Educational theory informing educational research. Scenarios and lines of flight

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The UIED develops research in educational sciences, with special emphasis on the dynamics and processes of education and training in the changing contexts of contemporary societies.

Índice

Theorizing education: Introducing a conversation

Teresa N. R. Gonçalves, Nair R. Azevedo, Mariana G. Alves

The quest to examine the development of education as a scientific field is not new. The scientific status of education has been discussed for a long time, involving scholars from different disciplinary backgrounds and researchers who operate within different scientific traditions. This ongoing discussion has generated widespread claims, most of the time taking a position on 'unhelpful dichotomies', as stated by Biesta, Allan, and Edwards (2011, p. 226), such as theory *versus* practice, empirical *versus* theoretical, qualitative *versus* quantitative, positivism *versus* post-positivism.

Gert Biesta (2011a) argues that the study of education calls for a stand about the very idea of education as an academic discipline in its own right. Whereas conceiving it as an inter/multidisciplinary field or an autonomous one, both epistemological and methodological questions might arise when conducting educational research, requesting theoretical endeavour side by side with procedural options. As Strand (2007) pointed out, the way we define and study the discipline of education may disclose options about its object of study, its borders, mission and legitimacy.

We have been claiming (Alves & Azevedo, 2010; Alves, Azevedo, & Gonçalves, 2012) that education is a complex, cross-referenced and interdisciplinary field, in which research issues and problems should be addressed within a comprehensive approach, keeping in mind the non-linearity and potential emergence of educational phenomena. This standpoint exposes an ongoing effort to deal with a range of research problems and methodological possibilities, as well as a variety of theoretical stances (Smeyers, 2011).

When working with doctoral students the issues concerning disciplinary status, theory development, and epistemological and methodological questions cannot be overlooked. This has been the case with the doctoral programme that runs within our research group[1]. Supervising students pursuing their own research and assisting them in the development of research capacities has been a core issue for our research unit (Research Unit for Education and Development, UIED, Faculty of Science and Technology, Universidade Nova de Lisboa).

Despite the ever-present concern about theory in standing for the scientific field of education and educational research, we must

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acknowledge that the first major questions doctoral students bring relate to methodological issues and available procedural choices suitable for their research ideas and projects. Our doctoral students come from different disciplinary backgrounds, carrying with them particular scientific frameworks, points of view and methodological attitudes, and they also vary in their abilities to conduct research. Furthermore, our PhD students are mainly practitioners, mostly elementary and secondary teachers, who are not searching for an academic career but who will continue to work in the field of practice in public or private education (Alves & Azevedo, 2010). This situation may account for the prevalence of research interests and problems related to practice, and the little disposition regarding theory and theoretical work.

The attempts to prepare students for research and promote the development of their research skills have primarily emphasized methodology. The case of our research group does not appear to be a single one and others have talked about this trend as one of the main concerns in preparing researches; "they focus almost exclusively on capacity building with regard to the methods and methodologies of research," say Biesta, Allan, and Edwards (2011, p. 225) when talking about several initiatives and programmes concerning researchers' development. Also, Marx et al. (2010) remark that many doctoral programmes in the field of education are light on theory, sustained by routinized method and atheoretical empiricism (Furlong & Lawn, 2011). Recognizing the lack of attention to theory within educational studies and research we eagerly wanted to provide students with some means to overcome it. While taking steps to improve the preparation of PhD students, we argue that studying and discussing (educational) theory contributes to highlighting some issues which will give meaning to the role of theory in educational research.

The diversity of possible understandings of both theory and practice, and of the relationship between the two, is often hidden behind methodological issues and debates when conducting research and training researchers. Accordingly, we agree that there is a need to consider these issues not so much as a theoretical and philosophical reflection on the uses of theory, "but first of all (doing) systematic empirical and historical investigations into the kinds of theory and forms of theorizing that are being used in educational research" (Biesta, Allan, and Edwards, 2011, p. 234). This book intends to contribute to that endeavour.

It represents an attempt to draw together some of the thoughts that challenged us and to systematize some arguments about the role and use of theory in educational research. In Smeyers' (2011, p. 146) words, writing may prevent us from "being absorbed in the chaos of unmediated complexity", as it allowed "time to think" and "some distance in the interest of perspective and justice".

Keeping in mind this challenge, some questions have been guiding our (educational) research and the work developed with our doctoral students: What is educational theory? What is its role in educational research and within the training of researchers in education? How do the different traditions in theorizing education enable the previous questions to be answered? These issues worked as organizing principles of this book. The different contributions here presented express diverse attempts to deal with these matters within different traditions in theorizing education. This book prompts a conversation between them, privileging southern European voices.

The first voice, however, was an inspiring voice. Gert Biesta's work about the possibility of autonomous theorizing in educational research and about the different traditions in theorizing education set the tone for engaging in this conversation. In his text the author calls for pragmatism in dealing with theory in educational research. For Biesta, the problem is not which theory should be used but "what is the question to which theory is supposed to provide the answer?". In his own words, the question is to look pragmatically at theory.

The second chapter illustrates the work developed within our doctoral research group at Universidade Nova de Lisboa. The work presented is a reflection on theorizing education and educating researchers, which arises from our practice of teaching in doctoral programmes and supervising PhD students. The outcomes reported here represent our first step towards understanding the use of theory in educational research and reflect an attempt to design a strategy for educating researchers. We emphasize the need to promote researchers' critical and reflexive thinking and their engagement with theoretical modes of educational inquiry embedded in social and ethical commitment and judgment.

Antonio Bernal (chapter three) analyses the characteristics of educational theory within a doctoral programme offered by the Department of Theory and History of Education and Social Pedagogy at the University of Seville. The author contextualizes his analyses within the Spanish tradition in theorizing education and its contemporary evolutions, revealing that the doctoral theses produced were rooted mainly in interpretative and critical paradigms.

In the final chapter, Joaquín García Carrasco presents the development of educational theory as an academic discipline in Spain and his perspective about educational theory, embedded in humanism within an anthropological approach. Recognizing the complexity and multidimensionality of the educational phenomenon, J. G. Carrasco understands education as the most unifying concept of all human and social sciences, which must be considered from different disciplinary approaches. The author's position is built upon an analysis of the implications of cognitive neurosciences and evolutionary biology for education and the human subject.

When examining the current features and challenges of education as a scientific field, we acknowledge debates that have been present across its own process of development. The intimate connections between theory, research and practice in education constitute key features but also major challenges within this scientific field.

In order to introduce the conversation proposed with this book, we present a preliminary discussion about the contribution of different traditions and trends for the construction and development of education as a scientific field and their influence in the Portuguese context. Identifying and analysing different traditions in theorizing education may contribute to situating the contemporary debates about education, educational research and educational theory. German, French and Anglo-American traditions represent the major influences in Western educational thought, defining diverse relations between educational knowledge, humanism and the modern experience. Those influences are particularly present in the Portuguese case.

Traditions and trends in the scientific field of education

A central concept for the discussion about education and educational theory is *pedagogy* and the meanings it has assumed within different traditions in theorizing education. Those meanings and the relations established between *pedagogy* and *educational science(s)* represent plural understandings and possibilities for thinking about the role of theory in the study of education.

In continental Europe, the term 'pedagogy' is used in different and not always congruent ways in the field of education, expressing the problems and unsolved questions within the establishment of education as a scientific field (Anglo-American tradition) or as a discipline (continental tradition). In current debates in continental Europe, pedagogy is understood, simultaneously, as the classical definition of educational sciences – present in the German tradition as 'general pedagogy'; as the term used to define educational practices and the theories about those practices; as well as to define the methods used by teachers in order to teach and promote learning (Boavida & Del Dujo, 2007). The different uses of the term reflect the process of 'scientification of education' and the influence of different traditions in theorizing education, especially German and French. Estrela (2007), referring to the French tradition and its influence in Portugal within the context of the institutionalization of educational sciences, states that there is a certain ambiguity in the definition of 'scientific pedagogy' that persists until today: it is used simultaneously to refer to an applied science (deductive), to the science that studies the relations between the educational phenomena (inductive), to a specific form of education – school education – and the reflection about it, and to pedagogic action or practice, reflection about it or confluence between thought and action.

It is important to notice that both German and French traditions are embedded in humanist, idealistic and rationalist perspectives rooted in the tradition of enlightenment. In the German tradition, initiated by Herbart (1776-1841), pedagogy is what gives unity to all educational knowledge; it is understood as simultaneously practical and theoretical knowledge, a systematic and general knowledge about education. Pedagogy is rooted in the need for a disciplinary unity in the field of education, led by philosophy as its normative foundation, connected to the tradition of idealism and historicism. Understood as such, pedagogy studies the educational phenomenon in order to guide its practical development at a normative level and reflects on the educational problems through ideological and philosophical commitments. In the French tradition, pedagogy is also rooted in philosophical foundations; it is a normative discipline whose point of departure is a theory about man and society, and in this sense it is connected to political and ideological systems. However, the development of the study of education, and the process of constitution of education as a scientific field, introduced fragmentation in a domain where pedagogy, as a normative discipline, guaranteed the unity of the different components of the study of education and the articulation between theory and practice (Boavida & Del Dujo, 2007).

This fragmentation assumed different forms in both traditions: in the German tradition there was a division between 'pedagogy' and 'didactics', which reflects a separation between the moral and the instructional dimension of education; whereas in the francophone tradition, under the influence of Durkheim (1858-1917), a distinction was drawn between pedagogy (understood in the German sense – philosophical reflection about education) and educational science (understood as description, analysis, interpretation and causal explanation of educational facts). Since there was no educational science at the time, Durkheim's concern was to provide pedagogy with scientific knowledge and techniques from other social sciences. For Durkheim, pedagogy should have a base of scientific knowledge in order to become an applied science, whose scope is the genesis and functioning of the educational systems, focusing on observable facts, their analysis and categorization, and the production of objective knowledge about these facts. From these origins in the French tradition, there were different attempts to build a properly scientific pedagogy; the terms 'scientific/rational pedagogy' (Binet, Claparède) and 'experimental pedagogy' (Dottrens, Simon) express these attempts and will led to the birth of 'educational sciences' (Debesse, Mialaret) at the end of the 60s of the last century.

In the process of the constitution of 'educational sciences', pedagogy was transformed into an applied science and absorbed into the field of educational sciences. The application of the experimental method to pedagogy deepened the internal differentiation between pedagogy and didactics. However, this tendency coexisted with the speculative reflection and rationalization rooted in Herbart's heritage guided by ethical,

instructive and organizational concerns about education. The two tendencies developed into two distinctive ways to approach education: experimental pedagogy, understood as a pure empirical science, free from philosophical presuppositions and liberated from all axiological, ontological and epistemological problems (Bengtsson, 2006), and humanistic pedagogy, heir to the modern tradition of enlightenment, understood as philosophical and teleological. Through history, the constitution of pedagogy as a separate discipline represented a separation between pedagogy and philosophy under the influence of psychology, in a first moment, and sociology in a second moment. In fact, we can question whether the process of establishing pedagogy as a separate discipline, within educational sciences, corresponds to or represents the constitution of an autonomous discipline and its autonomous modes of theorizing education. Throughout its development, pedagogy has borrowed its identity from philosophy, psychology and sociology.

Colom Cañellas and Nuñez Cubero (2001) divide the process of the constitution of educational sciences in continental Europe, and the historical process of pedagogy, into three moments: a first intra-pedagogical dismemberment, corresponding to the separation of pedagogy and didactics and the emergence of the history of education and school organization; a second methodological dismemberment, related to the rise of the two 'pedagogies' (rational and experimental); and a third extra-pedagogical and thematic dismemberment, connected to the constitution of educational sciences.

