

PROFESSIONAL DEVELOPMENT OF HIGHER SCHOOL EDUCATORS

Although the current Brazilian backdrop demonstrates that investments in the elaboration, implementation and assessment of educational public policies concerning teacher education have been made, it can be said that more emphasis has been given to the initial and continuing teacher education processes of elementary, medium and high school teachers.

Higher education teaching is still an area in which initiative is weaker. Post-graduate programs in education, as a rule, receive professionals of different areas of knowledge. Those are usually teachers from colleges or universities: teacher educators and other teachers who work with baccalaureates or with formative processes of liberal professionals. Even though there is great and constant claim from these professionals for spaces destined to the analysis of pedagogical practices regarding the *learning to teach* process, there has been usually no space in post-graduate programs for the practice of teaching, or the systematized discussion of its specific aspects. There are no initial teacher education programs concerning the higher education teacher. Only a small part of the faculty that is involved with teacher education courses or programs has some kind of pedagogical preparation. Most of the higher education teachers never had any kind of pedagogical preparation (either pre-service or in-service).

Currently, there is an initiative from two public agencies – CAPES (Brazilian federal agency for higher education professional improvement) and CNPq (Brazilian federal research agency) – regarding the preparation of the higher education teacher. It concerns a practicum to be developed in higher education institutions for a period from 6 to 12 months, by graduate students who receive scholarships

Most initiatives, however, derive from the universities' own institutional policies, and even then, usually lack a formal explicit curriculum destined to teacher education, which lays out what the teachers involved are required to know and be able to do regarding the teachers at the receiving end – a requirement present in current educational public policies.

That said, Brazil is currently going through a reform of higher education which involves critical analysis of the formative processes of different professions, as well as the establishment of curriculum guidelines for all courses. Most of these educational public policies are grounded on research related to how teachers learn to teach and to professionally develop themselves. These reforms used to strictly encompass pre-school education, primary and secondary schools (K-11 or currently, since 2006, K-12), taking into account different regional and local contexts. More recently (2002 onwards), though, they have also started to include higher education teaching with new national curriculum guidelines focusing on teacher preparation, certification programs, and baccalaureate courses. The higher education reforms involve critical analysis of the formative processes of different professions, as well as the establishment of curriculum guidelines for all courses, grounded in educational literature which emphasizes processes of teaching and learning directed towards the construction of knowledge, thus overcoming the obstacles presented by the transmission-reception model. College/university teachers may as well be considered the pillars of the new Brazilian reform of higher education.

Professional education currently faces a crisis common to all professions: new profiles are being established; new competencies demanded in order to face the actual complexity of the problems; and the importance given by different institutions and organizations to ethics and social responsibility generate new demands that must be dealt with. But exactly because the guidelines are grounded in recent literature, which deals in terms of *learning to teach*

processes, we face a peculiar scenario in Brazilian universities: the same teachers who have been formed by, and according to, the paradigm of technical rationality are the ones required to foster formative processes under the newer paradigm. If, from a certain angle, we can argue that these professionals will be able to perceive the limitations and difficulties provided by the paradigm of technical rationality, and by doing so will be able to overcome them, by another, we must consider that these teachers have developed their pedagogical practice and have acquired autonomy and self-confidence under the previous paradigm. A certain amount of resistance when it comes to following the newer paradigm should be expected, as well as difficulties in the reconstruction of teachers' previous courses having as reference a new way to understand teaching and learning.

In Brazil, as previously mentioned, conventional methods based on the transmission-reception model are dominant. Lessons are frequently set up as expository lectures, sometimes involving the aid of practical demonstrations as well as the supportive use of a variety of media. Content is conveyed through these expository lessons, and student development is measured through examinations that evaluate the memorization of facts, information, formulae and procedures. Teaching, in that way, is understood as the management of a group of techniques that are available for the teacher to use. The curricula are linear, sequential and compartmentalized. The sequence of courses is established so that courses related to the basic sciences are taught first, followed by courses on applied sciences, ending with the practicum. Each course's content is transmitted as if it were an autonomous block of knowledge, with the students left on their own to find cohesion in grouping a series of blocks. Not infrequently, teachers themselves do not know in what way the blocks fit together, since they're exclusively dedicated to their own block and unable to answer, if questioned what kind of professionals they are supposed to be educating.

