter, to organise and discuss the vast amount of research on beginning teachers produced in the past 15 years. These concepts respond to the author's views

of teacher development in terms of broad processes (identity building and learning) and more specific thematic elements having to do with teaching actions, emotions, social capacities and knowledge processing, all of which appear in the teacher related literature and specifically, as will be shown, in beginning teacher research.

Review Sources

The key criteria for the selection of sources was that they be published reports or reviews of research on beginning teachers, including reflective analysis or essays based on research, representing as much as possible different geographical areas. The period covered was 2001–2015. The main search instrument was the Scopus abstract and citation data-base which has gradually incorporated journals from different countries: Also consulted was the Scientific Electronic Library Online (SciELO), which contains journals from Latin America, Spain, Portugal and South Africa and has recently been incorporated into the Scopus data base. "Beginning teachers" was used as a key word for the search as it was broad enough to yield the maximum number of relevant references. Over the period there was an interesting growth in the number of research articles on beginning teachers, particularly from 2009 onwards as shown in Fig. 13.2.

Altogether, there were 463 articles identified of which 47.5 % were published in USA sources and/or by USA authors and 15.5 % in Australia or by Australian authors. There was a growing number of articles over the period from European
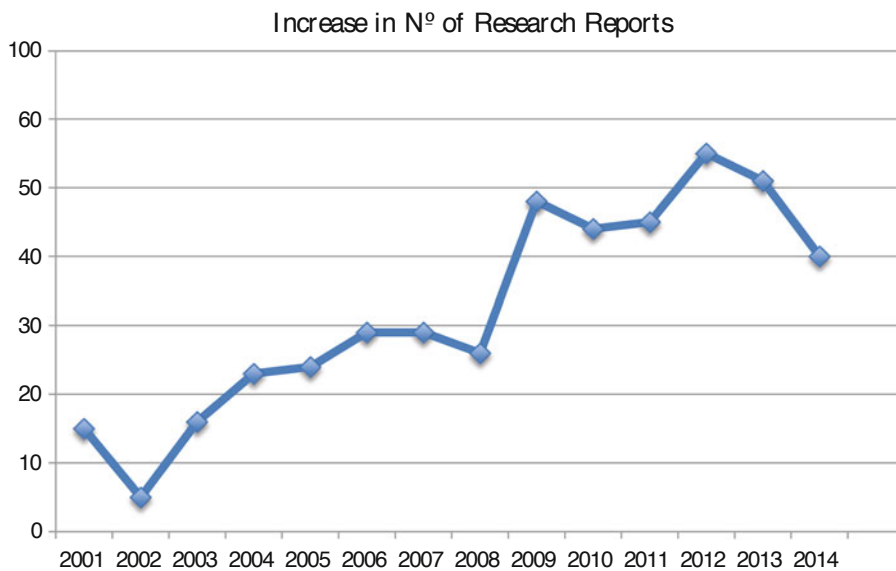

Fig. 13.2 Research on beginning teachers 2001–2014 (Number of published articles. Source: Scopus database)

Table 13.1 Main emphasis of examined research articles

Thematic area	N° of studies	%
1. Attrition/retention (factors affecting, resilience)	22	7.3
2. Beginning teacher assessment (instruments, processes)	4	1.3
3. Beliefs, attitudes, tensions, challenges, concerns	20	6.6
4. Classroom management experiences	5	1.7
5. Contextual factors (school micro-cultures/principals and macro policies)	15	5.0
6. Emotional factors, commitment, motivation	6	2.0
7. Induction (programme description, processes and effects)	73	24.3
8. Interpersonal competence (collaboration)	8	2.6
9. Mentoring (relationships, mentor qualities, problems)	20	6.6
10. Particular populations and teaching situations (racial, male teachers, multi-ethnicity, special needs, children under care, out-of-field and alternatively certified teachers)	15	5.0
11. Professional identity development	8	2.7
12. Professional learning (reflection, cognitive skills, leadership development)	29	9.6
13. Self-efficacy development	10	3.3
14. Subject-matter teaching/learning (cognitive, affective, social, practical aspects)	49	16.3
15. Technology and professional development	7	2.3
16. Teacher education effects	10	3.3
Total	301	100

countries (22 %) covering towards the end of the period 10–12 countries a year, a change from very small numbers at the beginning. From the rest of the world there were 23 articles from Canada, 12 articles from Latin America (Argentina, Brazil, Chile and México), 9 from New Zealand and scattered numbers from Singapore, Malaysia, Israel, Hong Kong, Japan, Shanghai, Taiwan, as well as Ghana, Nigeria and South Africa from Africa.

While the articles examined centred on a wide variety of specific issues and processes, it was possible to detect on the basis of the abstract descriptions 16 main thematic approaches covered in just over 300 articles, which are presented in Table 13.1.

As observed in Table 13.1, a third of the research articles published in the period focused on induction and mentoring (30.9 %) followed by those covering specific subject teaching and related capacities (mostly science, mathematics and language). However, there were another 54 research articles that centred on various combinations of these themes. For example, while a focus on induction and mentoring was a logical combination, these themes also included reference to technology (as in cases of online mentoring), effect of school micro-cultures and the obvious references to theoretical aspects of professional learning. Technology was also associated in several articles to professional learning themes, to identity and to its uses in interpersonal or collegial interactions. In analysing causes or factors involved

in rates of new teacher attrition, several research articles linked these to emotional factors, identity conflicts, effects of external policies and school micro-cultures. The studies on "particular populations and teaching situations" provide an interesting focus on teachers who have to teach "out of their field" subjects, were prepared in diverse forms of "alternative certification" programmes, "males" teaching small children, teachers who only find casual employment. They also include teaching particular populations in terms of racial composition or children in foster care.

In terms of the preferred research approaches as gleaned from 278 abstracts that provided such information 65 % were clearly qualitative studies (case studies, action research, focus groups) using a diversity of data collection instruments such as narratives and stories, interviews and observation, electronic journal analysis and various reflection means such as metaphors. Another 22 % could be classified as predominantly quantitative (surveys, cohorts, panel, experimental). Finally, 13 % of the abstracts reviewed declared the use of mixed-methods approaches.

Many of the qualitative approach abstracts examined reported the use of Case Study designs (58) involving one or more individuals (usually not more than five in this category). There were also 33 studies focusing on what are known as trajectory, follow-up or longitudinal approaches involving the study of a case(s) during at least a year, but also from teacher education into 1 or 2 years of teaching. Finally, there were 11 reported studies that involved the analysis of existing databases in order to examine trajectories and cohorts, often with a focus on retention/attrition levels.

For the purposes of this review, however, not all the research areas noted in Table 13.1 were examined in their own right. For example, many of the articles on mentoring and induction were specific to its processes and would need a longer review to be handled properly, as also studies that looked at rates of attrition among beginning teachers and its causes. This is not to say that studies that referred to these themes as part of broader beginning teacher processes were excluded.

Subject-Matter Teaching, Cognitive Processing and Concerns for Relevance and Student Learning

In what follows, and in line with the concepts presented in Fig. 13.1, three thematic areas related to beginning teacher professional learning and identity building and to the specific tasks of teaching and student learning and the cognitive, emotional and social aspects involved are discussed on the basis of selected research articles: (a) subject-matter teaching, cognitive processing and concerns for relevance and student learning; (b) teaching and school communities: social and emotional tensions and development; and (c) reconfiguration of professional learning from teacher education into classroom teaching. For each theme, besides an overview of the relevant themes and issues in the studies, a group is selected for closer discussion for reasons that will be explained in the introduction to the section.

Once the new teacher has been given responsibility for one or more classes per- forming its main tasks involves concurrent actions accompanied by thinking about,

Table 13.2 Main curricular subjects covered by research in the period 2001–2015

	N°	%
Art	3	2.4
Language (mother tongue)	18	14.5
Language (foreign or second language)	11	8.9
Mathematics	18	14.5
Mathematics & science	3	2.4
Music	6	4.8
Physical education	4	3.2
Science	47	37.9
Social studies (history, geography, social justice)	5	4.0
Special education	9	7.3
Total	124	100

Source: Scopus abstracts, 2001–2015

seeing and interpreting the subject matter in relation to what is appropriate for pupils and their learning. While there will be a curriculum frame or a specific syllabus to consider, and ways of teaching such a curriculum of which some were learnt and practised during teacher education, every teacher needs to explore what is best to use in the particular situation, trying out diverse forms and being alert to pupils' signals and responses (Wang & Paine, 2003). A generalist primary teacher experiences different degrees of competence and confidence in teaching the range of subjects required and the classes or age groups under his or her responsibility (Smith, 2007). The doubts and uncertainties of a specialist teacher may have to do with the nature of the curriculum frame that must be enacted and with how his or her specialised knowledge base fits in with its demands and those of the school system (Lovett & Dave, 2009; Serra, Krichesky, & Merodo,2009). Uncertainties may include being able to reach students who have difficulty in understanding and challenging those who are capable of deeper learning or who simply do not care about the content being taught (Choy, Chong, Wong, & Wong, 2011).

