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***Research-based teacher education and reflective practice***

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The first two principles in the summary of the “*Common Principles for Teacher Competences and Qualifications*”, presented at the *Communication from the Commission to the Council and the European Parliament* – “Improving the Quality of Teacher Education” – clearly focus on the question that is the concern of this paper and what we consider to be core to the issue of the quality of teacher performance and respective education. These principles are related to (1) the higher level of teacher education and the corresponding expectation of greater knowledge levels, and (2) teachers’ status as *lifelong learners*, bound by the professional nature of their work to constantly update and build on knowledge.

As such, certain areas of analysis that are geared towards the creation of more efficient education strategies and policies are relevant to achieve this goal – some that come from an analysis of the status quo of teacher activity and education, as in the EU (and Portugal in particular, the focus of this analysis), and others that point to future desired improvements.

As a starting point for this analysis, and based on the considerable research available and systematised in recent revisions (Roldão, 2004; Roldão et al., 2006; Estrela et al. 2002, Estrela et al. 2004), it is worth highlighting that, although there is variation from country to country, in the majority of them – and on the level of dominant professional and institutional culture - there is some way to go before the four common principles in the abovementioned document are achieved. This is particularly true in relation to the two that we have singled out for this analysis. It is important to be aware that the action that is geared towards the effective improvement of teacher performance and, consequently, the focus of teacher education investment, refers to a process that goes some way towards a break from the conceptual paradigm of teaching rather than a simple improvement in resources, training and its organisation.

The areas of analysis developed here are organised in the following way:

- 1 The social representation of teaching and its semi-professional status – the basis of the association of teaching with an activity of a practical, technical or moral nature, the historic importance of the civil service to teachers, and the multi-referential idealisation/ideologisation of teaching;
- 2 The weakness of the specific professional knowledge of teachers, and how it is produced, within the teaching communities themselves, in contrast with the same group's high level of academic qualification;
- 3 The weakness of teacher education – initial and throughout a teacher's career – in relation to equipping a teacher with professional knowledge and the instruments to create and use it;
- 4 Teacher education development policy with potential for improvement.

### **The representation of teaching – what does being a teacher mean?**

Asking this question may seem a little out of place, in so far as teaching has been the object of a number of pre-suppositions that, according to the supposed evidence, help to make its profile diffuse and emphasise common sense understandings that have become deep-rooted throughout the historic process of the profession's affirmation and development. On the other hand, educational theorisation has brought contradictory views within the reference framework of teachers themselves that, when they are not critically deconstructed, lead to a less meaningful and more diffuse explanation of the nature of the teaching role.

Thus, on one hand, the most basic notion of the teacher as *someone who teaches something to others* is affected by the archaic idea of *teaching as presenting / transmitting summaries of formalised knowledge*, and on the other hand by *subduing the act of teaching in view of theoretical ideas that place the learning of the other at the centre of the process*. In conceptual terms, these perspectives have caused a dichotomy of interpretation in teaching culture, emphasising either the supremacy of the practice of presentation teaching or the extinction of teacher action in favour of a supposed greater emphasis upon student activity. In fact, it seems that this is fundamentally about re-thinking the notion of teaching itself, questioning the previous concepts that underlie it. As we have examined elsewhere, the *distinction* (Reis Monteiro, 2000) in the teacher's role lies in teaching, but teaching perceived as a transitive activity that translates into the competence of *making others learn*<sup>1</sup>. However, such an idea does not mean a reduction in the role of the teacher, supposedly “obliged” to make learning the responsibility of the student, emphasising the social and cultural differences from the very beginning; on the contrary, it requires a much more solid and

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<sup>1</sup> Roldão, 2005; 2006.

differentiated performance, contextual and based on a more complex knowledge – in relation to the material taught, the learner's process, the cultural meanings associated with the content of the curriculum, the context of the students, schools and teachers, the relevance and justification of the work strategies being developed and their permanent regulation.