The first dismemberment reflects the separation between the moral dimension of education (pedagogy) and the instructional dimension (didactics), an intra-pedagogical dismemberment. Through this division, pedagogy became a discipline about education, disconnected from instruction (learning). This division reflects a separation between the ends (*telos* and *ethos*) and the means (methods) of education. By becoming the object of didactics, instruction – the methods of teaching and the ways of learning – was separated from education, in its moral and teleological sense. The terms 'instruction' and 'formation' (in French), or 'instrucción' and 'formación' (in Spanish), or 'instrução' and 'formação' (in Portuguese), express this distinction. Formation (formación, formação) is understood in the moral sense as the formation of a person, the human subject, and implies a reflection about the *ethos* and *telos* of education. Without the educational intentionality for learning, didactics is decontextualized. Without its reality (practice), pedagogy becomes an empty discipline. Within this separation we can find the roots of the contemporary discourses about learning and the problematic relation between theory and practice in the field of education.

The second dismemberment corresponds to a methodological differentiation, a pedagogical diversification related to the emergence of two pedagogies: experimental pedagogy and rational pedagogy. The former is the result of the application of the experimental method to

pedagogy in the attempt to develop educational knowledge through the scientific method. Applying the experimental method to pedagogy deepened the internal differentiation between pedagogy and didactics. Rational pedagogy, also called 'general', 'fundamental', 'essential', 'systematic' or 'critical' pedagogy, aimed at the definition of a universal model, valid for every man. As heiress to general pedagogy, rational pedagogy is rooted in the philosophical tradition of enlightenment.

The last dismemberment referred to by Colom Cañellas and Nuñez Cubero (2001) referred to the development of and increasing interest in the different human sciences for education, throughout the 20th century, representing the emptying of pedagogy. It is concomitant with the progressive hegemony of the Anglo-American tradition in continental Europe and the recent developments in the process of 'scientification' of educational knowledge and practice. The Anglo-American tradition is rooted in evolutionist, empirical and pragmatic approaches that define it as a science. Educational theory is deeply connected with experimental psychology and functionalist sociology. The idea of education as an academic discipline in its own right is absent (Biesta, 2011a) from this trend. In English the term 'education' designates both the practice of education and the study of education, while for most Western languages the discipline of educational knowledge production is called 'pedagogy' (Bengtsson, 2006).

The different meanings that 'pedagogy' and 'educational science(s)' assumed within the three traditions in theorizing education (German, French and Anglo-American) and the ambiguities present in the translation of these traditions to southern European countries also express the main questions or problematizing axes in what concerns the possibility of establishing education as an academic field in its own right, the nature of educational knowledge and the role of educational theory. The questions about educational knowledge as descriptive/explanatory (scientific) or normative (reflective, philosophical) knowledge, as proper (autonomous) or derivative (interdisciplinary) (Fendler, 2012), are at the heart of the different traditions and echoes within the current debates about educational sciences, educational research and educational theory. If we assume that there is a significant difference between 'scientific theory' as explanatory, concerned with 'what is' and related to scientific truth, and 'educational theory' as normative, concerned with 'what ought to be done', based on value judgments and 'rationally justified principles' (Biesta, 2011a), maybe it is possible to set the basis for 'autonomous ways of theorizing education'. The question of interdisciplinarity or multi-referentiality becomes a question of purpose, judgment and value. As stated by Fendler (2012 p. 322), "all disciplines are original or derivative in some way or another (…) [but] some derivations may be a great deal more desirable than others (…) the question is what exactly do we choose to borrow from other fields and to what purposes do we put those borrowings?"

This question highlights the distinction between educational sciences, understood in a plural sense, and educational science, as a single discipline. Recent debates (Houssaye, Setard, Hameline, & Fabre, 2004; Meirieu, 2006) within the francophone tradition express the desire to establish education as an autonomous discipline, recovering and rehabilitating pedagogy as the science of education. Within these debates educational sciences are considered to be external to education, because they have their proper object(s). They look at education from the perspective of their own object – psychology studies education from a psychological point of view (as a psychological fact), sociology approaches education from a social point of view (as a sociological fact), and so on. Educational science, as a single discipline, considers and constitutes education, in its totality, as its object. Instead of considering education according to sociological, psychological or economic criteria, the contributions of the different disciplines for the study of education are evaluated from an educational point of view. Education is the criterion for the incorporation of scientific knowledge produced in other disciplines. The work of Meirieu, Hameline and Houssaye represents attempts to recover the figure of the 'pedagogue' and to surpass the death of pedagogy represented in the development of educational sciences. The pedagogue is the one that tries to conjugate theory and practice through his own action; he is a 'practitioner-theoretician' of educational action. Pedagogy is an 'in-between'; it is produced within the specific relation between theory and practice existing in education. It is understood as a theory of the pedagogical situation, characterized by action, embeddedness, ruptures and failure (Houssaye et al., 2004), and operates within the breaches between theory and practice. For Meirieu (2006), pedagogy represents the opportunity to think about (and keep) the contradictions inherent in education and educational endeavour and to think about the educational principles, purposes, facts and actions. Meirieu understands pedagogy not as a 'scientific' discipline, since his definition of education is political, philosophical and anthropological. His perspective, as well as that of his 'fellows' in the francophone tradition, is a humanist perspective, which tries to recover the basis of a common universal culture and the sharing of humanist principles through culture and education.

Similarly, in Anglo-American tradition, the recent work developed by Biesta (2010), Biesta and Safström (2011) and Fendler (2012) seeks to reflect on education beyond an essentialist or humanist approach. Biesta and Safström (2011, p. 1) recover from the enlightenment the idea of "education as a liberating process, a process aimed at the realization of freedom", proposing thinking about education beyond the tension between 'what is' and 'what is not yet'. The former tension points toward the future and ties education to the modern vision of progress.

Instead, the authors suggest an a-temporal understanding of education as "a matter of being responsible for the present" (p. 2). The tension is now between 'what is' and 'what is not'. Within this framework the central

concern and purpose of education is freedom. This perspective raises the question about the possibility of forms of theorizing that are able to 'stay' in this tension (Biesta & Safström, 2011). This position requires autonomous educational theory, as distinct from applied or imported forms of theorizing. Understood as such, educational theory is neither explicative nor normative; it is rather ethical, political and aesthetic. Accordingly, it is exceeding, generating, vibrating (Fendler, 2012), it is an in-between that opens up possibilities.

Both contemporary francophone and Anglo-American perspectives represent attempts to think about the singularity and particularity of the educational event, refusing a 'total pedagogy' and the reduction of education merely to a scientific endeavour. They consider education from its inherent tensions and contradictions. Both represent attempts to think about education not as science or technique not as instruction, but in its human (existential) and public character, as relational and worldly. However, while some authors within the francophone perspective keeps education within the humanist tradition, some contemporary Anglo-American perspectives represent an attempt to go beyond humanism, proposing a post-humanist approach to education.

What is at stake in contemporary debates is the relationship of educational knowledge with humanism and the modern experience, and the way in which the different traditions in theorizing education may help us to (re)think about this relationship.

Educational sciences in Portugal

This debate has also taken a different pace and trends in countries with different historical, political, scientific, philosophical and educational traditions. The analysis of the Portuguese case will uncover some trends that frame the field of education, concerning the scientific identity of educational research and the relations between theory and practice.

Although it is not our intention to develop a genealogy of educational research in Portugal, we think that a brief reflection upon its developments throughout recent decades may help us to clarify and understand the existing panorama, as well as to highlight some of its future challenges, especially concerning the need to reflect upon the possibility and necessity of developing modes of theorizing educational research.

The definition of education as a scientific field in its own right, and its epistemological construction and definition in Portugal, is closely connected to the democratization process, the expansion and (re)organization of the Portuguese educational system and the need for educational reforms. At the institutional level, teaching and research in educational sciences in Portugal were developed within the context of the creation of courses for teacher education in universities during the 70s,

and schools of education (polytechnic institutes) in the 80s, as well as the creation of master and licentiate degrees in educational sciences (Campos, 1991). The 70s correspond to the elaboration and implementation of educational policies for pre-service teacher education, the 80s to in-service training and the 90s with continuous professional development of teachers. During this period, educational research followed the process of academic legitimation of several groups of experts in educational sciences, which were being integrated in higher education institutions (Ambrósio, 1992; Campos, 1995; Nóvoa, 1991). In 1991, the majority of the PhDs in education in Portugal had obtained their degree abroad, mainly in France, the UK and the USA (Ambrósio, 1992). The establishment of educational sciences was due mainly to an institutional development in several areas of an educational system in full expansion and the urge to respond to its needs in terms of human resources, training and institutional framework.

This institutional consolidation preceded the scientific affirmation of the field in Portugal, and in spite of the social and political influence that this represented for an emerging scientific field, it had some important consequences for knowledge production, research and autonomous reflection.

Already in 1991, Nóvoa had stated that "the sciences of education in Portugal were asphyxiated in their critical-reflexive dimension for the urgency of an almost desperate action in vital areas of the educational system, such as training and professional development of teachers" (Nóvoa, 1991, p. 48). Different authors criticize research's exclusive focus on teaching and school education (Correia & Stoer, 1995; Nóvoa, 1991), as well as the lack of production of specific theoretical and conceptual knowledge (Campos, 1993; Stoer, 1986). At that time, a logic of justification and legitimation of educational policies seemed to predominate, an administrative approach more concerned with the efficient functioning of the educational system than with the construction of autonomous reflective research (Ambrósio, 1992). There were also persistent criticisms towards the predominance of a disciplinary logic in educational research, with the powerful influence of psychology, sociology, history and political science. The scientific production in education remained closely connected to the original disciplines of the researchers (Nóvoa, 1991), and the perspective of education as a field of application – not as a field of autonomous production of knowledge – was also predominant (Pacheco, 2004). The perspective that the conceptual identity of education is of a practical nature, connected to the social and cultural contexts in which it is integrated (Pacheco, 2004), has prevailed until today and it is reflected in most of the educational research developed in Portugal. Also within the academic context, the different disciplines in educational sciences are organized according to the particular conceptions of the institution leaders, instead of epistemological arguments (Pacheco, 2004). These traits may explain the absence of

departments of educational theory in Portuguese schools and faculties of education.

The epistemological debates emerging out of this socio-historical context reflect the confrontation between two different traditions in theorizing education – the francophone and the anglophone – and the effort to establish education as a scientific field in its own right. There is a strong relationship between the epistemological debate and the socio-historical context we have previously analysed. The epistemological debate emerges out of a determined socio-political order and is historically situated while, simultaneously, it tries to reflect upon and transform that same socio-historical reality in which it takes place. Together, these aspects determined the consolidation, orientation and evolution of educational sciences in Portugal, especially in what concerns research production and knowledge construction in educational theory.

In the debates around the establishment of educational sciences in Portugal we can trace two different tendencies: one, connected to the anglophone tradition, defends the scientific construction of the disciplinary field through its problematic, in its plurality and multi-referentiality (Canário, 2005; Nóvoa, 1991); another, linked to the francophone model, defends an identity and scientificity materialized in the definition of a scientific pedagogy, built under the presupposition of an 'irreducible pedagogic' (Estrela, 1992). These two influences represent competing perspectives within the efforts to build educational sciences' identity by the Portuguese scientific community.

Like the general trends previously described, the Portuguese research related to the francophone tradition has been concerned with the promotion of educational sciences as a discipline in its own right and connected to the emergence of a research effort internal to the dynamics of the educational processes. Otherwise, research developed within the anglophone tradition has been focused on the effort to open problematization spaces where disciplinary perspectives converge, without the concern of tracing internal borders (Carvalho, 1991). In this tradition, educational sciences are understood as a scientific field, rather than a discipline, representing a process of 'secondary disciplinarization' (Hofstetter & Schneuwly, 2001, in Canário, 2005). According to Nóvoa (1991, p. 31), "the emergence of a second identity is essential to the consolidation of an educational scientific community and to the definition of a transversal specificity of education sciences, which gradually establishes research's common practices and attitudes". From the author's perspective, the approach to educational sciences within the anglophone tradition seems to be more active and interesting because it promotes cross-disciplinarity and challenges traditional disciplinary boundaries.