Institutional culture can also provide an obstacle for the use of methods which favor the development of professional attributes such as autonomy, creativity, exchanges between peers, inquisitiveness, etc. – and much more so if the institution is involved in research. What can in fact be observed, though, is individualism, competition and the isolation of teachers' works, with dire consequences for the flourishing of teaching and learning processes compatible with the new guidelines for higher education. As previously mentioned, the majority of the faculty in universities has no pedagogical preparation (either pre-service or in-service). Usually these teachers teach exactly the same way they were taught, reproducing the same models of teaching to which they were subjected, and consider this process immune to questioning.

It can be said that innovation and alternative ways to prepare teachers for different modalities of teaching are the main objectives of the guidelines and the focus of this study, which seeks to offer an overview of conceptions, experiences and challenges underlying the Brazilian educational debate. Such conceptions take into account what the literature labels as the 'knowledge society', with its characteristics of spreading and deepening and socializing knowledge in real time through Information and Communication Technologies – ICTs.

Authors such as Drucker (2000), Senge (1996), Kanter (1996), Imbernón (2000), and Shulman (1996, 1987), for example, present some important ideas to be considered when it comes to investigating the meaning of the concept of professional preparation and development. As examples of these ideas, we can mention: the diagnosis of society, teachers and students needs; rethinking of the goals concerning citizens' education in face of a changing society; the up-to-dateness of knowledge in different fields; the mastering and use of Information and Communication Technologies; the notion of lifelong learning; the

implementation of decentralization in organizational processes of decision making; commitment of faculty with processes of change; the construction of partnerships; curriculum revision and the teachers' new roles in current contexts; the concept of "teaching as a community property" (Shulman, 2004), meaning actions engaging faculty and students in the development of new models and possibilities; the development of learning communities; acknowledgement, commitment and valuing diversity as a cultural and pedagogical process; and implementation of new methodologies pertinent to new educational goals.

In many areas of knowledge, admissions processes at universities emphasize research in detriment of teaching. Not only that, institutional initiatives having the advancement of processes of professional development as a goal are as various as the number of institutions involved, since each institution conceives the higher education teacher's formation in different fashion, and according to the institution's own development plans..

Even so, a few universities, concerned with quality of teaching and the peculiarities of the education of the future professionals that seek them, have been taking initiatives in order to overcome the problems observed in Brazilian higher education. Many of these initiatives are very slight and cover only the institution from which they came, or only a few of the majors offered. Some were born from experimentations regarding the implementation of new national guidelines for specific areas of knowledge.

1) Revision of some higher education curriculums implementing differentiated formative processes, focusing teacher educators

Innovations in higher education usually comprise the introduction of new courses in the curriculum, e.g., informatics in most programs, entrepreneurialism in business administration and economics, creativity in engineering, technology in most health-related programs, use of computers to gather information (Internet), project design, precision and safety procedures in labs, support to regular courses, creation of distance courses, formulation of the *Plano de Desenvolvimento Institucional* (Institutional Development Plan) and of the *Projeto Pedagógico* (Pedagogical Project), and creation of the *Comissão Própria de Avaliação* (Local Evaluation Committee), in accordance with the directives of the Ministry of Education.

What can be said about these innovations? Innovations in higher education are only those that promote changes that affect key points in its organization, such as innovations that attend to broader educational goals and encompass the promotion of skills (or human and professional competencies) and attitudes, instead of focusing only on the development of cognitive aspects

Significant innovations affect curriculum organization and flexibility to address the demands of a new pedagogical project or new educational goals for higher education graduates. These innovations restore the role of courses as components of a curriculum, promote interdisciplinarity, replace traditional methodologies for new technologies that favor the attainment of diverse educational goals, motivate students to learn and be responsible for their learning, and harness the power of new technologies (informatics, telematics, Internet etc.) that enable education beyond the classroom. In addition, these innovations re-examine the evaluation process, the role played by the pedagogical mediator between the students and their learning, and encourage teamwork, partnerships and co-responsibilities; these innovations prepare teachers to take part in and commit themselves to the new projects and support them during its implementation.

We have found innovative models that meet the aforementioned demands in some higher education programs in Brazil. For instance, a dentistry college in Fortaleza (Ceara State) has adopted a new curriculum to prepare dentist-surgeons inspired by the medical education program of McMaster University, Hamilton, Ontario. This model has also been adopted by the Harvard Medical School for over 10 years with excellent results.