It is in light of this clarification of the *teaching* function, a justifying and socially legitimising function of the existence of a group of players that we call teachers, which places the issue of the specificity of teacher knowledge and its relationship to the issues of research in teaching and teacher education, associated with so-called “reflective practice”<sup>2</sup>, into context.

### **Teachers – what is their distinguishing professional knowledge?**

As previously clarified here, the specific and distinctive knowledge required to teach is eminently complex and composite<sup>3</sup> and cannot be restricted to the command of the content knowledge of the various necessary subject areas, nor is it limited to the often cited and lauded “practical know-how” – although it incorporates and demands both:

In the case of teachers, both their role and their professional knowledge have been influenced, on one hand, by a tendency for the dissemination of a wide-ranging humanistic discourse, which prevents a greater degree of specificity or knowledge; on the other hand, and to the other extreme, it has been influenced by a tendency for a functional specification associated with the reduction of teaching to practical activities, where knowledge is minimal and reflection dispensable, becoming a mere technical activity. None of these tendencies constitutes a credible generator of professional development and affirmation. For this reason we previously stated elsewhere that professional knowledge is the “weakest link” of the teaching profession (Roldão, 2005a), the one where investment is important as a lever that can reverse the discredit, the despondency and scant recognition that are repeatedly identified in research in relation to teachers and professional development (Roldão, 2005b).

Roldão, 2007: 97

Returning to the *Common Principles for Teacher Competences and Qualifications*, what distinguishes the *professional knowledge* that qualifies teachers to teach is based on the specificity of *teaching know-how* and consequently informs all teacher education policies and practices – more accurately designated as the

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<sup>2</sup> A banalisation of this expression has made it less meaningful. Its theoretical origin has almost always been diminished by **common sense** interpretations, sustained in the epistemology of practice - as theorised by Schön, Zeichner, Alarcão e Sá-Chaves. It constitutes another example of the fragility of teachers' knowledge, who appropriate complex theoretical concepts in a **common sense** fashion due to a lack of categories and practice of knowledge production within the act of teaching.

<sup>3</sup> See Roldão, 2007. The frequent reference to this author's text throughout this communication is due to the fact that it has been recently produced and published in the *Revista Brasileira de Educação* magazine, immediately after the communication at the annual meeting of *Associação Nacional de Pós-Graduação e Pesquisa em Educação* (National Association for Post-graduate study and Research in Education), which focussed on this theme.

processes of their professional development. That specificity comes from the support that this knowledge offers for (1) adequate teaching performance, (2) the capability to think and theorise that action in order to (3) master the instruments of its effective and permanent improvement. Thus, it is important to deconstruct the idea of the teacher as solely a “practitioner”<sup>4</sup>, as well as the teacher as “presenter” of formalised knowledge. The association of teaching with the idea of a practical activity, in the current interpretation of teachers and future teachers expressed in innumerable pieces of revised research (Roldão, 2004, Estrela et al, 2002) leads to a professional culture that has shown itself to be resistant to the theorisation of the act of teaching, to its critical deconstruction and consequently to the fragility of the ability to reorient it, in the sense of achieving the learning to be promoted in a diversity of “others” that make up the population served by school, today and in the foreseeable future.<sup>5</sup>

The specific knowledge required to teach implies a collection of characterisers, which we have deconstructed in a recent text (Roldão, 2007), and highlight here: (1) the composite and integrative nature used in *situational use* and (2) the *analytical component*, associated with *reflective capacity* in relation to the action taken.

The *heterogeneous* nature of professional teaching knowledge comes from its complexity and the function it supports, not being synonymous with a *collection* of separate elements linked to an additive logic, as proposed in a number of teacher training curricula:

This is not about knowledge made up of a number of valences combined by additive logic, but rather by *conceptually incorporated* reasoning – which also distinguishes it from the idea of simple integration. In high quality practice, we see that it is not enough to integrate various types of knowledge, but for them to be *transformed*, for each one of them to become a constituent part of the others. For example, didactic knowledge of content will include, *by modifying it*, content knowledge. For example, it is not enough for the teacher to know pedagogic or didactic theories and apply them to a given learning item for there to be the linking of two elements in a concrete teaching situation. One has to be capable of transforming scientific content and pedagogical-didactic content into a *transformative action*, informed by aggregate knowledge, before a teaching situation – by the mutual appropriation of the types of knowledge involved and not only by addition or mere application. Roldão, 2007: 100.