Several Portuguese authors recognize that the reflection and production of educational theory have been scarce. This absence is usually explained either by the process of institutionalization of the educational sciences and

the proximity between educational research and political reforms (Correia & Stoer, 1995), by the incorporation of knowledge produced in other disciplines (Estrela, 1992; Pacheco, 2004), by the perspective of education as practical knowledge (Pacheco, 2004), or by the influence of the two traditions (Estrela, 2007). Within the francophone tradition there is a lack of concern with the concept of theory, while in the anglophone tradition the term 'theory' has a scientific connotation, which becomes hegemonic, in contrast with a philosophical understanding of theory (Estrela, 2007).

What kind of conversation?

As we have been exposing, the questions of 'what is' educational theory and 'what is it for' require engaging in a conversation with the modern project and the different trends and traditions it has originated, in order to envision the possibility of going beyond modernity by considering its 'others' emerging in the current debates about education.

The main question is what kind of conversation do we need to engage in when doing educational research? Our proposal deals with the possibility of thinking within the existing tensions between different traditions and trends, in such a way that the plurality of educational phenomena is preserved, as well as the plurality of theoretical approaches, which sustain the intentional gaze of the educational researcher.

It is our perspective that the need for theory and the possibility of autonomous theorizing in education may be thought beyond scientism or humanism, within existential, ethical and aesthetic perspectives. Humanism and scientism represent the two 'universals' of the modern project. While humanism is an attempt to define human essence and to answer the question about what it means to be human, scientism refers to the desire for definition and universal application of the scientific method of experimental science. Both humanism and scientism have been challenged throughout the 20th century in philosophy and in science (e.g. Foucault, Derrida, Popper, Putnam) as reductionist and exclusive. They represent *impossible* efforts to define human essence, the nature of knowledge and truth. The analysis and discussion about educational research and educational theory within different traditions in this chapter shows that we can still identify persistent traits of these modern 'universals' in several contemporary discourses and debates about education and educational research.

Adopting a post-humanist perspective (Biesta, 2011b), we argue for the recognition of the existential character of education, rejecting essentialist approaches. Abandoning the idea of a total pedagogy doesn't represent a denial of education as a meaningful endeavour. In fact, educational experience is meaningful in an existential way, not in an essentialist/humanist way. Within this perspective, knowledge is not about truth but about the meaning (or meaningless) of what happens (the

educational happening, event). In education we deal with finite, existential, contingent and relational knowledge.

In order to identify processes and practices of education (to be able to study them), we need to have a conception of education, we need theory in order to identify, and construct, our object of study (Biesta, 2011a; Silva, 2000). More than the idea of reflexivity connected to social sciences (Giddens, 1996), theory gives visibility to educational problems to be enquired. In that sense, it represents the opportunity to "think otherwise" (Ball, 2006) or "to make the familiar strange" (Biesta et al., 2011).

Our perspective incorporates recent critics of the predominant understanding of educational research as evidence-based (Biesta, 2007; Bridges, 2011) and its underlying scientism (Gonçalves, 2010), and proposes that educational researchers, instead of taking the problems (defined by the politicians, decision-makers and practitioners), can define their own problems, their own working hypotheses. The portrait of educational research made by Delamont, Atkinson, and Pugsley (2010) shows that educational research in recent decades has focused on a very narrow range of educational problems and settings, that central features of the educational world are taken for granted, in such a way that they become invisible, and that there is a lack of good working hypotheses or foreshadowed problems. According to the authors, we need strategies to fight familiarity, in order to "make the familiar strange" and to construct a polygon of intelligibility around educational events (Biesta, 2007).

This book prompts a conversation as a twofold strategy. First, it is an exercise in expressing *familiarity*. Writing about our own different research contexts and realities is a way to shape our assumptions and perspectives about theory, research and education and how they are inscribed and express particular traditions and trends. Secondly, it is an exercise in *otherness*. Gathering and confronting diverse perspectives is a way to 'fight familiarity', placing singularity and uniqueness into presence.

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Theory and research in education: The case for pragmatism

Gert Biesta

Introduction

I recently had the privilege to be the external examiner of five PhDs in education. The PhDs were written in different languages and emerged out of quite different academic cultures. The reason I was invited to be an external examiner most likely had to do with the fact that each of the PhDs made more or less extensive use of theory, including some of the theory I have engaged with in my own work. What struck me, despite the fact that these PhDs were written in different languages and were conceived in quite distinct academic cultures, was that several of them struggled with a similar issue, namely the role of theory in the research. In some cases it looked, as I put it in one of my reports, that candidates had got a little lost in other people's theories. The 'struggle' with giving theory a proper place is a not uncommon phenomenon in educational research, not only in PhD projects but also in the work of more experience researchers, which often have a tendency either to be significantly *under*theorised or, like some of the PhD projects I saw, to be significantly *over*theorised (see Biesta, Allan & Edwards 2011).

The question this raises is how one can find the right balance in the engagement with theory in educational research, particularly in a time when there seems to be a real proliferation of theory from the side of philosophy, social theory, cultural studies, and so on, both at the level of 'object theory' – that is the theory we use *in* research – and with regard to 'meta theory' – that is the theories that are available *about* research. The question here is not only about which theory or theories one should use to inform one's research, but also about what one expects or hopes theory to 'do' in research. And there is perhaps even the bigger question why one should engage in research at all. In this chapter I wish to make a case for pragmatism in the engagement with theory in educational research. This does not mean that I will express a preference for pragmatism as a theory or a philosophical position, but rather that I will suggest that questions about theory in research should always be approached in a pragmatic way, that is, in connection to the question 'What is the problem?' – or, to be more precise: 'What is the question to which theory is supposed to provide the answer?' This, so I will suggest, is not only important in the conduct of research, but also has implications for how we educate the next generation of educational researchers.

Theory, a matter of confession?

The pragmatic approach I am advocating in this chapter can be distinguished from what we might term a *confessional* approach to the role of theory and philosophy in research, one where the first step would be to 'sign up' to a particular theory or theoretical 'school' in order only then to start the research. Such position-taking often takes the form of a kind of confession, such as in statements like 'I am a qualitative researcher' or 'I am a poststructural feminist'. While it is true that one can never start from nowhere and that in this regard there may be some sense in laying one's cards on the table at the outset of the research, this shouldn't mean, in my view, that we only do this in a confessional way, that is, as a matter of literally *taking* the position: appropriating it and bringing it into our possession. One important reason for this has to do with the fact that theories and philosophy allow us to *do* certain things. And although the metaphor of the 'tool' has perhaps been used a little too often, in some regard it is useful to see theories and philosophies as tools or instruments we work *with*. Seen in this way, to simple confess oneself to a tool, becomes to look problematic when we compare it to tool use in a field like carpentry, for example, where the first judgement is never about which tool to use but always about what the task is that needs to be done. After all, while a hammer can be very appropriate for some tasks, it is entirely inappropriate for other tasks, so to confess oneself as being a 'hammering carpenter' would seriously limit one's ability to be a good carpenter.

A further problem with a confessional approach to the role of theory and philosophy in one's research has to do with the fact that if one thinks of theory and philosophy as something one can confess to, one immediately objectifies theory and philosophy and forgets that many and perhaps all of the theories and philosophies that are around – many of which have turned into identifiable 'positions' – were actually developed in order to engage with and address very particular problems. To disconnect theories and philosophies form the context in which they were developed and in which they were meaningful, runs the risk of objectifying such theories and philosophies – making them into a thing, and thus into a position, rather than to see them as the specific outcomes of very specific processes. While the objectification of theory and philosophy can be a useful way to 'map' a particular field or to make sense of the different 'moves' within a particular discussion, it ultimately disconnects the 'product' from the 'process' and thus blocks the intelligent use of theory and philosophy.

The case for pragmatism therefore always comes with the suggestion that any theory, philosophy or theoretical or philosophical position one encounters is (re)connected with the particular context in which it emerged and, more importantly, with the particular problems those working on the theory or philosophy sought to address. It comes, in more

plain language, with the duty to understanding the history or origin of the tools one encounters, in order to be able to make more intelligent use of them[1].

It then becomes possible to see, for example, that the now often demonised split between mind and body that can be found in the work of René Descartes, was not a matter of taking a particular position or articulating a particular theory about the mind and the body, but emerged in the context of a much more complicated and much more urgent discussion about the question of human freedom and human responsibility in a situation in which modern science was pushing a picture of the universe as entirely mechanistic, that is, entirely operating on deterministic laws of cause and effect. While one may disagree with the particular solution Descartes sought for safeguarding a space for human freedom and human responsibility, one can at least begin to appreciate why a split between mind and body provided a possible answer to the issues at stake.

Similarly, while it has become fashionable to criticise the Kantian idea of rational autonomy as too rational, too autonomous, too self-sufficient too disconnected, and perhaps even as too male, his was an attempt to articulate the qualities a person would need – and hence the mode of being and acting a government would need to safeguard – at a time when European monarchies came to an end and questions about what it would mean to be a citizen with the context of newly developing democratic societies emerged. Also, while the work of Vygotskij has become popular if not fashionable in many quarters, we should not think of his endeavour as an attempt to develop and then defend a socio-cultural position, but rather see it as stemming from the question how we might understand the emergence of higher mental functioning – which itself took place within the context of a discussion about the respective contribution of individual and social or inter-subjective factors to this. Deconstruction, to take another popular notion, should again not be seen as a particular philosophical position developed by Derrida in order to mark himself off from other available philosophical positions, but rather as an attempt to address the unjustifiable power origins often play in a wide range of different arguments and discussions – not only philosophical, but also political and ethical and, not in the least, educational.

To look pragmatically at theory – which thus requires to ask the question what a particular theory or philosophy was developed *for*, which means to trace it back to the context in which it was developed and to reconnect it

[1] Richard Rorty's 1979 book *Philosophy and the Mirror of Nature* is, for me, still a prime example of such a pragmatic reading of the history of modern philosophy and modern thought more generally. The same 'flavour' can be found in some of the key texts written by John Dewey, such as Reconstruction in Philosophy (1920) and The Quest for Certainty (1929).

to the particular problems that those working on the development of the particular theory or philosophy sought to address – is even more important in those cases where theorists themselves begin to forget what it was that motivated their work in the first place. A recent example of this tendency can be found in what now is often referred to as 'actor-network theory' or 'ANT.' This 'theory' originated in the context of an attempt to provide a non-sociological understanding of asymmetries in power and influence in science and technology in order to overcome the problem that sociological analyses always ended up having to claim superior insights in the workings of science and technology (see Latour 1987). Yet over time, and partly also through the adoption by others of the insights developed in this context, actor-network 'theory' lost its connection with its context of origin and in a sense became the very kind of sociological theory that it sought to replace (see, for example, Law & Hassard 1999; Latour 2005).

Problems with being non-pragmatic

There are, therefore, a number of problems with a non-pragmatic engagement with and use of theory and philosophy in research. One is that if we disconnect a particular theory or philosophy from its context of origin, we end up giving it a status it never sought to have. Doing so, runs the risk of putting us in a position where we use theory-as-truth rather than to use theory as a-specific-answer-to-a-specific-question which, by the way, should be distinguished from the more general idea of theory as a 'tool,' or a 'lens' or a 'perspective.' The risk of non-pragmatic engagement with theory is also that we become susceptible to theoretical fashions without being able to provide a rationale and justification for the particular theory or philosophy we use. In this regard it is at least remarkable that so many research projects in education, not in the least PhD projects, opt for 'a socio-cultural perspective' – often formulated in precisely this way. Operating in a non-pragmatic way not only makes it more difficult to actually justify one's selection, but at the very same time pushes us in the direction of a confessional approach – and here it is also important to keep in mind that PhD students are often pushed or even forced in the direction of such a theoretical confession by more experienced researchers who have located themselves within a particular position, rather than that they operate pragmatically – a phenomenon that can particularly be found in the language of 'research paradigms.' A non-pragmatic stance with regard to theory thus leads to a situation where theory has power and control over us, rather than that we have power and control over the theory or theories we decide to use. That, once more, shows how a non-pragmatic approach prevents us from engaging with theory and philosophy in our research in an *intelligent* way. (The idea of 'intelligence' used here takes inspiration from John Dewey's idea of the transformation of 'trial-and-error' into intelligent action – see, for example, Dewey 1938; Biesta & Burbules 2003.)