What does this project comprise and what are its strong and innovative points? It is based on self-directed instruction, emphasizing the kind of active learning that values ethics and sensitivity to patients' needs and concerns, promoting the students' capacity to seek new knowledge. It is a process of guided discovery and promotion of interactive learning in small groups: from the very first day students receive stethoscopes and begin their practical learning activities guided by a physician and teacher.

Groups of 8-10 students and a coordinator-teacher work together on one of the major themes of the medical program during 12 weeks. Each member of the group does bibliographical research and later discusses the newly gathered information with the other team members and coordinator. If necessary, specialists are invited to give more detailed explanations, complement with information and solve problems. On top, all of the courses/subjects belonging to the curriculum concur to this major theme.

The courses/subjects are not taught in a juxtaposed or fragmentary way. Subjects are not taught or learned separately or because they are important *per se*, but because they have information and skills necessary to understand or explain a given health issue or disease as well its etiology, prevention or therapeutics.

Strategies are selected so as to promote student participation in debates, observation followed by discussion, reading, research and practical activities with patients, simulated activities, and discussion of cases after observing them through CCTV. There are no longer lectures to large classes.

The students study all year long. There are no tests or exams. The evaluation process is on-going, offering feedback on all activities performed by the students. It exists to help students to learn, not to find out what they have not learned, much less to expose what they have not learned to flunk them. Contrary to other traditional systems where tension rises exceedingly during the period of exams, in this system tension is tolerable and continued because students are expected to work (by other group members and educators) and bring information to the discussion meetings to promote the learning of the group. The feedback may come from the students themselves (self-evaluation), from group members (peer evaluation), educators and patients with whom the students interacted during their college years.

We have, also, some examples related to Medicine Preparation Programs. The curriculum has been totally redesigned within the regular medical program. The educators-coordinators work in teams based on the program goals, which are acknowledged by all. This and the aforementioned changes followed some principles that revolutionized some truths then regarded as untouchable:

1. Students should be placed in contact with professional practice from the very beginning of the program and not just from the third year on—as usually happens in medical schools, thus leaving the first two years to the teaching of basic courses. It is well known that this way of seeing and designing the curriculum makes it very dull to students;
2. Theoretical prerequisites to practice should be overcome. It is also well known that theory and practice can be integrated and thus facilitate knowledge construction;

3. Knowledge does not have to be acquired in a logical and sequential mode. Many times the psychological order that deals with impacts, novelties, conflicts, problems, interest and motivation promotes more significant learning;
4. Knowledge is constructed in networks and not just linearly, i.e., departing from the fundamentals of science. It is possible today, not only at the university, but at the previous levels as well, to teach contemporary physics based on everyday problems and issues that interest students and return to primary and fundamental notions and theories whenever necessary;
5. Personal responsibility for studies and professional training as well as ethics in relationships with classmates, teachers, patients and society are the pillars of this educational innovation and, again, do not constitute separate courses/subjects, but are present throughout the program.

The medical schools in Bauru and Marília (São Paulo State), Londrina (Paraná State), and the Public Health College in Fortaleza (Ceará State) have adopted PBL (Problem-based Learning) as their educational paradigm. PBL has been conceived not as a novel instructional methodology, but as a new curriculum paradigm, with a well defined curricular philosophy and with quite clear professional education goals. Its curricular philosophy proposes the development of self-directed learning in a collaborative learning context, from problems that are formulated by the program participants, following explicit educational goals.

These problems indicate the curricular organization model, no longer determined by the courses/subjects, but by modules or cycles in which the basic sciences are taught in integration with the clinical courses. It intends to prepare health professionals with inquisitive disposition, lifelong learning habits, empathy towards patients, ability to articulate prevention and therapies, and sensitivity to social demands and policies in the health area.

This paradigmatic aspect of PBL should be highlighted because in several papers, articles, experiences and discussions only the methodological-technical aspect of PBL is addressed. This results that PBL implementation projects in different areas and educational discussions focus more on technical issues about problem-writing, problem-solving steps, chronograms, time and content coverage than on the exam of the educational philosophy that supports these techniques, the commitment to its goals or the training of teachers and students to work with this new proposal and take up its principles.