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<sup>4</sup> The idea of “practical” is very visible in revised research, associating the subjects of numerous revised studies, consistently, in the idea of teaching to the organising and sequencing of activities (presentation or work on exercises) and controlling the behaviour of class groups, connected with the idea of helping, supporting and monitoring. Teachers rarely put themselves forward as ones that analyse, conceptualise, reformulate action as a consequence of analysis, i.e. informed and questioning theorisation of practice, generator of new and well-grounded knowledge, considering that professional socialisation is largely neglectful of this aspect.

<sup>5</sup> The idea of *teaching as presentation of knowledge* in a largely uniform format goes back to the early days of school **which**, for a long time **e**, only served select and largely homogenous social classes (except in the case of basic learning). The idea of the act of *teaching as a practical activity* induces common sense empiricism that leads teachers to a non-theorisation of their acts and to greater passivity towards the work they do.

From the number of elements that we considered “specificity generators”<sup>6</sup> of professional teaching knowledge, in the abovementioned text, in this paper we would highlight analytical capacity, due to its direct ties to an analysis of current areas of weakness, and the conceptual errors that involve the clarification of the specific nature of that knowledge, associated with certain idealisations that come from spontaneist and technical views of teaching. From our perspective, analytical capacity is core to the values that should be emphasised in teacher training to guarantee quality improvement and the affirmation of more solid professionalism of future and current teachers:

Another element in this analysis that we consider to be a “specificity generator” of professional knowledge is *analytical analysis*, an aspect that the act of reflective practice emphasises. The permanent use of analytical capacity is directly contrary to routine teaching, although this can be based on the technical or even artistic knowledge so often cited to legitimate day-to-day teaching knowledge. It is not the technical expertise of the classroom or pure creative inspiration that makes the specificity of professional teaching knowledge. However, professional knowledge (of teachers, doctors, among others) doubtlessly demands the thorough command of considerable *technical knowledge* (know-how) and command of an *improvisatory and creative* component in relation to the “case” and the “situation” that we can call “artistic”. But this only becomes *professional* knowledge when, and if, the *conceptualising power of a sustained analysis* is applied to formalised and/or experiential knowledge, which allows sense to be given and identified, taking full advantage of or increasing the potential for action in the situation that the professional is found.

Roldão, *ibidem*.

To this end, it is important to return to two complementary ideas regarding professional teaching knowledge: the perspective of Lee Shulman and the theorisation of Donald Schön. The first of these authors contributes to the clarification of the nature of teaching knowledge by the deconstruction of the elements and types of knowledge that it is made up of<sup>7</sup>. More recently the theorisation of Lee Shulman, sustained by research projects led by himself, has emphasised another processual aspect of professional knowledge – its construction within the teaching community, if and when it is instituted within a community of “learning teachers”<sup>8</sup>, based on the questioning of action and the joint construction of new knowledge by teachers coming from the subjects where they have the greatest expertise.

Donald Schön’s contribution to the theorisation of professional knowledge in general – not only in the case of teachers – clarifies the impossibility of disassociating professional knowledge from the

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<sup>6</sup> The five “specificity generator” elements of teachers’ professional knowledge, analysed by Roldão (2007: 100-101), are: *composite nature, analytical capacity, mobilising and questioning nature, meta-analysis, communicability and circulation*.

<sup>7</sup> Note that Shulman’s theorisation regarding teachers’ knowledge is based on the link between various types of knowledge: curriculum knowledge, knowledge of learner and their characteristics, pedagogical content knowledge, content knowledge.