Theory, the very idea

Although the word 'theory' is easily used – and so far I have used it myself in a rather loose way – it is not entirely easy to identify what it refers to, not in the least because the meaning of the word has shifted significantly over time. If we go back to the Greek origins of the word – which, of course, always raises the further question where the Greeks got their words from – theory (θεωρία) had to do with spectatorship: being a spectator of a performance or a festival, including religious festivals, being an official envoy to a festival, consulting an oracle, or making a journey in order to study something. Here we can see that the meaning of theory is firmly located within the domain of the empirical as it is about direct experience and witnessing. With Plato and Aristotle, however, theory (θεωρία) became connected to the domain of the *non*-empirical, that is, of Platonic forms and Aristotelian universals. Theory (θεωρία) thus became understood as knowledge of a permanent and unchangeable reality 'behind' the empirical world of change, flux and appearances.

The distinction between empirical and theoretical knowledge gained further prominence with the raise of the worldview of modern science in which the main role of theory became that of the *explanation* of causal connections between empirical phenomena. The need for theory had to do with the insight that while correlations between phenomena can be perceived, underlying causal connections can not. Theory was therefore needed to account for or speculate about underlying processes and mechanisms. Here theory transformed into what Gaston Bachelard (1986 p.38) has called "a science of the hidden." With the rise of hermeneutics and interpretivism in the late 19th century, theory also become a device for *understanding*, that is, for making intelligible *why* people say what they say and do what they do. The role of theory here is that of deepening and broadening everyday interpretations and experiences – something captured in Anthony Giddens's idea of double hermeneutics (see Giddens 1975). The primary interest of *critical* theory, developed by the philosophers of the Frankfurt School working in a tradition going back to Marx, lied in exposing how hidden power structures influence and distort such experiences and interpretations. The ambition here is that the exposure of the workings of power can contribute to *emancipation* (see Carr & Kemmis 1986; Biesta 2010a).

The shift from theory as empirical to theory as *non*-empirical hints at one of the key roles theory plays in contemporary research, namely its role in the analysis and interpretation of (empirical) data. But while theory plays a crucial role in making data 'intelligible,' it is important to see that theory does not just come at the very end of the research – when all the data have been collected – but also plays an important role in the initial phases of research. Here theory is indispensible for the *conceptualization of the phenomenon* one wishes to investigate. For example, while a researcher may wish to study 'learning,' it is only after one has engaged with the question

how one wishes to conceptualize learning – for example, as information processing, as behavioural change, as acquisition, as participation, as social practice – that one can make decisions about which phenomena one should focus on and also *how* one might go about doing so (which is the question of design, methodology and methods). Some researchers, more often those working at the interpretative end of the spectrum, reject the idea that theory should play such a role in the initial stages of the research as they feel that this biases the research findings and blinds researchers from seeing aspects that fall outside of one's theoretical 'frame.' While it is, of course, always important to be open in research, this particular objection fails to see that the world never appears unconceptualised and untheorised, so that *not* to engage with conceptualisation runs the risk of uncritically accepting existing definitions and conceptions of the phenomenon under study. It also shouldn't be forgotten that to conceptualise learning as, for example, participation, in no way fixes what it is one will find through empirical investigation about such participatory processes – which means, to put it in a more positive way, that the role theory plays in the initial stages of research can never *replace* empirical work.

Theory *of* educational research: Paradigms or purposes?

If the discussion so far has focused on the roles theory plays *within* research, then I now wish to move to a slightly different aspect of the role of theory in research, and a slightly different dimension of the case for pragmatism. This has to do with the wider justification of particular approaches to research – sometimes referred to as the question of research philosophy but more often, particularly in the English speaking world, as the question of so-called 'research paradigms.' The language of paradigms in research often suggests that there are a number of fundamentally different approaches to doing research, often labelled as 'quantitative' and 'qualitative' with, in some cases, a critical approach identified as a third research paradigm.[2] A major problem with identifying different approaches to research in terms of 'quantitative' and 'qualitative' is that strictly speaking the labels 'quantitative' and 'qualitative' can only accurately be applied to the kind of *data* one works with – either quantities

[2] One important source for a depiction of educational and social research in terms of paradigms is the chapter by Guba and Lincoln in the first edition of the *Handbook of Qualitative Research* (Guba and Lincoln 1994). Although Guba and Lincoln paint a more complex picture about research paradigms than the distinction between a quantitative, a qualitative and a critical paradigm, the discussion about research paradigms more often than not just proceeds in terms of these categories or even only in terms of quantitative versus qualitative. This uptake has also been reinforced by recent work on mixed methods in educational and social research, which often depicts different ways of mixing in terms of various combinations of quantitative and qualitative research (see, for example, Tashakkori & Teddlie 2010).

or qualities, that is, either numbers or words/concepts – but not to what one does with such data (see also Biesta 2010b). Here one already needs to shift to different concepts, for example in terms of a distinction between research that 'quantifies' and, with a move that is actually difficult to express in the English language, research that 'qualifies.' Yet even such terms only refer to the way in which research 'works' with data, but doesn't provide any insight in what it is that the research is actually aiming for. Yet it is the latter question – the question of the particular *purpose* (or purposes) of research – that can help to see significant differences between differing research approaches. It is such a characterization – that is in terms of what research seeks to achieve – that I wish to identify as a pragmatic way of understanding the differences between research approaches. And the reason for calling it a pragmatic way of engaging with different approaches to research is that it allows for the selection of a particular approach on the basis of a considered judgement about what it is one aims to achieve with one's research, rather than in a confessional way where one would locate oneself within a particular paradigm without being able to ask for what reasons and purposes one would want to be located there. So how might we understand the different purposes of research? And what is implied by a choice for one option – which in a sense is always a choice against other options?

As I have already briefly indicated above, in terms of what research aims to achieve we can make a distinction between three distinctively different purposes: that of *explanation*, that of *understanding*, and that of *emancipation*. The idea that the task of research is to explain, has its roots in the natural sciences where explanation is generally understood in causal terms, that is, as the identification of connections between causes and effects – and in 'strong' interpretations of causality, as *necessary* connections between causes and effects; a way of thinking we can find, for example, in the idea of laws of nature. The ambition behind explanatory research is that once we are able to identify necessary connections between causes and effects – that is, if we are able to generate perfect *explanations* – we are, in principle, in a position to *predict* future events based on what is happening currently and, to the extent to which the causes are manipulable, we are also able to *control* future events. The idea of explanation – and perhaps we might add: the ambition of explanation – rests on particular assumptions about reality, namely that reality itself is 'made up' of causal connections between events. Such an ontology emerged in the wake of what is often termed the scientific revolution, that is, the rise of a mechanical worldview that precisely assumes that ultimately reality operates as a perfect clock. While it might be possible to model some events in physical reality in terms of perfect causal connections, it is not an assumption that can be held for the whole of physical reality – for example, at a sub-atomic level such strong causality is not a plausible assumption, but also many biological processes do not operate in such a mechanistic-causal way, something which has been theorized, for example, in complexity theory.

More important for the field of educational research is the question whether human phenomena such as education can be understood in the same way, that is, whether it is plausible to assume that in the domain of human action we can find strong connections between causes and effects. This question goes back to a much wider and older discussion which is often framed in terms of the question whether human action is caused or motivated, that is, whether human beings ultimately act as stimulus-response machines or whether they act on the basis of their interpretation of the situation, and driven by their motivations for action. Such a view, which we can for example find in the work of Wilhelm Dilthey (1833-1911), argues that in the domain of human action we should not use a language of *causes* but rather a language of *reasons*. This then not only suggests a different methodology for research that aims to take this reality seriously, but also and first of all a different *purpose* for research, not that of aiming to explain underlying causal connections but rather that of trying to understand the reasons that govern human action. If under the aegis of explanation the role of theory is to make plausible why particular events take place in cause-effects-chains, then the role of theory in research that aims at understanding human action, is to make plausible why people act as they act, first and foremost through reconstructions of people's perspectives and interpretations.[3]

Some see the difference between explanation and understanding basically as a difference at the level of ontology – that is, at the level of the assumptions we hold about the nature of the reality we are investigating. In that case the choice for either explanatory or interpretative research, that is research aiming at understanding, is a choice based on what one believes the nature of social reality is. Others treat the question first and foremost as a methodological one, that is, that to the extent to which social reality can function in a causal way it makes sense to aim for explanation and to the extent to which social reality can not function in that way – or cannot be *made* to function in this way – research should aim at understanding. I am inclined to favour the second approach, partly because I do not think that physical reality simply works in a (strong) causal way, and partly because I believe that social reality can be made to function in a causal way – this requires a particular intervention to which elsewhere I had referred as that of complexity reduction (see Biesta 2010c). The idea of complexity reduction – that is of the reduction of the complex operation of systems that are basically open and non-deterministic – shows on the one hand one such systems can be made to behave in a more deterministic way and shows on the other hand – and this is crucial – what the 'price' is we need to pay for making social systems

[3] An older but still tremendously intelligible discussion of the role of explanation and understanding in social research in Hollis (1994), also because Hollis provides a useful discussion of both 'individualistic' and 'holistic' conceptions of explanation and understanding, thus being able to combine accounts of both approaches within psychology and sociology and related fields of research and scholarship.

work in a causal way. As this involves, for example, that we not only reduce the scope for individual action and decision-making but also reduce the opportunities for individuals to think and judge for themselves, we can see that attempts to make social systems such as education work in (quasi-)causal ways often comes at a high price and raises serious ethical and political issues.

The idea that the purpose of social and educational research should be to make generate understanding of the experiences, interpretations and motivations of actors in order to make plausible why they act in the way they do, does, however, raise one further important question, which is whether the interpretations people give of their own actions, perceptions and motivations can be taken as a true or correct account of what is going on. It is here that Marxist philosophy and theory has raised the possibility that our understandings can actually be distorted as a result of the way in which social power structures operate on our understandings and interpretations. This is the problem of ideology, where ideological thought is not only thought that is socially determined – that is, thought that is 'produced' by social forces – but that ideological thought it thought which, in the words of Karl Marx, "*denies* this determination" (Marx, quoted in Eagleton 2007, p.80). If this is the case, then it means that the understandings actors of their own situation is by definition inaccurate or false – hence the idea of false consciousness – and thus needs a different intervention, not one where the researcher simply clarifies and systematises what actors already know about their own situation, but where the researcher makes visible to the actors how their interpretations have been determined by underlying power structures. Doing so, so the idea here is, can result in emancipation, that is, in liberating social actors from the hidden influence of power. That is why the purpose of research – which, in the language of paradigms is often referred to as critical research – is that of *emancipation* (see, for education, for example Carr & Kemmis 1986).

While there is much more to say about the different purposes of social and educational research, to think of different research approaches first and foremost in terms of their purposes – that is in terms of what they seek to achieve – allows for a much more intelligent way to make decisions about the particular approach one should adopt, than to think of this in terms of 'quantitative' versus 'qualitative' – which, as I have mentioned, actually only says something about the kind of data one works with, but not why one should work with such data in the first place. To look at different research approaches in terms of their purposes does allow for pragmatism with regard to the choice for a particular purpose, that is, for a decision where the first question is not one of *how* to conduct research but what it is one seeks to achieve – explanation, understanding or emancipation, to put it briefly. Or to put it in terms of the carpenter and his tools: the first choice is not that of a hammer, a screwdriver or a saw, but starts with the question what the problem is one seeks to address.