To a large extent the processes related to subject matter teaching have been conceptualised as "subject content knowledge" (SCK) and "pedagogic content knowledge" (PCK), and have been linked to beliefs about the subject, its teaching and about those who learn its contents. Out of the total 301 pieces of research over the review period, 124 specifically dealt with main subject area demands and the ways in which beginning teachers face them (see Table 13.2).

As Table 13.2 illustrates, science is by far the area most studied in terms of how beginning teachers perform or manage their teaching responsibilities, followed by mathematics and language (Turner, 2012; Hough, 2007; Justi & van Driel, 2006; Farrell, 2006; Roehrig & Luft, 2004; Luft, Roehrig & Patterson, 2003; Mulholland & Wallace, 2003; Mullholland & Wallace, 2001; Ensor, 2001). This emphasis may be a consequence of the emphasis given to these subjects in policies as well as in national and international assessment systems.

The approaches and findings of a group of these studies are discussed below under the following themes: (a) beginning teacher relationships with the curriculum; (b) connecting subject-knowledge to student understanding; and (c) cognitive processing and thinking about subject teaching. Two or three articles were selected to illustrate each theme on the basis of their specific focus, conceptual originality and complexity as well as representing some geographical diversity.

Teaching to or with the Curriculum

There are different ways in which teachers interact with the curriculum, depending on whether they have to work with mandated curriculum or interpret less structured curriculum frames. But, in essence, they must take the curriculum and convert it into teaching plans and activities in line with their knowledge and beliefs about what are its key elements, about what are their students' needs and taking into account their own subject matter confidence level. The links between curriculum interpretation and students' perceived needs are mediated by forms of instruction, which are subject-specific but also coloured by more directive or constructivist forms of teaching. In what follows, three research pieces carried out in different geographical contexts and curricular policy structures serve to illustrate the relationship of teachers with curriculum frames, both in their mode of interpreting them as well as in their teaching approaches.

The first of the studies by Valencia, Place, and Martin (2006) in the United States illustrates the effect of different curricular policy contexts over teachers who also are different in their way of interpreting demands, levels of subject confidence and teaching approaches. The case study reported followed four language arts teachers from teacher education through their first 3 years of teaching in schools and centred on the teaching of primary level reading. The teachers were studied in their schools and classrooms through various means: observations; individual and group interviews with the teachers and with school and district personnel; as well as document analysis. The curriculum conditions under which they worked varied from tightly-prescribed mandated curriculum to "build your own" curriculum approaches, from having to teach on the basis of highly structured scripts and assessment forms to having a wide variety of sources from which to decide on teaching activities such as readers, anthology and teacher developed materials. Each teacher taught a different grade from 1 to 4 to student populations that were different from school to school in terms of racial composition (20–75 % blacks), socio-economic level and proportion of those reading at or above the grade level (39–78 %). The teacher with the greatest degree of curricular prescription also taught the students with lower reading achievement and who were mostly black. All teachers shared the purpose of carrying out a complete reading programme and were concerned primarily with how to teach it and meet their students' needs.

Given the differences in curricular prescriptions, not surprisingly, the four teachers studied by Valencia et al. (2006) were also diverse in their teaching of reading

approaches. Those who had less freedom to alter materials relied greatly on them and tended to follow the indicated procedures. They also showed a limited range of teaching repertoire. But it was not simply the degree of prescription of the curriculum in use that marked the differences among the teachers studied. The teacher's pedagogical orientation, subject knowledge competency and understanding of the reading materials and their uses (partly carried over from their teacher education) also impacted on the degrees of confidence and freedom they felt to experiment with different approaches.

Teachers in contexts with a greater degree of curricular freedom were able to work towards developing a deeper understanding of their own reading instruction practices, while teachers with a lesser degree of curricular freedom remained more superficial in their approach and more procedural. Their pedagogic orientations were also influential in how they dealt with the curriculum, but did not shift much in kind over time as a result of their experiences, showing "shifts in degree rather than kind". Among its important conclusions, the authors contend that in whatever way, more or less mandated curriculum materials do influence beginning teachers' practice (Valencia et al., 2006).

Almost the reverse of the Valencia et al. (2006) study is an in-depth case study in the very different context of China (Wang & Payne, 2003). The policy setting of the study had two major elements: a "contrived curriculum" on the one hand and the practice of teacher investigative groups involving collaborative planning and reflection, coupled with the public delivery of a lesson. The "contrived curriculum" issued by the Chinese educational authorities consists of a teaching and learning framework, a textbook and a teachers' manual which teachers in China must use.

Although the study was based on interviews with 26 beginning teachers on the links between the contrived curriculum, learning in research groups and their teaching capacity as demonstrated through the public lecture delivery, the article reviewed centred on one teacher's public lesson delivery of a particular mathematical concept and examined how the prescriptive nature of the curriculum was enacted in that particular lesson.

The conclusion, after analysis, was that although the teacher maintained her focus on the curriculum documents, she did not follow its suggestions exactly nor use the provided example as indicated. She also engaged her students in practice questions and activities that were other than those suggested. The authors attributed these variations to the teacher's confidence in her subject knowledge and pedagogy increased as a result of the weekly lesson preparation and teacher research group meetings in which she and other teachers participated. As described by Wang and Payne (2003) these activities are similar to the well-known "lesson study" practice of the Japanese education system (Cf. Lewis, Perry & Murata, 2006), which also involves collaborative preparation and feedback after observation of lessons taught by participants.

The authors noted the need to moderate conclusions about there being a necessary lessening of professionalism resulting from having to teach a structured mandated curriculum (as shown in Valencia et al., 2006). In this case the entire policy context -the contrived curriculum and collaboration/feedback opportunities – allowed room

for degrees of freedom in deciding about curriculum and teaching practices that rested on the teachers' self-confidence as far as subject matter and pedagogy was concerned. In this respect, Wang and Paine (2003) called for more research on how contrived curriculum is implemented in different situations and its effect on the quality of subject teaching.

A third case of interaction between centrally mandated curriculum and beginning teacher practices is illustrated in a study of Turkish teachers (Haser, 2010). The main thrust of this study, however, is not so much on the centralised nature of the curriculum but on the lack of teacher support materials and especially of support via some form of mentorship for beginning teachers.

Haser (2010) interviewed middle-school mathematics teachers in their first and fourth/fifth year of teaching, noting changes in their practices mostly due to growth in experience. Similar to Valencia et al.'s (2006) study the Turkish teachers began to teach in different types of schools, although most were rural and had more difficult to teach student populations (as perceived by the teachers in the studies). In their eyes, the curriculum had not been fixed with "these kinds of students' in mind" and the teachers found it difficult to teach through the curriculum. They tended to attribute their teaching problems to their students' perceived levels of prior knowledge and to the students' former mathematics teachers. The number of national examinations (6th, 7th and 8th grade) also exacerbated the pressures to which these teachers needed to respond.

The difficulties persisted 4 years after although moderated by a more settled perception that "not all groups can achieve at all levels" (p. 298). Interestingly, in their interviews the teachers did not refer to possible personal knowledge difficulties in teaching certain mathematical concepts although conversely they attributed greater ownership to those concepts about which they felt more confident. Haser's (2010) analysis attributed the practices and views expressed by the teachers to a mix of prescription in the national curriculum (same content and results expected of all students), the mixed quality in prior knowledge levels of their students and lack of collegial or mentorship support. But Haser also suggested possible inadequacies in teacher preparation in terms of learning to deal with differences in students' prior knowledge and with their cultural differences (rurality in this case), but also in the quality of mathematics content knowledge preparation.