<sup>8</sup> We refer to the “Fostering a Community of Teachers as Learners” project that Lee Shulman coordinated with Judy Shulman. Ver Shulman & Shulman, 2004,

professional practice it corresponds to. Essentially Schön abandons the applicationist idea that is often associated with the expression “theory/practice relationship”– perceiving theoretical knowledge as prior and later “applicable” to practice - to highlight practice as a key element of professional knowledge production itself through reflection/construction mechanisms that are associated with the singular and unpredictable nature of professional behaviour and the issues that emerge from it.

As we have contended above, this is not about recapturing the idea of the teacher as practitioner and teaching as an activity that is practical by nature, but rather that of substituting this with the recognition of the core nature of professional practice within its real context as something that nourishes, generates and integrates professional know-how itself. This is supported by previously acquired formalised knowledge, which is constantly updated, reconstructed and expanded in view of the different situations faced (“cases” in medical terms), as well as the analytical-investigative questioning (reflective, using Schön’s terminology) of the circumstances, problems, successes and failures of the action taken.

The *reflexivity* and the teacher as *reflexive practitioner* has been the object of a banalisation in the lexicon of administration and schools that often de-characterises the key idea of this approach – the theorisation and rigorous reason behind professional action coming from contextualised questioning that only practice gives. Therefore, it is important to make a clear distinction between the simplifying sense that is often associated with the common sense notion of reflective practice and the theoretical basis of reflexivity within the epistemology of practice. In the common sense meaning – which the term *reflection*, given its common and current use, helps consolidate – reflection would be synonymous with the whole spontaneous act of commentary/description/observation/evaluation of something that was done. Such an approach, often mentioned by the subjects of research to describe teachers’ informal conversations about students and classes and not irrelevant in the field of teachers’ interests and concerns, in the great majority of research cases studied is limited to a non-analytical, non-questioning and descriptive approach, which does not make the production of knowledge about a certain situation viable. For reflexivity to imply the construction of sustained knowledge, it will have to translate into analytical-investigative devices geared towards the formulation of the explanatory hypotheses that they are founded upon and their subsequent verification. Such reflective practice presupposes the analysis and the discussion between peers in view of pedagogical-didactic situations experienced and the production of interpretations that are likely to be re-applied and compared in practice, in line with the Recommendations that are the main concern of this Conference.

“Reflective practice” therefore requires: (1) the use of previous theoretical and practical knowledge, (2) the problematical theorisation of the practical situation in question and (3) the production of knowledge that can be communicated to others and mobilised in other situations.

Only this type of reflexivity can guarantee a break with the unproductive circularity of the countless discussions and exchanges of opinion in the day-to-day professional life of teachers, who are desperately incapable of making qualitative leaps in their practice, despite their investment, their interest, their commitment and genuine efforts. However, if the production of sustained knowledge is absent, the attempts at improvements will tend to be incidental, uncertain and probably unproductive and causes of frustration. From this perspective, we prefer the idea of “analytical and practice researcher teaching professional” to the expression of “reflective practitioner”<sup>9</sup>.

In the 70’s and 80’s, Lawrence Stenhouse produced an important conceptualisation for the study of teaching duties and professionalism and for teacher training, focussed on the idea of the *teacher as researcher*; an idea that emphasises the analytical-theorising aspects that we have seen defended here. Isabel Alarcão, in a text written in 2001 regarding this particular training issue, also focuses on this author and follows the same form of thinking,<sup>10</sup> underlining its current relevance in view of teachers’ growing need to make their mark as increasingly autonomous professionals and linking the analysis with the possibilities of working investigative competencies into the curriculum – and therefore reflexive and theorising – on a training level.