Three options or an integrative view?

If the foregoing provides a different way to engage with the plurality of approaches available to social and educational researchers, there still is the question whether we should think of these approaches as separate – so that at some point there is still the question of committing oneself to one of them – or whether the approaches might actually be though of in connection to each other. The latter view has been espoused by Jürgen Habermas, most notably in his books *Erkenntnis und Interesse* (Habermas 1968; translated as *Knowledge and Human Interests* and published in 1971) and *Zur Logik der Sozialwissenschaften* (Habermas 1970; translated as *On the Logic of the Social Sciences* and published in 1990). Rather than to think of the explanation, understanding and emancipation as three different and separate 'modes' of research, Habermas suggests that explanation has a role to play in social research, but that when such research operates *exclusively* in an explanatory mode is misrepresents the specific nature of social reality (and this misrepresentation can, in turn, lead to a distortion of this reality). That is why explanation always needs to be embedded within research that aims for understanding, so that the interpretations of human actors can have 'control' over explanations generated about (parts of) their actions. Yet Habermas acknowledges the key insight from the critical tradition that the understandings of social actors can be distorted by the workings of power. Hence interpretative research needs, in turn, to be embedded within modes of critical research that can make visible how power operates on people's interpretations so that ultimately the whole research effort can contribute to emancipation. For Habermas, the emancipatory ambition of social research is therefore not an approach that is different and separate from research aiming at explanation or understanding. He argues for a 'nested' model where explanation is nested within understanding and understanding is nested within critical forms of research so that the total effort can contribute to emancipation.

The most difficult question: Why do research at all?

So far I have made a case for a pragmatic engagement with theory within research and a pragmatic approach to different research approaches. I have, in other words, both made a case for pragmatism with regard to theory in research and with regard to theory of research. While I do think that at both 'levels' such a pragmatic approach can not only provide researchers with guidance about what they want theory to do in their research, rather than that they theory drives the research or, even worse, researchers get lost in the complexity of theory – they get lost, as I have put it, in other people's theory – the discussion so far has relied on the assumption that research is, in itself, a good idea. But if we want to be thoroughly pragmatic, we should not only be able to justify our particular choices within our research efforts and our particular approaches to research, but we also need to engage with the question *why to do research at*

all – at the very least in order not to forget that research is not something good or desirable in itself, but is a very particular way to respond to problems and issues. So what might we say in response to this 'most difficult' question? Let me conclude with some reflections on this question.

The main thrust in arguments *for* research – particularly but not exclusively in the social domain – are of a utilitarian nature, that is, they highlight that the outcomes of research can be *useful*. Sometimes, and this is perhaps the most 'tempting' way to argue for the usefulness of research, this is done by highlighting that research provides us with technical knowledge, that is, knowledge of how to do things, of how to solve a problem or change a situation for the better. This rationale goes back to the old idea that (causal) explanation not only provides us with the tools of prediction – if, that is, we can assume that the reality we are talking about behaves in a sufficiently causal way – but also with the tools of intervention and control. The idea of 'control' is, of course, not necessarily a bad idea, as there are many areas of our lives where control over what occurs is desirable and beneficial. Of course this is again something that is most prominent in our engagement with the physical world where increased opportunities for control can add to security and an overall increase in the quality of life – for example with regard to our health. But the example of health is already an interesting one, because it is obvious that health is not just a matter of technology and control but also has an important subjective dimension. There are diverging definitions of what it means to lead a healthy – and perhaps we should add: a happy – life, and technology can never override such definitions or define what health and happiness are or ought to be. There is of course a real danger that this does happen, as many technologies are not only very powerful but also omnipresent, so that it is not always easy to resist the ways in which technologies tempt us to do A rather than B.

Whereas in our engagement with the physical world we now have at least a number of centuries of experience with technical knowledge and technology, and have been able to assess both the benefits and dangers of such knowledge – which is not to suggest, of course, that this discussion has been settled and that there are no problems left. The ongoing advance of technology in many areas of our lives raises ongoing ethical and political questions. In the social and educational domain the question of technology is a different one because, as I have suggested earlier in this chapter, the assumption that what happens in the social and educational domain is similar to how things work in the physical domain – that is in terms of causes and effects – is highly problematic. (I have also indicated that notions of strong causality are also only of limited use in the physical domain.) While it might be possible to 'push' social and educational processes towards quasi-causal ways of operating, this comes always at a price, and thus raises the question whether we are willing to pay such a price – which brings us straight back to ethical and political questions and

considerations; questions which are not simply there for ethical committees or politicians, but are also questions that researchers themselves should engage with. There are, therefore, ontological, methodological and ethico-political issues with regard to the ambition that research can and ought to generate technical knowledge about social and educational processes – which is why the ongoing but in my view rather naïve call to researchers to generate knowledge about 'what works' remains highly problematic (see Biesta 2007; 2010d).

The usefulness of research is, however, not confined to the generation of technical knowledge and technology, as much social and educational research provides us with different ways to see, understand, and interpret the situations we work in. In distinction from technical knowledge De Vries (1990) has suggested to refer to this as 'cultural knowledge' and connects this to a different way in which research can be relevant for social practices, to which he refers as the cultural role of research. By providing different understandings of social and educational realities, research can not only help those working in and with such realities to see things in a more precise manner – it can help to provide clarification to our understanding of what is going on in such practices, and some might even argue that it can help us to understand what is really going on; at the very same time it can alert us to problems that we may not have seen before, for example with regard to the way in which we act in such settings with the intention to improve opportunities for all, actually operates in such a way that some benefit more from this than others (which his one of the insights the sociology of education has contributed to our understanding of social and educational practices, but similar patterns have been revealed through gender studies and critical race studies, for example). Along the cultural line social and educational research can therefore also lay claim to usefulness, not because it simply provides us with opportunities for control but because it provides us with a wider range of possibilities for action, based on a wider range of understandings.

It is here that social and educational research would often like to position itself, not as a controlling technology, but rather as an emancipatory one, that is, one that provides social and educational actors with more and better opportunities for their own judgement, decision making and action. Perhaps we should refer to this rationale for research as 'soft' emancipation, in order to distinguish it from the stronger and more specific emancipatory claims that come out of critical traditions of social and educational research where the ambition is not simply to provide social and educational actors with more options for action, but where the ambition is to reveal the hidden workings of power in order to emancipate social and educational actors, and through them the 'audiences' they serve, from those workings. But here some caution is needed, in order not to paint a picture that only looks at the potentially positive or beneficial

effects of social and educational research. There are two points that are important here.

One is the point made by Michel Foucault – and, to a certain extent, now part of the 'common knowledge' of many social and educational researchers – that knowledge should never simply be understood as the very 'thing' that can liberate us from the workings of power, because knowledge and power are not to be understood as separate 'entities' that are in an ongoing 'battle' in such a way that knowledge can ultimate overcome the workings of power and set us free. This is partly because power is not simply negative and not just to be understood as limitation, but is also positive and actually quite important if we wish to make any chance for the better. But it is also, because knowledge itself is not free from power – not only in the old adage that 'knowledge *is* power' but also in the sense that as soon as we (claim to) know something we also have opened up avenues for control and the limitation of opportunities for action. This is clearly a problem for educational research, not in the least for those modes of research that aim to provide understanding about educational realities and experiences. After all, to generate detailed knowledge of how, for example, students operate strategically within the educational system or, to refer to another field, how adults navigate the complex landscape of lifelong learning, is not only just 'interesting' knowledge but provides politicians and policy makers – and even educators – with new avenues for control that ultimately can block the very spaces for action and agency that such students or adults were able to create for themselves. Knowledge, to put it briefly, is therefore never just a liberating technology – at the very same time it can be (and often is) a disciplining technology (see Foucault 1970), which is one of the main reasons why we should be careful about just claiming the utility of research in the social and educational domain.

If this raises some questions about 'soft' emancipatory ambitions of research, the other important reminder – if not warning – has to do with stronger emancipatory ambitions, particularly those that claim that social research can reveal to social actors what they themselves cannot see or know about their social situation and, ultimately, about their own thoughts and feelings. Here the idea of a 'science of the hidden' re-emerges, and the fundamental question here is whether emancipation should indeed be understood as the act where one person explains another person – where one person tells another person what he or she is really thinking and feeling – or whether to think of emancipation in these terms is actually the most unemancipatory intervention of all. Paulo Freire already identified this problem when in his *Pedagogy of the Oppressed* (Freire 1970) he argued that emancipation can not be brought about through banking education, as such a form of education leaves the power differential between the educator and the one to be educated (which, in banking education appears as the differential between the oppressor and the oppressed) intact, so that emancipatory education requires an entirely different 'gesture' in which

this power differential itself is being transformed. While Freire would see this as an argument for a process of mutual and reciprocal learning towards the development of critical consciousness of both the oppressor and the oppressed – so that both identities can be overcome at the same time – Jacques Rancière has articulated a different option by disconnecting the question of emancipation from the question of knowledge, and by thinking of equality not as the outcome of emancipatory processes, but rather as a different starting point from where to conduct our actions (see Biesta 2010a; and for what such a different starting point might look like in education, see Biesta 2010e).

Concluding remarks

In this chapter I have tried to make a case for pragmatism – that is for a pragmatic way of proceeding – in educational research in order to address a problem I have encountered and continue to encounter in much research, often but not exclusively research conducted by PhD candidates. The problem is that such research often gives me the impression that its authors are lost in other people's theories, and in this regard I have suggested that a pragmatic approach might help to regain some control over what we want theory to do in our research endeavours. A pragmatic approach implies that in all cases we connect our judgements and decisions to the question 'What is the problem?' so that we do not end up making choices for particular 'answers' – or in the metaphor I have used throughout this chapter: choices for particular tools – without at least trying to identify what the question is we are trying to address and what the problem is we are trying to solve. I have suggested that such a pragmatic attitude is needed at three levels: with regard to the theories we use in our research; with regard to the theories we use about our research; and with regard to the wider justification of research in the first place – which I have identified as the 'most difficult question' researchers are faced with. The pragmatic attitude I have advocated in this chapter is explicitly not an argument to co-opt pragmatism as a philosophy or philosophical framework for research, not in the least because the suggestion that one should adopt a particular framework is precisely the way of thinking I have tried to challenge in this text.

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Theorizing education and educating researchers: One experience at UIED/FCT/UNL

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Setting the background

The debate about the scientific status of education has produced a large amount of work, disclosing different and sometimes competing views. The questions are multiple and highlight different problems, issues and concerns about both theoretical endeavour and methodological options. In an article entitled 'Disciplines and theory in the academic study of education', Gert Biesta (2011) discusses the very idea of education as an academic discipline in its own right, claiming for different traditions on thinking about and researching education – as an interdisciplinary field (the Anglo-American tradition), or an autonomous one (the continental tradition). The comparison between the different traditions leads the author to question the theoretical resources available for the study of education and the possibility to "ask educational questions about education" (p. 190). That would imply the need for an educational theory (neither psychological, sociological, historical, nor philosophical).