Seen together, the three studies above highlight the differences in how teachers engage in their classroom activities in systems with greater or lesser "mandated" curricular frames. Both the studies of Valencia et al. (2006) and Haser (2010), in different national contexts, highlight the restrictive nature of highly prescribed curricula over how teachers work with materials and their degree of confidence in being able to innovate to suit students' learning needs.

In Haser's (2010) study the restriction also extended to the lack of appropriate teaching materials making teaching even more difficult, especially in its relation to difficult to teach school populations such as rural settings. Curriculum restriction is also the case in the third study (Wang & Payne, 2003) but a different factor intervenes which moderates its effect and which is provided by the practice of collaboration in preparing and implementing a "public lesson" in that it increases

the possibility of adjusting the curriculum or deviating from its prescriptions in order to suit learning needs. Simply put, these studies highlight that contrived curriculum has a restricting effect over teaching quality among beginning teachers but that this may be moderated if there are opportunities for collaboration and feedback and if the new teacher has been well prepared in both content and pedagogical knowledge.

Relating Subject Knowledge to Student Understanding

The process of teaching for understanding – a repeated concern of new teachers – may be examined from different standpoints associated with nature and conceptions of the subject as well as from approaches derived from learning theory and specific evidence about how to teach it. The cases of science and foreign language teaching are used here to illustrate the teaching implications derived from approaches closer to "inquiry" (science) and approaches closer to "performance" (foreign languages). The two selected studies were carried out with teachers in the United States.

Roehrig and Luft (2004) examined how 14 secondary science teachers understood and enacted the teaching of inquiry based science lessons in the context of an induction seminar in which they had been participants. Inquiry based lessons were defined in the words of the National Science Education Standards of the USA as "the diverse ways in which scientists study the natural world and propose explanations based on evidence derived from their work" (Roehrig & Luft, p. 3). For the purposes of the study attention was focused on the constraints experienced in the teaching of inquiry based science of the 14 teachers who were in their first, second or third year of teaching, considering what they knew, believed and practised in relation to this approach. To this end they used beginning and end-of-the-year interviews on teaching and teacher beliefs as well as open-ended questionnaires for views about the nature of science. The teachers' practice was also observed.

The key findings of the study allowed teachers to be described according to three different teaching orientations: "inquiry"; "process-oriented"; and, "traditional". In relation to inquiry teaching there was no specific set of factors that influenced primarily whether teachers would use this approach, although there were interactions and combinations of situations that influenced the possibility of its use. For example, students' ability and school context could deter the implementation of science inquiry instruction despite the teacher's convictions and knowledge about the approach. Also, while lack of adequate content knowledge might have been a factor in not using the inquiry science approach, in others this might have resulted from a lack of suitable pedagogy. Thus, although there was indication of that which was basically needed to teach in line with scientific-inquiry such as solid content knowledge, student-centred teaching beliefs and a "contemporary" view of science, the authors concluded that none of these on their own were a solid contributing factor. All three components interacted with other factors derived from general teaching orientations and prior teacher preparation in science knowledge or pedagogy.

From the perspective of foreign language teaching, Watzke (2007) reported on a study that followed a group of teachers in their first 2 years of practice who taught Spanish, French and German. The focus of the study was on changes in pedagogical content knowledge (Shulman, 1987) overtime and on the development of teacher crucial concerns related to student learning and personal wellbeing. To this end, the research sought to identify core categories related to knowledge, instruction and learning expressed by beginning foreign language teachers, and how these changed over the first 2 years of teaching, as reflected in electronic journal entries of the participant teachers, interviews and focus groups. After careful qualitative analysis of the data, Watzke (2007) was able to conceptualise four categories considered to be crucial to the participants' teaching: *prior knowledge as framing instructional decisions*, *attitudes towards teacher control in the classroom*, *instructional goals for daily lessons* and *considerations for responding to student affect (p. 69)*, all of which were consistent across the different teaching contexts. However, in the analysis of how these categories played in the classroom teaching of foreign languages and over time, Watzke (2007) observed a clear process of moving from the situation of being still "learners" to one of being more confidently "teachers".

Through Waztke's (2007) study, progress was noted as evident in the initial use of more traditional forms of teaching followed by a sort of gradual recalling or re-experimenting with the student-centred learning to which participants were exposed during teacher education and which was in line with the communicative approach to foreign language teaching. This was evident in the observable increase in language teaching with an emphasis on task performance and communication as well as student-centred activities in which the teachers progressively engaged. It was also accompanied by a gradual control over classroom management and handling of its diverse emotional implications. Watzke suggested that in order to better understand how beginning foreign language teachers moved to the full use of a communicative approach in language teaching, the issue to be examined was "not where teachers are, but where they are going" (p. 74).

The two studies (noted above) centred on quite different subjects (science and language arts) point to the interaction of factors that impact on the degree to which teachers enact a subject's particular teaching approach, be it inquiry-based or performative: knowledge-base, attitude and responsiveness to students as well as a suitable pedagogy. Added to this the studies highlight the interaction between teacher education knowledge and growing experience, which as indicated by Watzke's (2007) study, may not necessarily be linear.

Thinking About Subject Teaching and Cognitive Processing Uncertainties

The thinking behind how teachers plan and enact the teaching of their subject in the light of their students' needs has for a long time been a subject of research (Clarke & Peterson, 1986). More recently teachers' thinking has been examined through case studies that follow teachers from teacher education to their first years of teaching (Dumitriu, Timofti & Dumitriu, 2011, Haggarty & Postlethwaite, 2012). Such research is able to be illustrated through three examples from different geographical locations. Two looked at teacher thinking in relation to the subjects of English (Ellis, 2009) and science (So & Watkins, 2005) and the third was centred generically on the complexity of thinking expressed in the ability to deal with uncertain situations in teaching (Bullough, Young, Hall, Draper, & Smith, 2008).

Ellis (2009) studied three English graduates during their teacher education year in England in their Post-graduate Certificate of Education (PGCE), and through their first year of teaching, with the purpose of examining how, over time, these teachers processed their knowledge and understanding of English as a teaching subject. Besides interviews, Ellis used narratives about their teaching experiences and drawings that depicted their understanding of the content areas in English as a teaching subject and of the relationships between them. His interest lay in unveiling the teachers' conception of English as a teaching subject and changes over time, including the concept of themselves as teachers. He was also interested in their pedagogic orientations, that is, in how they envisioned their teaching approaches either as being more directive or more constructivist – assuming that they would be reflected in the teaching methods used with different groups of students.

Among Ellis (2009) central conclusions about the teachers studied was that they had personal stance regarding the teaching of the subject. Their conceptions of English as a curricular subject were personal in the sense of being influenced by their background or history as in former school experiences, and by their views on their selves as educators. This epistemological stance was changed or modified over time in the light of the evolving nature of their teaching experiences. Changes were observed in how teachers reflected through the drawings their understandings of the interrelationships among content areas, and in how they were different in each case, indicating also a different epistemological stance. Thus, on the one hand, one teacher developed a more socially critical stance that impacted her thinking about that which matters or is important in the teaching of English. On the other hand, the second teacher's stance about English teaching was closer to views expressed in the English National Curriculum standards. Interestingly, the third teacher's views illustrated a move towards affirming the communicative approach in language and literature teaching. The same was not the case, however, about whether their pedagogical orientation supported "objectivist" or "constructivist" teaching approaches. There seemed to be no clear demarcation between holding these positions, and instead there was increasing evidence of tensions between them.

Finally, looking into the role played by teacher education and as to how the participants' growing experience impacted their thinking of English as a teaching

subject, Ellis (2009) concluded that both teacher education and experience interacted with each other in a non-linear fashion. By this he meant that skills acquired in teacher education may not be specifically observable in classroom teaching as they may have been modified or replaced by the new teacher learning resulting from having to handle unexpected or diverse contextual situations.

Also focused on the transition from a 2-year teacher education programme to first year classroom teaching, So and Watkins (2005) studied changes in the thinking about science teaching, of 26 primary teachers in Hong Kong, within a constructivist frame of reference. This study utilised as research tools interviews, observations, concept maps and post-observation reflective notes written by the teachers while they were in teacher education. While most of the analysis was qualitative, the authors also used statistical techniques to transform the data into quantifiable indicators in order to examine the fluctuations over time in the teachers' thinking.