The core components that make this paradigm work are:

- Problem-initiated learning, teamwork facilitated by a tutor, individual work, evaluation of student performance, and organization of learning units. As suggested by the name of the paradigm, the problem is at the center. It is the description of a real phenomenon, which has to be explained by the students in terms of subjacent processes and principles. The problem is presented without previous information explaining it;
- The problem is the departing point and guides the learning process. As the problem is approached, it's the students' responsibility to draw the learning goals to be pursued, select the sources and decide how the learning will occur;
- The groups are tutored, i.e., the groups are not expected to do everything by themselves. They can count on tutors/teachers to help them;
- It is up to the students to extract all aspects of the problem, elaborate hypotheses, draw learning goals, identify information sources, do research, read, synthesize information, analyze, propose solutions when asked to, evaluate themselves and each other, work individually and collectively (in small groups);

- It is the tutor's job to present the problem, guide the students on how to work in teams, facilitate learning throughout the process, plan the evaluation strategies and process.

Since in our college and university programs it is more usual to seek technical resources in order to solve problems, in a technical way only, the use of PBL, in many cases, has been reduced to a teaching method. The new paradigm has not been put into practice.

But PBL is not the only paradigm available. According to the actual implementation of professional preparation guidelines inspired by an epistemology of practice (Schön, 1983,1987), implying the study of higher education teachers concerning constructivist/cognitivist approaches as well as the socio-cultural ones, we have expectations that professionals of different areas who teach in colleges and universities will overcome the transmission-reception learning model and recognize their educational practice as teachers. The aforementioned experiences are, in the actual context, very important as possibilities of innovation in higher education, and empower different professionals as teachers, because:

- They try to bring about educational goals and foster different professional profiles, with goals that constitute new institutional organizational models, programs, learning activities, and guidelines to teachers and students.
- Institutions assume a different managerial approach, valuing change, favoring the learning of the participants in the educational process and the teacher involvement, with time and space reorganization to promote learning, infrastructural change, continued teacher education, and investment in conditions that favor the work of teachers;
- There's a shift from instruction and knowledge transmission to learning where learners (teachers and students) find meaning in collected information, critically reconstruct this information, and produce significant knowledge. Learning is taken to not only mean intellectual development, but also the development of skills, attitudes, and values;
- The curriculum is seen as a series of learning opportunities that, if considered necessary in a given context and period of time, the educational institution should ensure and organize. This conception is opposed to considering the curriculum as a simple technical tool and, as such, deprived of social and cultural intentionality. The curriculum is seen as a project that is planned, implemented and evaluated by the active participation of both teachers and students;
- Students with planned, concrete activities that prepare them and demand their participation, do actual work and research, and debate with other students and teachers, in individual and collective production of knowledge. This is practical work that integrates the study of theories, skills, attitudes and values that deserve development. It also integrates different fields of knowledge;
- The teacher (a learner her/himself) occupies a new role in the learning process: that of a transforming, critic and emancipating intellectual, a planner of learning situations; a mediator and motivator of their students' learning, working in teams and in partnerships with students and other faculty, overcoming the individualism and isolation that prevails in teaching.

2. Some challenges to be faced regarding higher education teachers' preparation

Some foci, related to the characteristics and roles of the teacher educator and the university teacher in general, emerge and must be faced by educational public policies related

to varied processes of professional education in universities (FERENC, 2005; RIBEIRO, 2005; DARLING-HAMMOND, L.; BRANSFORD, J. 2005; MIZUKAMI et al., 2003; REALI et al. 2007, MASETTO et al., 1998; MASETTO et al. 2004; RODRIGUES, 2004; ZEICHNER, K., NOFFKE, S.E, 2001, TORRES, 1999, for instance). All foci contemplate the urgency to overcome a usual transmission-reception model of teaching.

a) **The importance of a solid and flexible knowledge base for teaching** (Shulman, 1987), encompassing knowledge related to specific content areas, knowledge of formative school contexts, pedagogical knowledge, knowledge of *learning to teach processes*, knowledge of educational public policies and of their underlying theories, and content pedagogical knowledge. This category also includes the importance of the adequate comprehension and use of the technologies of communication, and of information dealing with new ways of learning and construction of knowledge.