Universities face some compelling challenges on how to prepare researchers, and there seems to be little agreement within the education community about how to do it (Levine, 2007). We see the process of educating someone as a scientific endeavour, and so the process of preparing researchers within the PhD programme is seen by us as a challenge to envision an educational theory and research practice in the sense of what J. Whitehead (2011, p. 3) calls "a living theory approach". Whitehead's concept of a 'living' theory goes along with Polanyi's call for the "participation of the knower within the production of the known" (Polanyi, 1958). In our own practice of university teaching, particularly in the realm of the educational doctoral programme and researchers' preparation, we have been seeking this participatory production of knowledge, a "culture of inquiry"[1] that has a collaborative form (Whitehead, 2011). These issues are particularly important when addressing the training of researchers in education. We keep in mind Biesta's (2011, p. 188) plea that "questions about disciplines and

[1] Whitehead refers to 'culture of inquiry' as a concept used in the work of J. Delong (2002), *How can I improve my practice as a superintendent of schools and create my own living educational theory*. PhD Thesis, University of Bath. Retrieved 11 March 2009 from http://www.actionresearch.net/delong.shtml

disciplinarity play an important role in the different ways in which the academic studies of education have been conceived and constructed". In his 'living theory approach', Whitehead (2008, pp. 105-106) distinguishes 'education research' from 'educational research'. While education research "is carried out from the perspectives of disciplines and fields of education" (such as philosophy, sociology and psychology), educational research focuses on the "creation and legitimation of valid forms" of theory and knowledge, calling for epistemological significance and new forms of representation, through the work of practitioner researchers. Whitehead's distinction can be related to Biesta's call for education as an academic discipline in its own right. Our work transposes these issues to the experience of educating researchers.

We have been arguing (Alves & Azevedo, 1010; Alves, Azevedo, & Gonçalves, 2012) about education as a complex and cross-referenced field, in which research issues and problems should be addressed within a comprehensive approach, taking care of the non-linearity and potential emergence of educational phenomena. In previous research we conducted a meta-analysis of the doctoral educational research that was carried out in our faculty in the period 1996-2008. We presented an overall picture of the main trends of inquiry in our university research group (Alves et al., 2012). Through that work of identifying trends we started to raise questions about the nature of the educational scientific field, its research and the teaching of doctoral students.

Additionally, educational doctoral students come from different academic and disciplinary realms, bringing with them a set of explanatory concepts (Silverman, 1993) that they use for thinking about education and educational practice and research. This situation influences their research interests, concerning both the research problem and ways to address it; in addition, it nurtures the discussion about the scientific status of education and the major enterprise of developing educational theory.

In another research we characterized the profile, expectations and competences development of doctoral students in education enrolled in our faculty. We concluded that PhD students are mainly teachers from different levels of schooling and other professionals within the educational field (Alves & Azevedo, 2010; Alves, Neves, Azevedo, & Gonçalves, 2012). In our view, a change appears to be happening from the typical doctoral student who aimed and expected to become an academic researcher to the practitioner who will continue in the field of education in schools and other non-higher education organizations. This being so, part of the questioning underlying the present research work addresses issues such as how to educate researchers with this particular profile in mind, as well as how to promote students' development, which is relevant for their professional contextual challenges.

These issues set the scenario in which the work with our doctoral students has taken place, in the form of research seminars. Usually, doctoral students are aware of the need to carry out a literature review as a basis for

guiding the research options and giving it conceptual boundaries. Nevertheless, they are unsure about what is meant by theory in the educational scientific field and how they should accomplish the theoretical endeavour, being aware of the competing theories and bearing in mind some criteria to justify their choices. Or, as Whitehead (2008) suggested, working for "educational knowledge" creation.

The work presented here is a reflection on theorizing education and educating researchers, which arises from our practice of teaching in doctoral programmes and supervising PhD students. Over the last few years the authors have been promoting doctoral seminars designed to support the development of PhD students' research that will lead to doctoral dissertations. Intending to benefit from the dynamics of collective work, strategies for stimulating seminars, as well as issues and themes discussed on those occasions, have been diversified over time.

During the school years 2008-09 and 2009-10 methodological issues specific to educational research were presented, analysed and discussed, resulting in a joint publication (Alves & Azevedo, 2010). Following that endeavour, it was acknowledged that besides methodological issues, questions focusing on theories and theorizing in educational research arose as difficult and challenging within the PhD students' research development. Overall, the quality and real contribution of a doctoral dissertation in terms of scientific knowledge are highly dependent on methodological as well as on theoretical issues, and frequently theory hides behind methodology.

This being so, during the school years 2010-11 and 2011-12 the authors decided to centre the doctoral seminars on questions regarding theorizing education and the role of theory within educational research. In order to develop the seminars, it was important to classify the difficulties that PhD students face when dealing with theoretical issues. In the first stages of the research development, we noticed that doctoral students found it difficult to make the distinction between the authority of current discourses and opinions about educational issues on the one hand, and scientific arguments on the other. We have identified situations in which legislation or news/opinions in media are used to structure the research, surpassing academic literature often described as extremely theoretical and disconnected from reality. In our view, even if the former can be extremely relevant for provoking research, the latter is of course essential for scaffolding a doctoral dissertation. Consequently, aspects such as searching scientific literature and its criteria, legitimacy of different kinds of bibliography and sources of information, and how to use scientific literature and its role in the research development are of major relevance within the training of researchers. These aspects might be considered as things that PhD students already know, but given that usually nowadays they are not members of the scientific community, nor are they used to

reading, writing about and debating educational research, that difficulty is not unexpected.

Besides these mentioned difficulties, others are observed. For instance, one very important element to take into account is how PhD students frequently tend to understand a research project's theoretical sections as the description of the context (social, personal, political, economical…) in which the phenomenon being studied takes place. Thus, on the one hand, this situation reflects the difficulty in identifying (and debating) theoretical and conceptual issues and suggests an attitude of 'theory avoidance'. On the other hand, within this situation, problematizing of both context and phenomenon is neglected, as PhD students assume a position of consumers of knowledge instead of actively engaging with the process of producing scientific educational knowledge. This situation implies the need to promote strategies enabling doctoral students to develop theorizing abilities concerning education issues and objects. These were the main identified challenges that drove the authors in the planning of the doctoral seminars during the school years 2010-11 and 2011-12, addressing questions on theorizing education and on the role of theory within educational research.

Setting a scenario

Acknowledging the issues described in the previous section, we defined a set of questions to guide the seminars with the doctoral students. Specifically, the main questions were: In what way is theory used in educational research? What are these theories? Where did they come from? And how are they being used in current doctoral research? The challenge was to lead the doctoral students to think about their own research, understanding the important role that theory plays in it. As previously stated, these issues have been emerging through our experience with doctoral students both in teaching and supervising their research work. We have been dealing with their doubts and insecurities about what constitutes theory and the suitable use of it in their research. An important requirement for preparing researchers is dealing with the development of critical ability to identify the main theoretical lines to be pursued and to look for theories as organized systems of explanation, contrasting with common sense. Students have to grasp the influence of the theoretical framework on the definition of research questions and its implications for research development.

The research seminars were designed with the overall purpose of promoting knowledge about theory and its use in educational inquiry. We had no intention to provide an 'off-the shelf' solution since we believe that enduring knowledge is built on self-awareness and collaborative work. So, we hold to the commitment to develop a "pedagogical culture" built on the exchange of ideas within a climate of systematic debate, examination and evaluation (Wagner, Gamer, & Kawulich, 2011).

The seminars have been ongoing since September 2010 and have been attended by 10 to 14 doctoral students, on a monthly basis. The work about theory in educational research has been developed in two main phases: the **exploratory** and the **intensive** one. In the academic year 2010-2011 the exploratory phase took place aimed at prompting the debate around theory and educational research in order to recognize students' awareness of their main theoretical references (authors, theories and concepts) and to assess their understandings about the nature of theories in use and their roles in ongoing doctoral research.

After the exploratory phase, we decided to deepen doctoral students' *exposure* to theory – the intensive phase (2011-2012) – by bringing into play a set of questions that cover different dimensions of educational research (motivations, aims, justifications, intentionality and procedures) and the contribution of theory to educational research (role and use). Our aim in this phase was to pluralize perspectives while exploring the possibility of building shared understanding(s) of theory and theorizing education. The question underlying our work in this phase was: how do we communalize plurality?

Underlying this overall approach there are two main assumptions about education and the features of a researcher's training process. One of these assumptions is the understanding of doctoral seminars as a democratic exercise, an experience of *equality* (not of egalitarianism) in Rancière's (1991) sense. This perspective presupposes "the recognition of a certain equality of intelligence of students and teachers – equality of nature and of capacity" (Gonçalves, Gomes, Alves & Azevedo, 2012, p. 281). It is an exercise of thinking that calls attention to what is at stake and presupposes that everyone is able to make sense of it – the questions, the issues. It is the process of constantly bringing into play – paying attention to, calling attention to – different questions and issues brought into discussion; and of displacement or disconnection from their common and mundane use. It represents an experience of equal exposure to certain questions and issues about educational theory, educational research and theorizing education that are put at doctoral students' disposal for discussion and thinking. We are all equally exposed to common things. These things, as in Masschelein and Simons' (2010) perspective of public school, are open for "new and free use".

In our encounters "we all sit as equals around the same table" and "anything can happen" (Masschelein & Simons, 2010, p. 680). This table is both literal – the space of our monthly encounters is a room with a big table where we all sit together and discuss our questions and issues – and metaphorical, in the sense that this is a space and time where "things are put on the table" (Masschelein & Simons, 2010, p. 676) and transformed into "common things" for "free use" (Masschelein & Simons, 2010, p. 680).

Another assumption relates to Davis's (2004) perspective about teaching as *occasioning*. As stated by Davis (2004, p. 170), occasioning refers to "the way that surprising possibilities can arise when things are allowed to fall together. (…) is thus useful for foregrounding the participatory and emergent natures of learning engagements, as it points to both the deliberate and accidental qualities of teaching." Our research group meets the conditions defined by Davis (2004) for the occurrence of complex emergence: *diversity* and *redundancy*. Its diversity concerns personal and professional paths, as well as research interests, aims and approaches, while its redundancy is based on the fact that they are all doctoral students developing research in education. This redundancy ensures a minimum common ground needed for interactions. The questions and strategies we have defined for discussion represent *liberating constraints* (Davis, 2004). They constitute guidelines and limitations to activity that are intended to provide enough organization to orient the discussions, while allowing sufficient openness for expression of the varieties of experience, ability and interests represented within the research group/community (Davis, 2004). They also presuppose a *decentralized control* on the part of the teachers/researchers, a disruption of hierarchies allowing self-organization deriving from the engagement with the discussion/formation process. This process is aimed at the construction of a plural community where people display their differences, "a community that supports radical heterogeneity or, to put in a word, alterity" (Larrosa, 2007, p. 249).

Our strategy is organized through a double movement: from the self to the group, from the group to the self. It is simultaneously an individual and collective experience around educational theory and educational research. Some questions are centred on the individual research projects and on the individual experiences and perspectives of the researcher, while others are more focused on the group, on common experiences and perspectives. The complex nature of educational research and educational theory cannot be fixed. So, the findings resulting from this work represent lines of flight emerging from ongoing conversation about: doing research in education (motivations, responsibilities); the role of theory in educational research (aims, research phase); the nature of theoretical contributions used; and the contribution of doctoral research to educational theory. Each topic addressed represents an aspect of educational theory and research that we consider worthy of attention. In the next section, some examples will illustrate our work focusing on these issues and the inherent interplay between plurality and communality.

Staging researchers' training regarding educational theory

An exploratory phase: mapping flaws and strengths

The first exercise (Table 1) was meant to give visibility and self-awareness about the espoused theories, unveiling the main authors and concepts called upon. The intention was to have the students themselves produce material from which to work out our further reflections, in a collaborative and participatory way. This meant providing opportunities for the group – teachers/researchers and students – to gain awareness of personal strengths and weaknesses, in a secure and non-threatening way. For this, and regarding their own research, the students were asked to name the main authors explored; the main theories of reference; and their core concepts. This exercise was an individual and written worksheet, and nine students completed it.

Table 1: *First exercise*

Provisional Title	**Main Authors**	**Theories of reference**	**Main concepts**

As a first remark it is worth noting the concerns and doubts voiced by the students: some of them expressed worries about the request itself, questioning what was meant by it and even doubting their ability to complete the task. Secondly, they showed themselves to be unsure about what constitutes theory. Accordingly, what they listed as theory was very different in scope, and it was very difficult to draw any cartography from it. Projects, published studies, political texts and legislation were listed together. And even a diversity of names was used, making it difficult to understand what was intended. Thirdly, and consequently, several authors were listed without clear correspondence either to the stated so-called 'theory' or concepts. Authors' and theories' disciplinary bond were roughly differentiated and a number of varied and overlapping terms were used. We echoed here I. Illich's claim that "some words become so flexible that they cease to be useful. Like an amoeba they fit into almost any interstice of the language" (1976, p. 32). It seemed to be a case of 'theory' within this group.