From the early interviews So and Watkins (2005) detected four types of epistemological positions about teaching or stances (see Ellis, 2009 above), which they described as "learner-centred constructivist, experimental-inductive, teacher exposition and teacher transmission". These positions were not found to be pure in that they appeared in pairs with one being predominant and the other taking a secondary position. In the course of the period studied from teacher education into their first year of teaching all teachers moved towards a more constructivist or learner-centred position, either predominant or secondary. As far as complexity in thinking, there was no clear evidence of linear development as the concept maps the teachers drew during their teacher education programmes showed more complexity in thinking for planning than was the case when they were actually teaching in their first year. This could have been due to pressures on time resulting from the many new demands in their school contexts and the lack of specific help to cope (So & Watkins, 2005). Importantly, their teaching practices which during their pre-service phase had moved to becoming largely learner-centred, continued to improve over time and approximate that which the authors described as constructivist teaching. Beginning teachers who had used these practices well during teacher education continued to do so in their first year of teaching.

The study also examined reflective practices. Reflective practices were conceptualised as mostly centred on "confronting" or diagnosing their teaching and its needs or mostly centred on "re-constructing", that is, modifying such practices. In that respect the authors observed that the reflective practices in which the teachers engaged did not change substantially from teacher education to classroom teaching. For the most part they remained at the confrontation or diagnostic phase. Only a few teachers engaged in "reconstructing" reflection.

Looking at the evidence provided by all the data sources, So and Watkins (2005) finally examined the degree of coherence in the teachers' way of thinking about science teaching over the study period. On the whole, teachers exhibited coherence between their views about teaching and constructivist practices, but noted a slight drop in coherence as they began teaching. Taken together, So and Watkins observed

that the evolution of thinking on the part of teachers was not linear in every respect, especially in thinking complexity and reflective orientation.

The lack of clear evidence of a linear development from lesser to better was also found in a longitudinal study in England of primary science teachers moving from teacher education into schools (Smith, 2007). Although teachers in this study widened their scientific knowledge during their first year of teaching there was no real increase in the depth of their subject knowledge and practices. Smith considered that the result could well have been connected to identity conflicts related to the generalist focus of primary teachers' work and having to cover the teaching of several subjects, all of which may not leave room for deeper subject-related thinking and practice.

To some extent inconsistencies found between learning approaches at pre-service preparation level and approaches and practices when beginning to teach can be traced to the sheer number of new obligations faced by teachers as well as to the unclear, or not obviously resolvable, issues that arise in their practice. In order to explain the thinking of beginning teachers in dealing with uncertainties, Bullough et al. (2008) explored the concept of "cognitive complexity" using a reasoning test about current issues developed by Kitchener, King and DeLuca, 2006 (in Bullough et al., 2008).

Bullough et al.'s (2008) study involved nine teachers who graduated from one teacher education institution and to whom the test was administered. On the basis of the test results, the researchers distributed the teachers across two groups depending on how predominantly formal or predominantly reflective their reasoning was about situations not susceptible to being fully or completely defined or resolved with certainty.

After the participants began teaching in schools, the two groups of teachers were asked to send an e-mail every 2–3 weeks describing high and low moments in their teaching. Based on their reasoning for selecting the low and high moments as well as on reports of interviews with their assigned mentors, Bullough et al. (2008) were able to detect differences in how the two groups described their high and low moments of teaching.

The teachers with higher cognitive complexity capacities, tended to be more reflective and concerned about the different patterns of learning observed in their classrooms rather than about "learning in general". They noted aspects of the curriculum that needed improvement and rather than blame students tended to look to their own role in situations that interfered with learning, i.e., they accepted personal responsibility for dealing with identified learning issues and problems. In contrast, those teachers with lower cognitive complexity tended to explain or attribute the noted problems to factors outside of the learning processes such as relationships with parents or the degree to which they were fitting in and doing what was expected from them. They also sought much more help from their mentors in trying to handle the issues (Bullough et al., 2008).

These two groups differed in the use of tools to handle their teaching issues, in the degree to which they examined their use and results and in the degree of self-assessment and flexibility of planning. Despite these findings, the authors did not

suggest that there was a kind of determinism that caused teachers to be higher or lower in their thinking complexity, but more so highlighted instead the need for teacher education and mentoring to engage in more proactive development of higher and more complex reflective activities among future and beginning teachers.

The non-linear character of cognitive development and teaching practices seems to be a linking thread in the three studies (reviewed above), an observation that derives from the longitudinal character of all of them. Although, the key concepts in each study are different, in Ellis (2009) study the focus was on the personal and epistemological stance regarding the teaching of English as a subject and how it developed differently in each case as a result of experience. This development was not equally observable in relation to the teachers' pedagogic orientation, and showed a non-linear interaction between teacher education and experience in relation to their conception about English teaching. So and Watkins (2005) found that although their participating teachers developed some coherence between their views about teaching and the constructivist science teaching orientation of their teacher education preparation, the coherence diminished slightly as they began to teach as did their thinking complexity and reflective orientation. Bullough et al.'s (2008) study, in turn, provided some evidence of why there may be a lack of continued and growing effect of capacities acquired in teacher education once teachers begin to teach. Overall, the degree of cognitive complexity used to manage teaching situations that are not clearly definable, is shown to be an important factor and teachable during initial teacher education as well as developed through appropriate mentorship experiences.

All in all, these studies highlight a differential mode of moving from teacher education into schools illustrated by how the knowledge and pedagogical stances of teachers interact with their new experiences, which to be maintained or enhanced, require a more sophisticated capacity of reflective analysis.

Teacher and School Communities Social and Emotional Tensions and Development

Studies that have inquired into teachers' motivations for selecting the profession have consistently reported that one of the key factors is a desire to contribute to society, not just through the education of young people but also through the personal position as an actor for social change (Watt et al., 2012). In this respect, it is not uncommon for future teachers to select teacher education as an option prompted by previous experience of a social nature such as activities that involve children or young people or contributing in general to social welfare. However, the social side of teaching is more than just an ideal that orients teachers' lives. It is embedded in the nature of work, which is anchored in turn on social interaction with students, with other teachers and with parents. The way in which these social relations are experienced or lived by teachers carries emotional connotations involving feelings

of affection or rejection, enthusiasm or depression, commitment despite difficulties and constraints or laissez-faire feelings and detachment (Gallant, 2013; Intrator, 2006; Ria, Saury, Thereau, & Durand, 2003).

The social situations which beginning teachers encounter in their first employment(s) have often been described as a key factor as to whether or not they will pursue their profession with growing engagement despite its complexities, or whether they will move along half-heartedly until they decide that it is not for them and therefore leave (Jones & Youngs, 2012).

The encounter with the social environment of the school, including the broader policy environment in which it is located, has been the subject of research in many national contexts (Hargreaves et al., 2007; Liu & Ramsey, 2008; McKenzie, Kos et al., 2008). The research illustrates the variety of forms that these encounters take, which may involve compliance or resistance to school accepted practices or to external policies, but also engagement in innovative approaches to teacher collaboration. In other words, these encounters may act as positive or negative experiences that affect how a new teacher settles into a school environment, but also may contribute to his or her continued professional learning.

The fact that the educational results of a particular group of students are seldom the result of the individual work of one teacher, but rather of the community of those who form part of an educational institution points also to the importance of teacher collaboration and their co-construction of improved educational processes. The extent to which such collaboration forms part of the continued professional development of a beginning teacher is also a matter of importance. The next sections examine some of the research that covers both how teachers encounter and negotiate the social environment of places in which they work (classrooms, schools), its effect on their self-efficacy and wellbeing, as well as forms of working together and how these assist (or not) in beginning teacher professional learning.

The Work Environment

The combined effect of different dimensions of a school's organisation and culture over how new teachers handle the web of relationships and demands of their school environment has been a subject of study since at least the late 1960s (Blumer, 1969 in Cherubini, 2009; Hargreaves, 1993; Lacey, 1995; Kardos, 2003, 2005; Huntley, 2008), and followed more recently with research on the transition from teacher education into the school workplace (Tynjälä & Heikkinen, 2011).