Such solid and flexible knowledge base is invaluable for the professor to develop his or her functions, “learning to teach” in a variety of ways and to different types of students and educational contexts. Practice by itself is not enough to provide specific content domain in a satisfactory degree. It does not offer, in systematized and articulate fashion, the knowledge base teachers need in order to be able to teach and continue his or her process of learning and professional development. This knowledge base should involve specific content knowledge, here understood as the main axis of the knowledge base for teaching and the promotion of rich and flexible pedagogical reasoning processes (Shulman, 1987). The richer this knowledge base, the richer the processes of teaching and learning promoted by the university teacher will potentially be.

The knowledge base here considered enables the comprehension of the interrelations between the contents of different curriculum components and the contexts of learning of students and teachers, as well as the peculiarities of each area of knowledge and contexts. It must necessarily **involve the knowledge of learning to teach processes**, in ways to promote them adequately in different contexts. It also implies recognizing and putting to test teachers’ and future teachers’ personal theories and conceptions, either to reaffirm or alter those theories and conceptions. Another component of this knowledge base should be the knowledge of professional practice as an axis of formative processes. That implies knowledge about the promotion of learning to teach processes. In addition, considering the contributions of Shulman (1987), such a base must also contemplate the specificities of general pedagogical content, and the contributions and preconceptions of the students.

b) **The need to construct and promote strategies for professional development which are not invasive** and which highlight the beliefs, values and personal theories of university teachers. Among the strategies present at the studies we have analyzed, Problem Based Learning and Teaching Case Studies were especially well succeeded, and appear to be tools that overcome the limitations of the transmission-reception model in the promotion and investigation of processes of learning.

Teaching cases, particularly, seem to be a powerful strategy for both the study of the teachers’ teacher educators’ referential frameworks, and the construction and promotion of pedagogical content knowledge (MIZUKAMI, 2002). The use of teaching cases (drawn from literature or the very writing of the cases) may allow the development of reflexive processes in different moments and levels, as well as the analysis of the conceptions that are brought to surface and the comprehension of specific learning in face of concrete situations of teaching and learning, the creation of situations that provide for processes of reflection-on-action, with narratives that demonstrate beliefs, values and knowledge, and, finally, help establish different types of relation between theory and practice.

Shulman (1996) considers case based learning in teacher education as a response to two central problems: *learning through experience* and *the building of bridges between theory and practice*. According to Shulman, to require teachers and future teachers to reflect over their own practice is a correct approach, though arduously demanding. The use of teaching cases as units of analysis would help in the organization of the reflection processes. Shulman likewise believes that a significant part of teachers' formation is generic, consisting of general principles and maxims that can be broadly applied to a diversity of situations. Teaching cases would consist, in this process, instances in which the specificities of teaching – subject matter and situation – could be evaluated. Another issue pointed out by Shulman is the fact that teaching is an uncertain and unpredictable activity, meaning that it is difficult to make it rigidly conform to a formal theory, even though it is still responsible for both the insights and preconceptions/misconceptions of students. Cases would have a function to fulfill whenever reasoning, discourse and professional memory would have to be dealt with. They require analyses, attributions of meaning, and the construction of answers, improvised or otherwise, to the problems they propose.

We do not learn from experience; we learn by thinking about our experience. A case takes the raw material or first-order experience and renders it narratively into a second-order experience. A case is the re-collected, re-told, re-experienced and re-reflected version of a direct experience. The process of remembering, retelling, reliving and reflecting is the process of learning from experience. (SHULMAN, 1996, p.208).

It is in this context that Shulman contemplates the role of theory. He considers experience translated into narrative, brought together in a case, as a means to engage in an act of theory.

The transformation of an experience into a narrative is itself an act of selection and conceptualization. In converting a first-order experience into a second-order experience through narrative, an author has chosen to frame an experience in a particular way, has placed that experience in more general terms. When the reader of a case connects that narrative to his or her own experiences, a second kind of selection has taken place. [...] It appears to be a characteristic of our species that stories explicitly breed yet other stories and, implicitly, the categories of analysis that connect stories to one another conceptually. Even in the concrete act of narrative, underlying theoretical categories emerge and often become explicit.