Stenhouse states (1975, quot. Alarcão, 2001a: 23): “The improvement of teaching is a process of development (...), with this statement I wish to express: first, that this improvement is not simply achieved by desire but by honing the competence of teaching, based on considerable reflection; and, secondly, that this improvement of the teaching competence is normally achieved by the gradual elimination of negative aspects via the systematic study of the activity of teaching itself (...). Curriculum development and research on teaching should supply the basis for this professionalism.” The discussion of the pertinence of the inclusion of research aspects in the initial education curricula and training practice that take place in schools is in open debate. In Brazil, a number of research projects (Lüdke, 2006) have highlighted the need to ensure research education for all teachers and the incentive of this type of practice within teaching life in schools, with difficult areas like the differences

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<sup>9</sup> In fact, the semantic connotations of the English expression “practitioner” do not exactly coincide with the Portuguese word “prático”. The “practitioner” is one who practices, one who does a particular thing, which covers a broad number of possibilities that range from concrete activities to the practice of science or research. The term “prático”, in Portuguese, accentuates the aspect of a practical activity rather than one of a theoretical or intellectual nature; for example a researcher or scientist would not normally be called a “prático”.

<sup>10</sup> Alarcão reminds us (2001: 21) that John Dewey, pioneer of that view of the reflexive and investigative teacher, considered teachers as “students of teaching”.

and/or similarities between professionalised, formal research, performed by university researchers as an essential part of their institutional mission, and the research performed by teachers in their own context, more involved in action but also disadvantaged in terms of time and conditions.

**How does one build professional teaching knowledge? – education at the root of the construction of teachers' vision and knowledge.**

The training process is therefore seen as permanently epistemic and praxiological: *epistemic* because this is essentially about the construction of a certain type of knowledge with its own characteristics, and *praxiological* because that knowledge develops upon and by the informed reflection upon practice that is subjected to constant analysis and a generator of new knowledge producing questions if, and to the extent that, the resolution of the latter is grounded on and mobilises formal and experiential knowledge and scientific processes.

The reality and the culture *en place* of schools and teachers, as portrayed by research, as well as through personal experience and knowledge for many of us, is far from being characterised by investment in professional knowledge as analysed here or by consistent practices of professional knowledge production throughout professional life with resulting improvements in teaching practice (Roldão et al, 2000). It would be unwise and superficial, not to mention unfair, to imagine that such a fact can be ascribed to teachers as individuals. One has to understand that this teaching and school culture exists in the course of complex historical and social processes and is sustained by a socialisation that persistently replicates it, largely supported by the logic of training and the organisational and cultural characteristics of educational systems, naturally with the exception of specific aspects in different countries.

The first characteristic of teacher education in Portugal, one that induces this void of sustained professional knowledge production, is associated with the same organisation of the education sub-systems – *inicial* (initial) and *contínua* (in-service), as they are called in Portugal. In this respect, we would like to point out some of the aspects that we consider critical in the case of Portugal:

- 1 - the incommunicability of these two sub-systems;
- 2 – the lack of effective professional induction, despite being foreseen in the relevant legislation;
- 3 - the predominance of the academic school model in initial education, which segments the theoretical and practical dimension and tends to undervalue the latter;
- 4 - the tendency to locate and attribute different responsibilities to the theoretical components (training institutions, higher education teaching staff) and the practical components (teaching



practice schools and their teaching staff) of initial education, often characterised by fragile integration mechanisms.<sup>11</sup>

5 – further training taking place off school premises<sup>12</sup>, resulting in the school not taking responsibility for its teachers' training;

6 – the lack of regulation and accountability mechanisms for training provided – by training institutions and centres – and their contribution to the improvement of practice – by schools and teachers.

There has been a number of working context training initiatives associated with research, including the IRA Project – *Investigação/Reflexão/Ação* (Research/Reflection/Action) – which was developed, from a research-based training methodology, coordinated by a team from the Lisbon Psychology and Education Sciences Faculty in the 90's. Also the re-examination of recent research and other current projects point to a growing interest in the area (Araújo and Sá, Canha, and Alarcão, 2002; Figueiredo and Roldão, 2006). At the level of initial education, the majority of programmes have a research component that involves one or both of the scenarios identified by Alarcão (2001a): disciplines formally dedicated to an introduction to research or the research component included in the various parts of the curriculum. The issue of the most appropriate form of curriculum organisation for this area is complex and is even more so if it remains an outside fringe to professional performance, often presented as “practice” in the narrow sense that we have criticised above.