In various studies schools have been described in terms of their "micro-politics" (Ball, 1987; Kardos, 2005) or the power interplay that occurs among the key actors of school life such as principals and teachers and their relationship with the outside demands of the school systems. These processes in turn are examined from the standpoint of how they are lived by new teachers and the degree to which they develop "micro-political literacy" or the understanding needed to deal with them (Kelchtermans & Ballet, 2002a, 2002b; Curry, Jaxon, Russell, Callahan, & Bicais,

2008). Equally, the "spaces" of school life such as the staffrooms where teachers spend much of their non-teaching time are also an object of research (Christensen, 2013; Lisahunter, Tinning, Flanagan,, & Macdonald 2011), as also the conflicts generated by the socio-cultural characteristics of students versus those of teachers (Consuegra, Engels & Struyve, 2014).

The organisational structure and the relationships in the school environment delimit the extent to which new teachers are able to respond to both to the institutional and education system's expectations and policies and see themselves as actors with a say in what takes place. From this stand point they interpret intellectually and emotionally the quality and effectiveness of their work and react in diverse ways to how the schools function.

The three pieces of research that are synthesised below were selected because they serve to illustrate in three different national settings and through different lenses and research approaches, how new teachers interact with their school orientation and culture. Thus the studies examine the effect of the school's goal orientation on new teachers' perceptions of capacity and their feelings of inadequacy (Devos, Dupriez, & Paquay, 2012), the manner in which new teachers prepared in a reform-oriented teacher education programme interact with their school cultures (McGinnis, Parker & Graeber, 2004) and the enhancement of micro-political literacy in different school cultures as result of participating in collaborative inquiry groups (Curry et al., 2008).

Devos et al. (2012) report on two investigations conducted in a Belgian (Flemish speaking) school setting. The studies used multiple regression analysis to examine questionnaire responses by 110 teachers with 1 year of experience (first study) and 185 with 3 years (second study), all at primary or middle schools. The focus of both studies was on how teachers perceived the school cultures and the mentorship opportunities provided to deal with them. The key constructs underlying both studies referred to the school's goal orientation as an indicator of culture and the perceived teacher self-efficacy and feelings of depression as indicators of teacher reaction to the specificities of their school's culture.

Following achievement-goal theory (Kapplan et al., 2002; Marsh et al., 2003, cited in Devos et al., 2012) the school's goal orientation, or expectations about that which is considered as work "well done", was conceptualised as having either a "mastery" or "performance-goal" structure. The "mastery" approach highlighted the individual's push to increase or move beyond past performance while the "performance-goal" orientation emphasised overt demonstration of competency or avoidance of incompetency.

Seen from the perspective of a school's goal orientation the mastery approach would support freedom to experiment and assess its results in terms of broad educational goals, while the performance approach would expect the school to meet external expectations as demanded by the school's system of standards. The concept of self-efficacy developed by Bandura (1997) and for beginning teachers by Hoy and Spero (2005) is used to indicate a sense of being "able to" on the part of teachers. Conversely, negative emotions represented as "feelings of depression"

produced by social and environmental constraints were taken to be predictors of dissatisfaction with the school's goal orientation or culture.

The first study reported by Devos et al. (2012) was based on a questionnaire that included school culture variables such as the principal's practices, frequency of teacher collaboration, mastery or performance goal structure, as well as indications of difficulties, feelings of depression and perceptions of self-efficacy of the beginning teachers questioned. The key finding was that the goal structure of the school (mastery or performance-oriented) was a statistically significant predictor of teacher perceptions of self-efficacy and of feelings of depression. In schools with a mastery-oriented culture new teachers expressed more positive self-efficacy perceptions while feelings of depression prevailed among teachers in schools with a performance-oriented culture.

The second study looked at beginning teachers' mentoring opportunities and follow-up meetings with the school principal and how these related to perceived self-efficacy and feelings of depression. In this study, both the reflective and feedback dimensions of mentoring and the quality of follow-up meetings with the principal were significantly related to positive perceptions of self-efficacy of the new teachers surveyed. In turn, these processes were unrelated to feelings of depression. The authors of the study provided an interesting discussion about the implications of these results for further research and policy and noted that, of itself, mentoring quality or induction did not necessarily predict new teacher wellbeing and self-efficacy perceptions unless it occurred in a school which had a mastery orientation goal.

Using a socio-cultural perspective, McGinnis et al. (2004) examined the relationship between the specific orientation of a mathematics and science teacher programme in the United States defined as "inquiry-oriented and standards-guided" and the capacity of its teacher graduates to enact that orientation in their practices and in interaction with different school cultures. The thrust of the programme was to prepare teachers who felt confident about their subject knowledge, could use technology, make connections between the disciplines and challenge students from diverse backgrounds. The research was centred around two main questions related to the enacting and reflective capacity of the teachers and to the "affordances" or "constraints" experienced in using the reform-based instruction in which they had been prepared.

The researchers followed five teachers over 2 years who were located in different types of schools and taught primary or middle-level science and mathematics. They interviewed the participants four times each year, held focus groups twice a year, analysed video-taped lessons by the teacher participants and their students' reflections as well carried out informal classroom observations. These rich sources of data benefitted also from data collection during their undergraduate teacher preparation. To analyse the data the researchers used the "inner" perspective of the teachers' own accounts and reflections and the "outer" perspective of the researchers provided by the analysis of all the sources of data represented in vignettes for each teacher.

The findings were extensive as it involved noting differences among teachers and schools. However, on the whole the study offered exemplars as to how each teacher enacted their teaching, what their preferred approaches were, and what they used from their initial teacher preparation learning to achieve expected results. The report also provided evidence of perceived affordances and constraints on the part of the teachers. The affordances reported were different for each teacher, but not so the constraints – although variable depending on the school culture. The summary of such constraints (below) in the words of McGinnis et al. (2004) illustrate common experiences of new teachers in many contexts and with different intensity ranging from availability of resources, and influence of their teacher colleagues to the clash between having or wanting to do "different" while having to respond to external factors such as prescribed curriculum and testing:

> The number of mathematics objectives to meet; the shortage and availability of computer equipment, the diverse level of student abilities; the science kits' prescribed curriculum and schedule; the prescribed science and mathematics curricula; the districts ongoing student testing of instructional outcomes; the frequent instructional interruptions; the number and extent of standardized student testing; the more experienced teachers' expectation that the beginning teacher would become less active and less innovative with time; and the suspicion of parents to new assessment ideas. (McGinnis et al., 2004, p. 735)

Some of the above constraints correspond to the categories described by Kelchtermans and Ballet (2002b) as forming part of the school micro-culture: material, organizational functioning, socio-professional relationships, cultural ideological orientations and self-interest.

Handling and interpreting the micro-political manifestations in school cultures constitutes an important portion of new teachers' social learning. Although defined as micro-political literacy (Kelchtermans & Ballet, 2002b), this naturally occurring process is not always reflected upon without the mediation of an intentional effort to produce such reflection. Along these lines, Curry et al. (2008) described an induction programme in the United States that allowed new teachers to become aware of situations conflicting with their personal professional interests and to develop capacity (micro-political literacy) to deal with them. On the basis of five school-based inquiry projects and intra-group discussions of 25 teachers, the researchers were able to highlight micro-political issues and how the groups discussed and dealt with them. The data sources for the research were based on the inquiry projects of five teachers and included qualitative analysis of their group meeting transcripts, complemented with individual and focus group interviews as well as documents collected during the time of the study.

The interactions and mutual assistance in interpreting the situations either by validating, or challenging interpretations, appeared to prove in itself the value of the induction project. Beyond that they served to detect characteristics of an "emergent micro-political awareness and literacy" expressed in the shift from participants as individuals to understand themselves as affected by institutional situations such as norms, traditions and power relationships. This led the teachers to propose and carry out change actions in their schools such as designing and conducting a teacher survey on homework practices related to learning and assessment. In other words,

the inquiry projects, the collaborative analysis and personal reflection of these teachers (micro-political literacy) helped them to move away from mere diagnosis and passive resistance to more active ways of changing in line with their professional commitment. The fact that all but one of the focal teachers had a particular social justice orientation embodied as a result of their teacher education programme, made them more alert to socio-critical issues in their schools and more prone to change situations rather than "learn to live with them".

In line with the concepts illustrated in Fig. 13.1, the studies reviewed above centre on the social and emotional aspects of teaching through the lenses of the school institutions (orientation and culture) and how to deal with conflicting situations arising from these (micro-culture literacy). Devos et al. (2012) provided interesting evidence about how a more rigid (performance-based) school orientation affects new teachers' wellbeing in the form of feelings of depression, while a school that allowed or pushed for innovation enhanced new teacher self-efficacy.