They listed a variety of authors that were consulted as part of the literature review. But they did not clearly acknowledge the ones who give a set of explanatory concepts (Silverman, 1993) and internally connected and logically consistent propositions (Odi, 1982) that can actually be identified as theory. This evidence reinforced our initial perception that students were unsure about what constitutes theory, and therefore they could have

some difficulties in using it in substantive ways rather than being simply part of the literature review. Citing several authors and works does not necessarily indicate that theory encompasses an essential part of the research.

It is relevant to remember that most of our doctoral students are professionals working in different educational contexts. In most cases, the starting point for beginning the PhD programme was the educational professional experience itself, from where the questions emerged and sustained the will for researching them. This could explain the trouble about the theoretical dimension of research work and the emphasis given to the empirical one.

Given this general picture and the highlighted difficulties, we looked for a strategy that suited our main purpose of developing an awareness of the importance and use of theory for researching education and creating educational knowledge. From this it follows that one main purpose of the doctoral seminars was kept relevant: to build self-awareness about the importance of theory and its use in the realm of educational research. For research to be theoretically robust it means that it is "based on a coherent and explicit framework of assumptions, definitions, and propositions that, taken together, have some explanatory power" (Julien, 1996, p. 56). If having a theory is "the mark of research seriousness and respectability" (Pettigrew & McKechnie, 2001, p. 62), the need to reflect upon theory deployment is ensured.

The results of the first exercise prompted us to keep searching for answers to the initial questions: in what way is theory used in educational research? What are these theories? Where did they come from? And how are they being used in current research? The following sessions were meant to give doctoral students opportunities to generate knowledge about theory uses in educational research along with the process of their own research work.

The following work was organized around the idea of a discussion group and held our assumption of generating knowledge in a collaborative and participatory way. To start up the reflection and discussion we presented students with some texts, which exemplified different uses of theory. For that we chose different authors and papers that could give a picture of different researches and theories espoused (Table 2). The purpose was to enhance different uses of theories in researching and discussing educational issues: from Linuesa's (2007) discussion about theory and practice relationship and dependencies, to Edwards' (2009) claim about reframing theory as a material and a materializing practice, and Carr's (2005) position on the role of theory in the development of what he called "an educational theorist"; from Popkewitz, Olsson, and Petersson's (2006) discussion of the "unfinished cosmopolitanism", examined in the realm of a learning society paradigm, to Ramos do Ó's (2003) historical analysis of schooling; from Vlieghe, Simons, and Masschelein's (2010) way of dealing with the "public character of education" based on the study of laughter as a specific form of corporeal behaviour, to Stanley's (2009) use of an

alternative theoretical framework ("complex responsive processes") to analyse a complex dynamic phenomena (human knowledge and knowing), and Clark's (2005) explanation of learning, claiming for a neutrally based connectionist model of learning as opposed to the computational model.

The first group of texts was identified as fundamental readings, introducing the problematic under study (Carr, 2005; Edwards, 2009; Linuesa, 2007).

Table 2: *Papers used in doctoral seminars*

Work session	**Papers and authors**
November, 2010	➢ Linuesa, M. C. (2007). La complejidad de las relaciones teoría-práctica en educación. *Teoría Educativa, 19*, 25-46. ➢ Edwards, R. (2009). *Materialising theory: Does theory matter?* Keynote Symposium: The Theory Question in Education. BERA Annual Conference, Manchester. ➢ Carr, W. (2005). The role of theory in the professional development of an educational theorist. *Pedagogy, Culture and Society, 13*(3), 333-346.
January, 2011	➢ Popkewitz, T., Olsson, U., & Petersson, K. (2006). The learning society, the unfinished cosmopolitan, and governing education, public health and crime prevention at the beginning of the twenty-first century. *Educational Philosophy and Theory, 38*(4) pp. 431-449. ➢ Ramos do Ó. J. (2003). *O governo de si mesmo. Modernidade pedagógica e encenações disciplinares no aluno liceal (ultimo quartel do sec. XIX-meados sec. XX)[The government of itself. Pedagogical modernity and disciplinary scenarios of the secondary student (last quarter of XIX century to mid XX century)*]. Lisbon: Educa Editors.
March, 2011	➢ Vlieghe, J. Simons, M., & Masschelein, J. (2011). The educational meaning of communal laughter: on the experience of corporeal democracy. *Educational Theory, Vol. 60 (6*), pp. 719-734. ➢ Stanley, D. (2009). Complex responsive processes: an alternative interpretation of knowledge, knowing, and understanding. Complicity: *An International Journal of Complexity and Education. Vol. 6 (1)*, pp. 29-39. www.complexityandeducation.ca ➢ Clark, J. (2005). Explaining learning: from analysis to paralysis to hippocampus. Educational Philosophy and Theory. Vol. 37 (5), pp. 667-687.

A second group was chosen as examples of different uses of theory: interpretative (Clark, 2005; Stanley, 2009); critical (Popkewitz et al., 2006); and reflective (Ramos do Ó, 2003; Vlieghe et al., 2010). The aim of interpretative use of theory is to deepen and broaden the "understandings

of 'everyday' interpretations and experiences"; critical theory aims at "exposing how hidden power structures influence and distort such interpretations and experiences" (Biesta, Allan, & Edwards, 2011, p. 226); while reflective use of theory relates to autonomous ways of theorizing, concerning reconceptualization and redescription of educational processes and phenomena.

The texts used for discussion also differed in the themes and objectives addressed, as well as in the scientific and disciplinary lenses through which the authors looked. For example, while Clark (2005) situated his analysis within cognitive science and neurophilosophy, Stanley (2009) uses the scope of an organizational theory framework. The standpoint of a post-critical theory of education (social studies) was taken by Vlieghe et al. (2010), though Ramos do Ó (2003) took a historical perspective. A political philosophy and the politic of knowledge was the stance taken by Popkewitz et al. (2006), while Linuesa (2007) calls for a pedagogical voice.

The purpose of this diversity was to expose doctoral students to different theoretical stands and frameworks, as well as to help gain evidence of the varied uses of theory. Sometimes, the author him/herself guides our understanding by clearly explaining his/her standpoints and disciplinary boundaries (e.g. as Ramos do Ó, Stanley and Clark do). At other times, the author's scientific network has to be disclosed from the text itself. In some cases, the strategic path is declared (e.g. Carr's "autobiographical excursion"), while in others it is unclear or even mysterious. By providing doctoral students with opportunities for immersing in a variety of cases we intended to foster theoretical awareness so that their research work could gain in theoretical robustness and strength.

How did the group achieved this? The first attempt was surprisingly modest: students were caught more in a descriptive reading, 'struggling' to understand the contents of the texts. It was only after a second reading and discussion experience, shared within the group, that they were able to identify, interpret and integrate some contributions of the texts into their perspective about educational research. In our view, the diversity of the possible uses of theory was evidenced and students progressed towards a clearer awareness regarding their own perspective about educational theory and research.

From the students' point of view, the experience of reading and discussing was recognized as an important one. As some students said, "it was extremely useful" since "it helped us to reflect upon our own [research] work from an outside position". On the other hand, "under the motto 'uses of theory' [the group] could look at different ways of using it". They also acknowledged the "presence of multidisciplinarity" and authors' "different background".

Considering the overall results of the exploratory phase we decided to deepen doctoral students' exposure to theory in a more systematic and intensive way.

An intensive phase: the plural and the common within a research community

The second phase was developed through the analysis of a set of questions that were discussed during the monthly seminars. These questions related to (a) educational research (motivations, responsibility and aims), and (b) theory and educational research (theory contributions, where theory fulfils its function, identification of theories). In addition, we kept in mind the possibility of including other emergent questions (c). The following data arise from the discussions within the seminars that we have recorded and analysed.

- *Educational Research*

Doctoral students were questioned about the *motivations* for doing research. The analysis of the data revealed that arguments of a different nature were presented, as follows:

> *Personal*: "it also happened that I had recently become a mother…it was something that made me very aware…";"the research has much to do with our way of life and our life experiences"; "It is part of our way of being, thinking, and locating and identifying what bothers us".
>
> *Professional*: "motivation is very much connected to our professional paths"; "the need to try to understand the things with which we work"; "as I watched the practices of either students or professionals"; "try to understand our working context".
>
> *Epistemic*: "A personal need to deepen knowledge"; "need for studies… to deepen and understand reality"; "why do things happen that way?"; "To understand why?"

These three dimensions are interwoven in the discourses of the doctoral students. The given reasons move between different areas/domains of experience, reflecting the interdependence between the factors that motivate our doctoral students to do research in education and the inherent purpose to integrate all domains of experience (personal, professional and epistemic). Although some of the reasons are different in their specificity and related to doctoral students' individual experiences, they cover different but interconnected domains. Students' multiple individual trajectories converge in the emergence of a common understanding of the possible kinds of motivations for doing research.

The doctoral students were also questioned about the *responsibility* of doing educational research, this being understood to be mainly towards:

> The *professional community* (community of practice), in the first place. It was understood as a responsibility towards the improvement of practices and toward the participants involved in the research (institutions and individuals). As stated by students: "to improve practices"; "to explain that there are other ways [of doing science and of evaluating]"; "commitment to an institution that received a research proposal, which is the field of research, which is the school itself, where the research is being developed and with the people belonging to it"; "to go to the institutions and have contact with people, with the participants".
>
> The *scientific community*, in the second place. This was manifest in the form of possible theoretical contributions and dissemination of research findings: "although very modest, ours are contributions (…) we make theoretical insights, we link different fields of theory"; "being faithful to the authors we choose"; "to give feedback is our contribution"; "[a commitment] to building a scientific thought".

Few other aspects were presented relating to responsibility towards the community in general and to research itself. It is interesting to note that the majority of arguments were centred on the responsibility towards practice and the professional community. This may be understood as a consequence of the characteristics of this particular group – most of them are teachers or educational agents working in different educational contexts – schools, higher education institutions, professional/vocational training associations. The presented arguments express the plurality of concerns and of professional backgrounds, but also show an inherent characteristic of educational research – its relation to practices and contexts of practice.

When questioned about the *aims of research*, doctoral students' arguments were centred on:

> *Action* (modifying, enriching, transforming…) related to both contexts of practice and knowledge. For example: "so that the agency responsible for training can understand how to change the references of training in order to achieve certain objectives"; "in the context where the research is being developed I expect to be able to contribute to change"; "in order to contribute to reflecting about the processes… and by reflecting about the processes, which leads to change".
>
> *Reflection* (understanding, explaining, knowing…) also referring to contexts of practice and knowledge. For example: "reflecting about the practices"; "we want to reflect, to understand in which way adult education can be improved"; "I feel that there is something to be enlightened, (…) about reading situations with children"; "a record, a testimony will remain."

Different arguments about the aim of the research projects were presented, mainly related to explaining and understanding. Once analysed in their totality we can identify the main purposes as technical (answers to questions, new ways of doing) and cultural (interpretations, understandings…). Responsibility, motivations and aims were centred on the ideas of understanding, improvement and change.