There are four processes at work in learning from the writing and contemplation of cases. These are *enactment*, *narration*, *connection* (or recounting) and *abstraction*. Stories begin in the raw experience itself, are transformed into cases through narration, become part of a network of narratives through connections with other cases and both enrich and are enriched by theory when they are analyzed, interpreted and/or classified in the teachers' conversations. (SHULMAN, 1996, p. 209)

For Shulman (1996), the plot of each case must be developed around a plan, an incomplete intervention that has room for surprises that interrupt the expected scenarios and provide situations in which the teacher may reexamine, rebuild, revise or reflect over his or her original plans, modifying them in some way. The essence of the case resides in the problem it carries, in the surprise element or failure experienced. It is precisely for that reason that it is considered educational.

The practice of teaching, on the narrative view, is seen as constructed by teachers as they tell and live stories in their classrooms. Teaching stories are in part personal stories shaped by the knowledge, values, feelings, and purposes of the individual teacher. They are also collective stories shaped by the traditions of schooling in the setting where the teacher works, the social, cultural, and historical context within which the stories are lived out, and the rules and patterns of discourse that make particular forms of storytelling possible. (ELBAZ-LUWISCH, 2002, p.405).

c) **The importance of the construction of communities of learning** involving the faculty. One of the greatest challenges involving universities refers to the construction and

maintenance of a community of learning in the workplace, which provide the space for the construction of relations between formative processes experienced during initial formation and professional practice.

Even though they consider elementary, middle and high schools, the analyses provided by Grossman, Wineburg & Woolworth (2000, 2001) offer invaluable contributions for higher learning institutions. From the recognition that there are many terms in literature related to such communities – communities of learning, communities of discourse, communities of learners, communities of teachers, school communities, communities of practice –, the authors (2001) point out that these terms are used in relation to several theoretical frameworks seeking to answer how a community should work in educational environments. There are five common themes in theories related to communities: interdependence, interaction/participation, shared interests, concerns regarding the views of individuals and minorities, and significant relationships between the participants. According to Grossman, Wineburg & Woolworth (2000) little is known because:

[...] studies of community typically examine already-formed groups. Consequently, we have little sense of how teachers forge the bonds of community, struggle to maintain them, work through the inevitable conflicts of social relationships, and form the structures to sustain relationships over time. Without understanding such processes, we have little to guide us as we try to create community (*whatever* it may mean!) in settings where it doesn't already exist. (p. 6).

Grossman, Wineburg & Wooworth (2001) thus systematized the trajectory followed by a group in its process of transition to a community of teachers. Such a community, according to the authors, must be local, implying face-to-face interaction, dialogue, and trust as main ingredients for the construction of group cohesiveness. These communities are not easily or rapidly formed, demanding time so that people build a history together, and an actual “community of memory” in which public discussion by the members of the constitutional narratives of the group takes place.

A community of teachers may, in this way, be understood as a type of professional community that considers the multiple contexts in which teachers work. For the aforementioned authors, a professional community is also strongly connected to its students:

[...] for a group of teachers to emerge as a professional community, the well being of students must be a central consideration. According to this criterion for professional community, not all gatherings of teachers, even those in which teachers offer each other fellowship and support, constitute professional community. (GROSSMAN, WINEBURG & WOOLWORTH, 2000, p. 13).

If we are to follow Grossman, Wineburg & Woolworth, not all groupings of teachers constitute a professional community. Two basic elements should be considered in a community of teachers: the improvement of professional practice and the belief that teachers are also students in their areas throughout their life. As such, they must grow in knowledge of the educational process, and be up to date in the production of knowledge in their specific areas. These two aspects related to the process of professional development of teachers, one focusing in student learning, and the other on the teacher as a student of his or her specific area, do not always coexist harmoniously.

The challenge in creating intellectual community for teachers in the workplace is to heed both aims simultaneously: to maintain a focus on students while also creating a structure for teachers to engage as learners with the subject matters they teach. This latter goal, in contrast to the former, has no school based tradition on which to build. Few examples exist of teachers successfully maintaining these dual agendas in the hurried context of the urban high school. (GROSSMAN, WINEBURG & WOOLWORTH, 2000, p. 14).

The latter goal, in contrast with the first, is not traditionally backed within schools, and is consequently hard to achieve.