Equally, the report of constraints experienced by new teachers prepared to be self-confident and to work with difficult populations (Mc Ginnis et al., 2004) highlighted the links to the sort of performance-based school climate described in the study by Devos et al. (2012). Dealing with such situations requires preparation in how to manage such a school climate, something highlighted by Curry et al.'s (2008) account of the positive effects of an induction programme on the development of "microliteracy" and responses to various and conflicting situations linked to school cultures.

Collaborative Learning and Its Impact on the Practice of Teaching

The benefits of collaborative teacher interactions have a long history of research and advocacy as powerful instruments to exchange experiences and learn from such exchanges. Spontaneous forms of collaboration among teachers in schools or structured ones in school departments have long been part of school cultures as illustrated for example in Talavera's (1994) fascinating ethnography of a Mexican primary school over an 18 month period. In her study Talavera found numerous informal and formal ways in which beginning teachers adapt and learn in a highly interactive teacher context, seeking and finding assistance from teachers who spontaneously take on mentorship roles, borrowing and lending books to supplement the official texts, which are distributed in the Mexican school system, and discussing among themselves how to face the demands of being responsible for a school class for the first time.

McNally, Blake, and Reid (2009) in a similar ethnography of informal learning by new teachers in Scottish schools noted the importance of learning about the relational and emotional handling of teaching demands. Similarly, in the absence of any formal kind of mentoring Chilean teachers with less than 3 years of practice recalled the help received from colleagues in their school or in the rural micro-centres that

gather teachers from multi-grade schools for a monthly exchange of experiences and professional learning (Avalos & Aylwin, 2006).

More recently the impact of work on communities of practice (Lave & Wenger, 1991; Wenger 1998) and other research on learning communities (Vescio, Ross & Adams, 2008) have prompted the examination of diverse forms of induced beginning teacher collaboration – as reported in the above cited research by Curry et al. (2008). Among such studies are those that look at particular collaborative activities, including the "book club" described and researched by Kooy (2006) which involves new teachers reading, discussing and drawing implications for their practice from fictional books on education and teaching.

Other forms of collaboration using technology involve the sharing of electronic journals and teacher online communication continued from pre-service to beginning to teach (Goos & Bennison, 2008). Not all these forms, however, lend themselves to teacher reflection, analysis, new knowledge and changes in practice (Moore & Chae, 2007). Killeavy and Moloney (2010) reported, for example, that Irish beginning teachers who engaged in blog-sharing were inclined to superficial accounting of events in teaching rather than reflective analysis.

Windschitl, Thompson, and Braaten (2011) described a more contrived experience of inducing new science teachers into thinking about their practice through analysis and collective discussion of their students' work. This experience, framed within socio-cultural activity theory, assumes that teachers need adequate tools to analyse students' work, a shared language and the holding of a reasonable conception of "good teaching". These elements together constitute what the authors characterised as "ambitious pedagogy" and comprise the capacity to "understand important ideas, participate in the discourses of the discipline and solve students' problems" (Windschitl et al., 2011, p. 1315).

The experience described by Windschitl et al. (2011) involved working in a group with 11 science teachers, before and after they completed their teacher education at one institution in the United States, in the form of a collaborative "critical friends group". The purpose of the group was to elicit teachers' engagement in professional discussion around work produced by their students, previously collected and analysed on the basis of specified guidelines and rubrics. The group meetings followed a specific protocol, beginning with each participant's presentation of the analysis of their students' work, followed by the group engaging in clarification, probing and discussion connected with the presenter's analysis, reaching conclusions and offering suggestions about how to deal with situations requiring improvement, ensuing reflection on the part of the presenter and final debriefing by the group facilitator.

The critical thinking group meetings took place during the practicum experiences of the future teachers and later during their first year of teaching and its effects over time were documented and comparatively examined through analysis of the group-meeting videos, teacher interviews, classroom observation and field-notes. The group meetings and the possession of relevant tools of analysis proved efficacious in that it was possible to document positive changes in practice occurring over time in the degree of professionalism with which teachers analysed their

student's work, particularly in relation to one of the categories of the pedagogic model used: "pressing students for evidence-based explanations".

The process also laid bare the important mediating role played by the pedagogic standpoint that each participant brought to the process regarding the greater or lesser complexity of the teaching-learning process. Thus teachers holding to an "acquisition model of teaching" tended to explain the results of their students' work as problems related to students' background and capacity, while other teachers holding to a more problematic and complex notion of teaching tended to puzzle about why and what might have been their own or their students' interpretations that led to such conclusions: "I didn't push students to a higher level of thinking" (Windschitl et al. 2011, p. 1323). This awareness of the role that is played by the nature of the teaching and learning process (pedagogy) suggests the need to work early on during teacher education on future teacher beliefs and conceptions of teaching.

Re-configuration of Professional Identity and Practice from Teacher Education into Classroom Teaching

The preceding sections have carried a selection of themes that are part of that which is studied about beginning teachers and their professional development. In the first section the centre of attention was on the content of teaching and on how teachers enact what they have learnt about a specific field of knowledge bearing in mind, or being affected by, the possibilities offered in an existing curriculum frame as well as by its limitations. This enactment was illustrated through means of a limited number of subject areas, mostly science, mathematics and language, partly because as indicated earlier in the chapter, these tend to be subjects considered key in light of existing national and international testing (i.e., TIMSS and PISA).

As has long been acknowledged enacting the curriculum or seeking to stimulate, widen or transform student learning in a subject area requires thinking skills related to knowledge of students and understanding of subject concepts and abilities as required in music, arts or physical education. In turn, the process of teaching is influenced by beliefs (Nespor, 1987; Pajares, 1992) that are partly acquired through earlier school experience (Lortie, 2002), teacher education and sustained by personal inclinations.

The preceding sections offered examples of research dealing with thinking in teacher preparation and the enactment and managing of complexity through cognitive capacity development. The social nature of teaching and teachers as relational professionals in turn was discussed from the perspective of literature dealing with schools, which, like other organisations, are characterised by their particular cultures and the power relations operating within them.

The extent to which such school cultures afford opportunity for new teachers to find a stimulating environment in line with their still developing capacities and

pedagogic orientations was illustrated through studies looking at the "settling-in" experience, the contextual conditions for self-efficacy development, organizational and relational tensions and constraints leading to frustration or depression, all factors studied also in research that identifies conditions that emotionally impact on teachers and influence their attrition rates (Skaalvik & Skaalvik, 2011). The previous section also looked at the positive side of teacher relational capacities embodied in their spontaneous learning together or in different forms of collaborative work – some of which are promoted by teacher education institutions as well as schools.

In what follows, the centre of attention is on what might be termed the current discussion and understanding of teachers' professional learning and its support forms in different contexts: vision and conceptions of teaching and professional identity and its tensions, socio-political conflicts, and the support structures for beginning teacher learning, all of which help to bring together the various interacting elements illustrated in Fig. 13.1.

Vision and Conceptions of Teaching: Constructing a Professional Self Mediated by Tensions

The decision to prepare as a teacher is not always informed by a full view of the profession as such in the prospective teacher's country and social context. Deciding on a concurrent programme of teacher education immediately after completing secondary schooling implies that other tertiary or university alternatives have been left aside (voluntarily or involuntarily); depending on the available options not considered or for which the person was not eligible. For some teacher education candidates, the decision may represent the only or a secondary choice if they were educated in systems of unequal quality observed in higher or middle-income economies such as Chile or South Africa. On the contrary other candidates may choose to become a teacher with a good understanding of the implications of such a choice and a clear desire to become an educator, a decision facilitated perhaps by already being a graduate entering a post-graduate teacher education programme.

Both types of teacher candidates may attend a teacher education programme for periods ranging between 12 and 24 months for a post-graduate course and 4–5 years for a concurrent course, during which time presumably they will have built the knowledge base and engaged in the practical learning needed to begin to teach. Presumably, also they will have reconstructed their original selves and developed a burgeoning teacher identity. The point is that there can be different motivations and different trajectories for becoming a teacher but that in the end these converge in having to engage and share in similar tasks and responsibilities.

Yet, how similar are these tasks and responsibilities and what is the common thread that links them? In the light of much of the research examined for this chapter, which is largely centred on individual teacher accounts of their trajectories and early teaching experiences, there are many differences between one teacher and

another but also many similarities. The differences are not just due to subject speciality, grade level, school types and contexts, but also to conceptions and approaches related to pupils, to other teachers, to subject-matter teaching, to the facing of conflicts even if they were graduates from a same teacher education programme.