A vision of the teacher as a fully-fledged professional, as someone in possession of specific professional knowledge that socially legitimates the fulfilment of their role (Rodrigues, 1997, Giméno Sacristán, 1995), and in particular as a *teaching professional* (as in our understanding of the act of teaching as a specialisation in *knowing how to make someone learn something from another*- Roldão, 2005), requires the re-examination of the reasoning behind initial education programmes and how they are coordinated with induction-period education and throughout a teacher's professional life. The area of continuous

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<sup>11</sup> We refer to the predominant trends. It is important to underline that certain teacher education institutions have been involved in integration processes that focus on very consistent and successful professional practice, of which we highlight (due to direct knowledge and research produced), *Instituto de Estudos da Criança* (Child Studies Institute) at *Universidade do Minho*, *Departamentos de Ciências da Educação e de Didácticas e Tecnologia Educativa* (the Education Science and the Didactics and Educational Technology Departments) at *Universidade de Aveiro* and the *Escola Superior de Educação* (Teacher Education College) at *Instituto Politécnico de Santarém*. A pertinent analysis of the processes of initial teacher education in 1<sup>st</sup> cycle compulsory education and the dynamics of change/resistance and at *Universidade de Lisboa*, and communications associated with it. See Hamido, 2006 and Hamido et al. 2003.

<sup>12</sup> Created in Portugal at the beginning of the 1990's, the *Centros de Formação de Associações de Escolas* (School Associations Training Centres) are based, at a conceptual level, on the idea of establishing themselves as the *loci* of the training organisation by the associated schools in view of the needs and specific projects within their contexts. However, the bureaucratic tradition and its resulting limitations, alongside a school culture that does not include responsibility for the training of its people in its history and culture, made the CFAE largely detached from the reality of schools and distribution centres for training menus (See Roldão et al. 2000)

training in context will have to be examined and developed within schools, as learner communities and reflective organisations (Alarcão, 2001) that define and sustain their own development and the professional development of their teaching staff (supported by partnerships and the concrete action of training and educational research institutions.)

### **Teacher training proposals**

#### **- Pertinence of *Recommendation on Teacher Training Quality for EU Member States' policy***

Taking the notion of professional teaching knowledge based on the teaching role and competence as a reference, and in light of the *Recommendation on Teacher Education Quality for EU Member States' policy*, it seems possible to identify certain guidelines for improving the quality of teacher education and the resulting impact upon improving students' learning:

#### **1. *The assumption of teacher education as a continuous development process on the path of a teaching professional***

This perspective presupposes a break from the currently dominant logic in two areas: on one hand, via the clear assumption of teaching professionalism and recognition of the current deficit in this area as a result of the traditional connection of the teaching profession to the civil service, with teachers being contracted centrally by the administration, in the case of Portugal; on the other hand, via conceptualising the training process as a whole, establishing the necessary organisational mechanisms to that end, for example: the accountability of the same institutions for the collected training programme and for supporting other training projects (universities and other higher education and training institutions, with their own training projects but ones regulated by a common national/European framework); the assessment of the training provided or supported having that coordination between initial education, induction and training throughout a teacher's working life as one of the efficiency criteria.

## ***2. The continued establishment of training partnerships between training institutions and schools***

From this prospective view, periods of supervised practice in initial education will have to become a training partnership with schools and teachers that receive future teachers, creating training networks with the training institution, whose resources can constitute an important resource for those schools' training projects. For these partnerships to be effective, certain political-organisational mechanisms have to be in place, such as accounting for the training done by higher education teachers and researchers in schools, the guarantee of greater stability in terms of the teaching staff in schools, the inclusion of this support in the field of education in the mission of universities and colleges that are involved in teacher education, with this whole process being sustained by formal contractual projects and their respective funding, as well as in the regulating evaluation of results and procedures.