Considering the collective and individual dimensions of learning, the authors defend that a professional community of teachers requires that its participants engage in intellectual and social activities, with new forms of thinking and reasoning collectively as a goal, as well as new ways to interact with people. In the context of higher learning, there are fewer opportunities to interact with peers, with the exception of sporadic, topical exchanges, which do not involve regular experimentation, during prolonged time, of teaching and learning situations to be shared with other people in the workplace.

In the development of communities of teachers it is important to consider two kinds of knowledge distribution. The first one refers to the fact that some people know what others do not, and that collective knowledge surpasses individual knowledge. The second one refers to different ways of knowing. Here, what is distributed among participants are ways of reading, raising questions, making judgments, arguing, establishing exemplifications, and representing knowledge.

The tasks of a community in the workplace demand new forms of social interaction. The characteristics mentioned so far are mandatory if the goal to be achieved is for the students of a classroom to also establish a community of learners.

d) **The consideration of 'inquiry as stance'** (COCHRAN-SMITH, 2003) as the axis of the professional development of the teacher educators and the university teacher, that is, as a continuous and systematic investigation process in which all the participants question their assumptions and those of their peers, and construct local and public knowledge that is pertinent and adequate to contexts of constant change.

One expects the higher education teacher to create formative situations that allow the construction of inquiry as stance related to specific and general educational processes. The teacher educator's formative processes should, under this point of view, be products of shared conceptions related to those very processes, viewed both in narrow and broad fashion, meaning that the process as a whole will be considered, in space and time limits, and local and amplified contexts.

The teacher educator's inquiry as stance is here considered as a formative tool *par excellence* (COCHRAN-SMITH, 2003), involving the consideration of suppositions and values, professional knowledge and practice, school and higher education institutional contexts, and the own learning of teacher educators and teachers and future teachers.

Rather than inquiry as a project or an activity in teacher education, inquiry as stance is an intellectual perspective – a way of questioning, making sense of, and connecting one's day-to-day work to the work of the others and to larger social, historical, cultural, and political contexts (Cochran-Smith & Lytle, 1999, in COCHRAN-SMITH, 2003, p. 21)

Inquiry as stance is distinct from the more common notion of inquiry as time-bounded project or activity within a teacher education course or professional development workshop. Taking an inquiry stance means teachers and student teachers working within inquiry communities to generate local knowledge, envision and theorize their practice, and interpret and interrogate the theory and research of others. Fundamental to this notion is the idea that the work of inquiry communities is both social and political – that is, it involves making problematic the current arrangements of schooling; the ways knowledge is constructed, evaluated and used; and teachers' individual and collective roles in bringing about change (COCHRAN-SMITH & LYTLE, 1999, p.289)

Such an investigative attitude asks for a constant analysis of formative processes (COCHRAN-SMITH, 2003), that is possible only if:

- i) Different theories and educational proposals are known, in ways that a deeper and broader comprehension of the educational phenomenon and the teaching and learning process is acquired.
- ii) Both objective and subjective, succinct descriptions of pedagogical practices in their multiple determinants and variables are achievable.
- iii) Constant movement theory-practice-theory takes place.
- iv) Each community's member has opportunities to become a [...] *learner, a researcher, a seeker of new insights, and a poser of questions for which no one in the group already has the answers* (p. 23), and where [...] *teacher educators educate themselves and each other by regarding the work of others as generative but open to interrogation* (p. 23).
- v) Local knowledge is generated. The construction of local knowledge is conceived as [...] a process of building, interrogating, elaborating, and critiquing conceptual frameworks that link action and problem-posing to the immediate context as well as to larger social, cultural, and political issues. The local knowledge we have conceptualized is not the same as 'practical knowledge', which others have described as how, when and where practitioners do things (Fenstermacher, 1994; Richardson, 1999). Rather the idea of local knowledge highlights the processes of knowledge construction as they are integrated with daily life in schools, programs, and classrooms and also connected to larger social and political agendas. (COCHRAN-SMITH, 2003, p. 24).
- vi) It is manageable to work with certainties, uncertainties, dilemmas, problems, and the recognition that investigation is born from and at the same time generates issues that defy the system and involve learning and *unlearning*. (COCHRAN-SMITH, 2003, op. cit.)

The four challenges here considered are highly promising in terms of modifying the current framework of teaching in colleges and universities, in ways to foster the development of educational environments which engage the students – the future professionals –, in a constructive relation with their own profession and the specific knowledge related to it, as well as their continuous professional development throughout life.

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