The similarities in turn have to do with the communicative nature of teaching whether within a direct or a constructivist approach, the need to "seduce" students to learn whether softly or harshly, degrees of awareness of external constraints or supports that assist in the process of teaching, and the sense that teaching while possibly technical in its operation requires a vision to sustain improvement over time that exceeds the narrow forms of compliance with teaching objectives. These similarities and differences found in the approaches and practice of teachers extend to the profession as a whole and underlie the construction of the widely researched concept of professional identity.

Professional identity is described from different perspectives depending on the conceptual framework used (sociological or psychological). Teacher professional identity and task definition is dynamic and changes over time (Beijaard, Meijer & Verloop, 2004), but is not necessarily available for communication to others unless there is a motive to reflect and do so. The key elements that build into a teacher's identity are found in personal biography, teacher education specialisation and experiences, the human and educational interactions in classrooms and schools, and more broadly in relation to the socio-political contexts in which teachers work. Teachers illustrate a particular configuration of their identity marked by what they teach, whom they teach (age group, type of school) and how prepared or competent they feel in relation to their required task. These conditions, which also include teaching as valued by society (status, prestige) encompass views about education and the teaching/learning process as well as pupils' response to their acts of teaching (Windschitl et al., 2011; McElhone, Hebard, Scott, & Juel, 2009). They are very much in flux in the beginning stages of teaching. Not only is a teacher's perceived identity subject to re-construction over time, but it is also lived through tensions expressed in different forms that connect with their teaching experience and their schools as well as with the education system (Pillen, Beijaard & den Brok, 2013, Toren & Iliyan, 2008).

Part of a teacher's professional identity is provided by the broader vision of teaching that is held as important. Eliciting such vision and describing the conditions under which it can be enacted was the subject of McElhone et al.'s (2009) study on the transition of primary literacy teachers from teacher education into a diversity of schools from New York City to New Mexico towns in the United States, through interviews and filmed lessons. In comparing patterns in the visions elicited during these two phases of the teachers' experiences, the researchers found a common feature in the importance given to types of student talk and collaboration ("productive buzz") and to producing "colourful" classroom climates. But they also noted the effect of the literacy subject itself on the enactment of these visions. This meant, that those teachers whose school context did not sustain their vision of teaching were able to hold on to it if they were equally strong in their literacy teaching approach. On the other hand, teachers weaker in the literacy teaching approach

became discouraged or unsure about enacting their broader vision in their everyday teaching and tended to be drawn into the more day-to-day concerns of teaching (McElhone et al., 2009).

The influence of different types of induction activities in sustaining teachers' evolving professional self-conceptions as they relate to identity construction was the subject of a case study by Cooper and Stewart (2009) in Australia. The study was grounded in three concepts of capital as applied to teachers: professional capital or acquired knowledge and skills; cultural capital afforded by tools and technologies and social capital expressed as participation in networks; rituals; and, conventions. Data was collected by means of survey, interviews and observations. Using direct quotations from interviews with four teachers who were in their second year of teaching, the researchers were able to assess the degree to which these teachers grew or not, particularly in professional and social capital.

Access to quality induction experiences (not the case for all the teachers) was a factor in how teachers managed their teaching demands and felt confident and stimulated by what they were doing. Particularly important was the participation in networks of collaboration which some of the induction schemes facilitated. Also highlighted were the micro-political issues in the teacher's context, as well as the fading role of prior teacher education influences over the beginning teacher professional identity definitions as they encountered situations for which such experience had no relevance.

Professional identity conceptions are very much linked to the school level or subjects for which teachers are trained. This does not necessarily hold true for a primary generalist teacher whose main source of identity is the age group taught rather than a specific subject. In this respect, Smith (2007) studied the professional identity tensions connected with the teaching of science as experienced by primary generalist teachers in England. According to the report these teachers functioned with different identity concepts: some clearly operating within a "generalist" identity definition, others moving towards a greater identification with the teaching of science and a third group who saw themselves primarily as teachers of small children rather than of middle school students. Based on these findings, Smith argued that primary teachers' preparation and the support provided during their early teaching experiences should work towards assisting them to integrate role definitions of a generalist cum subject-oriented perspective within their primary teacher identities.

Similarly, from the perspective of reconciling a "geography teaching self" within the self of a primary generalist teacher, Martin (2008) suggested that teacher education programmes make use of the "geographical" self in which everybody shares. This "self" is constituted in Martin's words by the everyday geographical knowledge that we all have – our ethnogeography – also experienced by future teachers, beginning teachers as well as by their pupils. Because it belongs to the every-day world, drawing on this kind of experiential knowledge in the preparation of generalist teachers could facilitate the construction of a subject focus within a primary teacher identity in all those thematic areas about which there is such an experiential base.

Other identity tensions appearing in the research literature are those related to gender in the case of male teachers who work with young children (Hansen & Mullholland, 2005) and more specific ones involving generalist and special education teachers who work alongside each other in primary classrooms (Youngs, Jones & Low, 2011). The latter tensions are possibly resolved or eased by clearer and overt valuation of inclusion in schools and classrooms on the part of the school authorities and teachers.

The studies referred to above highlight not just the importance of identity construction in new teachers but also how in this construction there are always tensions: between visions of teaching and the degree of subject knowledge (professional capital) to enact them, between visions of teaching and ability to be part of the school culture and community, between male and female constructs of teaching or between generalist or specialist, rural or urban teacher identities. The resolution of these tensions, in the light of the studies reviewed, may to a degree, be possible through attention being provided to them in teacher education processes and practices, through collaborative induction experiences and through a policy-climate that favours inclusion and respects difference.

Socio-political Issues Surrounding Beginning Teachers' Practice

In line with prior identity definitions and with their own education and social experiences, beginning teachers are not simple inexperienced practitioners when they begin to teach. They come with visions of teaching, personal stances about the curriculum and greater or lesser degrees of confidence in their teaching and managerial capacity (self-efficacy) all of which interact with the systemic policy environment and the particular cultures of their schools. Part of the research literature on beginning teachers explores some of the conflict areas experienced by teachers in that respect; not so much with the purpose of resolving them but of laying them bare especially in relation to decisions about remaining or abandoning the teaching profession. These issues vary depending on national policy contexts or the relationships between local systems of education and schools (Grossman & Thompson, 2004) as well as reflecting conflicts within the school environment in which the teacher begins to teach (Craig, 2013) or between the orientation of teacher education programmes and the responsiveness of the school environment to such orientations (Curry et al., 2008).

In facing their new schools and classrooms beginning teachers are confronted with external frames that encircle their daily activities which in countries such as Chile, Singapore, England, the United States and others are marked by strong accountability policies, competition among schools, and frequent external standardised examinations. While the entire thrust of these policy instruments may not be fully comprehensible to new teachers their impact on the organisational demands

of the school, such as pressures to succeed in competitive examinations, of necessity constrains their resolve to innovate and pushes them to conform to existing forms and practices.

Loh and Hu (2014) offer a worrying example of how the Singaporean education system built on neo-liberal principles and institutions broke the original idealism and resolve of a beginning primary teacher to enact the constructivist teaching she embraced during her teacher preparation. The study was based on interviews that started before her final teaching practice and continued during her first year of teaching in which a key piece of information was the narration of stories and incidents referred to her teaching experience. Although the researchers did not set out to examine the effects of the educational policy environment over the teacher's practice, it became progressively evident throughout the interviews.

Besides the hardships involved in having to teach a full schedule (contrary to regulations that it be 80 % of contract time), the teacher involved in Loh and Hu's (2014) study faced a host of activities related to school competitions internal and external, which took a big chunk of her time. She was considered "outspoken" for raising concerns about the evaluative climate of the school management and was not able to get the support of other teachers. Faced with a competitive environment and its demands, the teacher found it increasingly difficult to enact her preferred ways of teaching and gave up trying. As observed by the researchers in the course of the year: "her beliefs and practices had metamorphosed from a passionate pursuit of meaningful engagement to an overwhelming reliance on transmissive drill and practice" (Lo & Hu, 2014, p. 19).