## ***3. Establishing teacher education as one of the organising elements of schools and their projects***

In this area, it is important to take into consideration that Portugal and other EU countries with a more centralist administration do not have this tradition. The measures that encourage it cannot focus on standardisation, nor can it be done through the uniformity of procedures but rather on regulation and encouraging diversified and justified training practices whose positive effect has beneficial consequences on the work done in schools. Making training in and by schools compulsory and a regular feature of their activities (carried out to a greater or lesser degree with support from higher education institutions and other qualified bodies) will be necessary but insufficient. It is important that the schools that provide the most relevant, constant and effective training to improve the work they do be rewarded. It seems to us that encouraging inter-school training, via funding and support, when done in conjunction with the support of institutions that produce specific formalised research and knowledge is likewise important.

## ***4. Establishing the importance of supervised practice, sustained by a consistent theorisation at all times and on all training paths***

As we have seen clearly argued, the questioning and experience of professional practice and its contexts is crucial to the training of any professional. This perspective is one that has been tried out

and researched with success in many situations and should be core to the organisation of any teacher training. This should not mean a reduction in the proportion of scientific content (on the contrary, it seems necessary to consolidate this aspect) nor in the pedagogical-didactic areas that are part of professional knowledge (which also need to be given permanent importance and be subject to improvement and consolidation). What this really means is a re-thinking of training projects including levels of initial education and further-in context training, as part of an overall policy in order to coordinate the appropriation of all knowledge fields with an appropriate mobilisation and utilisation in concrete, supported and supervised teaching situations.

This aspect deals with instituting *supervision* as a regular work mechanism in schools, in multiple forms. There is a void here in the Portuguese system, as it is currently only found in initial education.

### ***5. Establishing investigative practice as an essential component of professional training and action***

As previously mentioned, this issue has been controversial in the academic world of education. However, it seems there is a consensus on the need and value of equipping and enabling teachers with the knowledge and command of conceptual instruments and research techniques that allow them to become effective and rigorous in their analytical reflection of their activity and the resulting knowledge production, as well as making the use of the research produced and the opportunity to produce systematic research available to the teacher.

The increase in the quality of teacher performance and the consolidation of their professionalism status, essential for the improvements in curriculum and social learning that one expects from school, still requires a significant qualitative leap in relation to the teachers with the know-how and its production.

In conclusion, allow me to repeat something I recently wrote elsewhere on this issue and to some degree sum up what I believe should be the quality framework that ensures the training of teachers as *teaching professionals*:

The professional teacher – like the doctor or the engineer in their specific fields – is the one that *teaches* not only because *they know*, but because they *know how to teach*. And *knowing how to teach* is being a specialist of that complex capacity to mediate and transform curriculum content knowledge (which means, to see it acquired in its multiple variants) (...) – via the incorporation of the processes of accessing and using knowledge, via the adjustment to the knowledge of the subject and its context in order to make it correspond with the procedures, so that the alchemy

of appropriation occurs within the learner – a process mediated by the teacher’s solid *scientific knowledge* in all areas and a rigorous *technical-didactic knowledge*, informed by a continuous *meta-analytical* position, an *intellectual questioning* of their own action, a permanent *interpretation* and continuous reenergising. Learning and implementation take place via practice but via informed practice, supported by old and new formal knowledge, researched and discussed with peers and supervisors (...)

How to create that mediation is not a gift, although some do have it; it is not a technique, although it requires an excellent technical-strategic operationalisation; it is not a vocation, although some may feel it as such. It is being a *teaching professional*, legitimated by demanding and complex specific knowledge, of which we seek to clarify certain aspects (Roldão, 2007: 102).

We believe that it is in the education of these teaching professionals, guided by the abovementioned principles and recommendations and established in the awareness of the obstacles that the current administrative, teaching and school cultures pose in view of this orientation, which holds the key – in our opinion – to the improvement of the quality of education, mediated by the solid professional quality of its practitioners.

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