Although not entirely similar the social justice orientation of new teachers derived from personal convictions and influenced by teacher education programmes can also be a source of conflict in schools where testing and results are paramount in their goals (Curry et al., 2008). Even if such stressful conditions are not the case, enacting forms of teaching based on principles of social justice are difficult and how teachers may progress in that direction is not always felt; especially when unable to voice uncertainties. The authors recommend that teacher educators in programmes oriented to social justice alert future teachers to the inevitable struggles surrounding the teaching for social justice, scaffold opportunities for them to reflect and assist teachers in the enactment of curriculum that incorporates social justice elements (Agarwal, Epstein, Oppenheim, Oyler, & Sony, 2010).

Support Structures

The need for mentorship and support of beginning teachers has been widely recognised, and yet as indicated earlier in the chapter, these structures are not necessarily appropriately available for teachers in various countries. Support forms range from spontaneous assistance offered by a beginning teacher's colleagues in a school situation to formal systems of induction. A comparative review of different arrangements for induction in Shanghai, Switzerland, France and New Zealand (Britton,

Paine, Pimm, & Raizen, 2003) showed induction as centred on subject teaching, understanding of pupil needs, assessment, reflective practices as well as understanding the school organisation and of the self as a teacher. Howe's (2006) review covering the same countries as Britton et al.'s (2003) with the addition of Australia, Canada and Germany highlighted different induction structures ranging from being part of initial teacher education in the form of internships as in the case of Germany, being linked to Professional Development Schools as in several locations in the United States to loose arrangements for mentorship during the beginning years of teaching, and possibly reduced teaching load.

The less structured forms may simply consist of information meetings or the assignment of an experienced teacher as mentor to the new teacher. Around 45 % of beginning teachers who responded to the OECD TALIS survey (Jensen et al. 2012) covering 23 countries worked in schools where formal mentoring for new teachers existed, but only 38 % indicated that the programmes were actually restricted to those teaching for the first time. The TALIS survey also found that 54 % of the new teachers in schools with induction programmes and mentoring only received appraisal or feedback once a year or less.

Despite the complications produced by the diversity of induction opportunities in different countries, over the last decade there have been a number of reviews and studies on the effects of induction and mentoring in contexts where such practices are well established. Searching for studies documenting the effects of mentoring Totterdell et al. (2008) could only find a limited number, mainly in the United States, Great Britain and Australia that showed positive effects on professional learning, performance and retention. These positive effects depended on there being regular meetings between mentors and new teachers, adequate time for such meetings, and a match between both in terms of subject speciality and age/grade taught. Wang, Odell, and Schwille (2008), covering research on induction in similar countries plus China, concluded that the different components of induction programmes (mentorship, workshops, classroom observation) had a combined effect on how teachers think about teaching and their practices, but not through their single elements. On the role of mentors, Wang's review detected positive effects if their belief patterns were similar to those of the new teachers and if mentors and new teachers were matched as far as possible in subject specialisation. Equally important in the studies reviewed by Wang et al. (2008) was that induction effects are mediated by the social and organizational contexts of the schools in which teachers work.

While the research done prior to 2008 should, in Wang's (2008) view, be taken with caution in terms of policy implications, a more recent body of research on induction and mentoring has extended its coverage to other geographical locations and topics. For example, research by Main (2009) examined the role of induction within the Maori culture context in New Zealand and research in Brazil moved from describing beginning teacher problems to evaluating the effects of an on-line mentoring programme conducted by educators from a Brazilian university (De Reali, Tancredi, & Mizulami, 2010). The Brazilian scheme was described in terms of three phases, which were part of the format of the mentoring scheme, but which also

included the lived narrative descriptions the participants transit through in the stages of "initiation", "targeted learning" and "disengagement or closure".

Tynjälä and Hekkinen (2011) in reviewing teacher learning in the workplace, referred to the peer group mentoring model developed and implemented in Finland. Based on the notion of professional autonomy as "collective meaning making and will formation" (Tynjälä & Hekkinen, 2011, p. 24), the model involved 4–6 new teachers meeting infomally 6–8 times a year for an hour and a half to 3 h to exchange experiences, discuss issues and learn from each other. An experienced teacher facilitated the meetings and though it may involve structured elements, it was basically informal with no assessment involved.

Despite the growing importance given to induction and support for new teachers in policy analysis (OECD, 2005, UNESCO/OREALC, 2013) as well as the practice of countries such as those mentioned above, the experience of many new teachers continues to be described as problematic and their support left to informal practices in their schools as well as their own efforts in looking for help. This is particularly evident in relatively recent literature on teachers in Spain (Eirin Nemiña, García Ruso & Montero Mesa, 2009) Argentina (Serra et al., 2009), Chile (Avalos & Aylwin, 2006; Flores, 2014), Mexico (Martínez, 2014; Tijerina & Martínez Sánchez, 2006) and Nigeria (Koko, 2007), but also in relation to teaching specializations such as early childhood teaching in countries with well-established induction and mentoring practices such as the United States (Mahmood, 2013).

Conclusion

It was not an easy task to write a chapter on beginning teachers in the second decade of the twenty-first century that would avoid rephrasing much of that which was copiously studied at least two decades ago. Therefore, it seemed important to search among the many research pieces developed in the last 15 years for studies that offered new insights into the process of beginning to teach, while at the same time reflecting the diversity of contexts and policy environments around the world where teaching takes place. It was also useful, in terms of organising the research reviewed, to hang on to the schematic illustration (see Fig. 13.1) of the components of a teacher or educator's self and the actions or constructions that enable or give form to teaching and its quality.

The core components of Fig. 13.1 comprise the knowledge, procedures and competences that teachers gain through education and practice, the set of emotions, both positive and negative, that accompany teaching and are key to the job, the quality of teaching understood as constructed with others (teachers, pupils, friends, family, policy-makers) and critical reflective dispositions fuelled by continuing to learn. Although teacher education experiences should help future teachers develop these capacities and grow beyond what they originally brought with them, essentially they are only put to the test when they begin to teach. The process is not, or

need not, be a solitary task for new teachers driven by a missionary sense of commitment to the education of others. It can, and should, be enhanced, improved and corrected as it unfolds, which is possible through support in such things as peer mentoring (e.g., the model offered by Tynjälä and Hekkinen, 2011) based on rigorous research about teaching and its conditions.

Throughout this chapter different pieces of research on beginning teachers were examined and discussed. These were studies that suggested new or different ways of understanding the beginning-to-teach phase of a teacher's career such as thinking about teaching and reflecting on its results, learning and sharing with others or facing the contradictions of sites and situations in relation to acquired and believed-in knowledge and practices. Many of the studies reviewed had different conceptual anchors that helped to make sense of the resulting interpretations and conclusions, such as socio-cultural and symbolic interaction theories, the notion of capital as applied to the professional, cultural and social learning of teachers or goal achievement theory in relation to schools and their target definitions.

The studies reviewed offer several messages for teacher educators and policy makers to seriously consider. Among the central messages is that the influence of teacher education over what transpires in beginning to teach is not linear but rather that it "comes and goes" (So & Watkins, 2005; Watzke, 2007). That some expected capacities to face the uncertainties of teaching must be fostered during initial teacher education (Bullough et al., 2008), and that it is not sufficient to infuse a sense of working for social justice if at the same time future teachers are not helped to enact appropriate curricular activities or learn about conditions in schools and school systems that work against those ideals (Agarwal et al., 2010; Loh & Hu, 2014). In turn, policy makers and school authorities must understand the contradiction between pushing for high quality teacher education that prepares teachers to enact challenging forms of teaching and being responsive to pupils' needs, while further narrowing accountability structures based on standardised testing (Cherubini, 2009; Curry et al., 2008; Loh & Hu, 2014).

A final addendum to this chapter has to do with the research process in the studies reviewed and a note about themes that were not included. Many of the studies looked at the trajectories followed by teachers through teacher education and used multiple ways of learning about their experiences, difficulties, processes, challenges and successes. Also most of the studies reviewed were careful in the reporting of how the qualitative data had been analysed and converted into meaningful categories to develop understanding of the given situation. There were fewer identified large-scale studies using quantitative or mixed methods approaches, although a number of the research articles dealt with select cases that were embedded in bigger studies. Some important areas were not covered in this review such as working conditions affecting the high rates of attrition among beginning teachers in many countries, as well as much of the specific research on mentoring processes and their effects. However, these are raised in other chapters of the Handbook and offer good insights into the issues.

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