- *Theory and educational research*

With regard to *theory contributions* to the development of the research purposes, the analysis of the discussions showed that these were understood mainly in terms of:

> *Organizing* the research at different moments. This perspective is shared by all the doctoral students: "we understand that theory contributes in terms of organization"; "So, initially, theory is organization, is the guiding, afterwards it is reorganization"; "theories guide our action and guide our thinking"; "to guide our actions and reflections". In some discourses theory also appears as disorganizing: "theory helped me to disorganize and to find an organization that I think is different". However, this disorganization is understood in the sense of a reorganization, a precondition to reorganize the research.
>
> *Planning* the research was also a central role attributed to theory: "projecting the path and walking the path"; "projecting the path"; "awareness of our options". "To find the path…to select and redefine the most adequate concepts for this path; to justify the choice of the path; to find…the best shoes to walk the path…"
>
> Both to open/explore *new possibilities* and to find a *focus*: "it helps us to narrow down but also pave the way for other theories (…) or even paths that we had not previously thought of"; "to enrich the work scientifically and to assign possibilities to each one's path"; "opens up a range of possibilities"; "It is as if it was our binoculars, before we didn't know and it was very broad…".
>
> To *make sense*, to find a direction for research: "they attribute a sense to my research questions"; "It helped me to make sense of my research"; "to understand my before and my after"; "then it starts to make sense again, the theory you have read".
>
> The relation between *theory* and *practice* is also addressed in some of the doctoral students' discourses: "a PhD thesis cannot have just this way, just practical and instrumental, there is any other way, there is some consistency of work that only theory can help"; "There are theoretical frameworks that are ... they define themselves as fields of action ... it cannot

> even be called a theoretical framework, turns out to be a theoretical-practical field...".

From the analysis of these perspectives we can identify different roles attributed to theory within educational research as perceived by the doctoral students. However, from this diversity emerges a common characteristic of the perspective about the role of theory in educational research: it is mainly understood as instrumental – to select, to justify, to redefine, to justify research options and paths. As stated by one of the doctoral students, theories are understood as "just a means to attain my purposes" or, in another student's perspective, "it is an instrument, a thread…it is a complementary resource". This instrumental perspective at work in doctoral research in education is manifest in the absence of conceptualization and problematization in the discourses about research, in the sense that we couldn't identify a *defamiliarization* of common sense. Only in one discourse was there problematization related to practice and the relations between theory and practice.

The question about *where* theory fulfils its function in each individual's research was answered in different ways. The diversity expresses the plurality of the academic and professional paths of doctoral students, their diverse motivations and the different kinds of research they are developing concerning aims, object of study, theme or methodological approach. Most of them agree that theory has different functions and that it fulfils its function at different moments of the research, although not in the same order during the process:

> *Before*: "theory appears still when I am in my professional experience when facing problems that caused me some perplexity and that led me to do some readings"; "in my specific case theory appears even before the research. It was my motive for starting doing research".
>
> *Literature review* (theoretical framework) and definition of the *problem* and research questions: "in the literature review"; "the theoretical framework"; "another thing is to look [at reality] from a previous theoretical reflection"; "it is in the problematic [definition of the problem and research questions]".
>
> *Empirical part*: "first of all it is on the empirical part…when I'm in the empirical field and some practices, and some answers of those practices are identified with theory…it is on the execution that I understand my theory"; "In my personal case the contribution of theory is happening especially in the empirical part".
>
> *Conclusions*: "this confrontation between theory and practice occurs more pre-eminently at the end"; "and at the end in the conclusions".

We returned to this question in a later session and we realized that, although the main idea had remained – "always and everywhere" – there was a reinforcement in the awareness of the role of theory and the use that was made of it during the research process, as well as more security in the answers and arguments presented.

The analysis of the question about the *identification of theories* that are present and are considered relevant for each doctoral research revealed that the students had some difficulty identifying theories; most of them refer to concepts, themes or topics such as: "administration and school management"; "educational community (…), autonomy, decentralization"; "quality of education"; "lifelong learning, situated communities of practice; ethnomathematics"; "professional identity (…) training"; "development (…), emotions, autonomy"; "sociological approach".

- *Emergent questions*

The questions we have been analysing so far were previously determined by the teachers/researchers; they represent the deliberate qualities of teaching (Davis, 2004). However, during the sessions other questions and issues arose and were stated, both by the teachers/researchers and by the doctoral students, which were not previously defined. These illustrate the participatory and emergent nature of the work developed in the working sessions and the accidental qualities of teaching (Davis, 2004), showing the self-regulatory nature of the process.

The following question emerged out of the discussion about the role and use of theory in educational research and represents a replacement, a redefinition of the previous ones in order to direct it towards the research/er. The question is reframed in terms of the possible contributions of educational research for theorizing education. The *contribution of educational research for educational theory* was understood mainly in terms of:

> *Improvement of practice and application of theory*: "to improve the way in which the practical implementation of educational policies is made"; "the issues related to teacher education… contributions for the curricular organization of courses of pre-service teacher education […] training strategies"; "in the practice of literature… in the pragmatism of the teaching of the discipline and its practical effects on students"; "how you can foster the relationship with the community". This was the predominant perspective.
>
> The *methodological approach*: "the use of action research as a mode of investigation"; "and even from the standpoint of practical research, the research methodology can also be a contribution"; "at the level of methodology there is also a theoretical contribution"; "at a methodological level".

> *Conceptualization and problematization*: "the ambition is not to develop a theory but to contribute to the ones already existing"; "the most relevant theoretical contribution will be how I look at this object, at this field and how I bring the object to this field"; "the way we look at what is educational…this idea of education understood in a broader sense, not merely formal…"; "it contributes because it reinforces a particular set of theories…"; "to extend this concept, introducing questions regarding this [traditional] approach to organizational supervision"; "how you articulate research about the human subject, the teacher and about the organization…" With regard to this particular issue we have identified perspectives about the construction of the object of study and the reinforcement and articulation of theories and concepts.

Another interesting aspect emerging from our discussions, particularly from the discussion about the previous issue, was the problematization of the kind of contribution that doctoral research may make to educational theory. The *kind of contribution* that could be considered as a theoretical contribution was brought into the discussion by the students, as well as the purpose of theory construction underlying the different research projects: "it seems very audacious to want to transform that into a theory … it is more a grain of sand… and I think that in order to think about a theory … it has to be really a theory …"; "does someone propose constructing a theory? ... or it will arise?..."; "It isn't a previous plan … it will happen, we recognize it and we become aware that we are working in a theoretical field"; "it has to be consistent … it has to be broad…";"the fact that we contribute to the development of theory by giving a contribution; it is to develop a framework of thought, ideas ..."; "the difficulty in defining a theoretical contribution, or what it means to theoretically construct upon something. Maybe it only makes sense to construct theoretically-empirically."

Finally, another emergent issue brought into the discussion was about the *scientificity* of educational research and the *scientific status of educational sciences*: "it is so important to reflect about what is a theory and what is a science"; "in order to get into educational science we need to know what a science is"; "In which way can I find science in my work? […] What will tell that my work is a scientific one or not?"

The emergent questions exemplify the recursive nature of the training process and its openness to unpredictability and alterity. The process we have developed promotes immersion in/exposure to given situations/questions and expresses the purpose "to complicate and pluralize our understanding of events, their elements, their relations and their domains of reference" (Biesta, 2009, p. 174). It presupposes the existence of multiple trajectories, the diversity of interests, aims and approaches to educational research and educational theory. The common, the research community, is a construction, not a presupposition; it is an

accumulation of experiences that occur in the movement (Revel, 2009). The reflection about education research and educational theory emerges out of our work as "a polyphonic letter, made of many voices, like a fabric or pattern of voices" (Larrosa, 2007, p. 257).

Afterwards

The outcomes reported here represent our first step towards understanding the use of theory in educational research and reflect an attempt to design a strategy for educating researchers. We undertake our endeavour as an 'educational approach' directed towards the researchers as *subjects*: as *authors* of development and knowledge creation; authorship that is nested within a community of authors (Ardoino, 2001; Bransford, Brown, & Cocking, 2000). We detach ourselves from a 'technical approach' that understands researchers' education merely as 'training', centred mainly on the acquisition of 'technical' competencies. Our educational approach emphasizes the need to promote researchers' critical and reflexive thinking and their engagement with theoretical modes of educational inquiry embedded in social and ethical commitment and judgment.

From the work described above and the emerging findings, we highlight doctoral students' move from a stage of theory avoidance towards increasing theory awareness. This theory avoidance has been identified in literature (Grover & Glazier, 1986; Walker, Golde, Jones, Bueschel, & Hutchings, 2007) and seems to be a usual characteristic of beginning researchers. However, no consensus has been reached concerning the best strategy to promote theory awareness within researchers' education. Ours is a possible strategy deeply rooted in a conception of education, of educational research, the role of theory in educational inquiry, and researchers' education. As stated elsewhere (Alves & Azevedo, 2010), we see education as a multi-referential field, characterized by interdisciplinarity and interdiscoursivity. We hold to Klein and Newell's (1998, p. 20) idea of interdisciplinarity "not only drawing upon two or more disciplinary perspectives […] but also attempting to integrate insights from these perspectives in a way that may lead to the emergence of transcendent perspectives". As such, education needs to be understood as a "transphenomenal enterprise" (McMurtry, 2011; Davis & Phelps, 2005). Deriving from this plurality we assume the need for an interdiscoursive approach that may lead to integrated perspectives, which emerge by "negotiating the relationships between disciplinary discourse […] never reducing on conflating" (McMurtry, 2011, p. 21).

This conception of education has direct implications for the understanding of educational research: for the definition and confinement of the research object; for the methodological approach designed; for the theoretical frameworks composed and their use during the educational

research process. Educational research encompasses different types of entities (personal, social, cultural, biological and physical), and this justifies the need for "diverse categories of expertise and diverse methodologies" (Davis & Phelps, 2005, p. 2). Developing this idea, the authors suggest a kind of "border crossing", meaning the "need to step outside the limiting frames and methods of phenomenon-specific disciplines". Accepting this feature, educational researchers need to make use of interdiscoursivity, because of the specific discourse – "structurally coherent domain of language use" (Davis and Phelps, 2005, p. 3) – of each level of analysis and/or disciplinary field (Alves et al., 2012). Therefore, the pursued object in educational research ought to be considered in its dynamic, plural and even diffuse forms and manifestations. As we have been arguing, the approach that best honours this view of education is the one that assumes a *comprehensive* nature, encompassing the dynamics of the existing interactions. The theoretical approach deriving from this perspective acknowledges different concomitant trends: using theories derived from different disciplinary fields; framing theoretical perspectives in terms of "productive conversation rather than reductive arguments" (Davis & Sumara, 2012, p. 39); and building distinctively educational forms of theory and theorizing (Biesta, 2011).

As we noted before, the fact that students in doctoral programmes in education have different scientific and professional backgrounds makes it easy for them to use the explanatory frameworks from their specific disciplinary field. When confronted with educational phenomena (plural, dynamic, multi-referential) the reliance on theoretical references commonly used is undermined, which leads to an initial disorientation that may explain the 'theoretical avoidance' we have been referring to. The process and strategies developed within our research group envision that doctoral students deal with this avoidance, exploring the trends mentioned above (theories from different disciplines; productive conversation between different theoretical perspectives; and building educational theory and theorizing).

This pedagogical process of educating researchers is an ongoing enterprise requiring further recursive conversation in order to contribute to knowledge production within the field of education. The process analysed here reflects the way we have been dealing with the absence of a 'theoretical cartography' within education as a scientific realm and its implication for research. The pursued aim is not to reach a fixed map, but to recognize that interdependencies and interconnections are constitutive of education and educational research. We envision this cartography as a decentralized dynamic network, encompassing the development of both the research process and the researcher as subject.

The scientific status of education remains an open issue, with which the researcher is constantly confronted during the research work. Our students' words clearly illustrate this concern: "it is so important to reflect about what is a theory and what is a science"; "in order to get to

educational science we need to know what is a science"; "In which way can I find science in my work? […] What will tell me that my work is scientific or not?" These questions may be kept as driving forces, prompting the research endeavour.

The process we have been developing, and that was partially analysed here, reflects the assumed character of educational inquiry, the nature of this educational research community, and the ways in which research and teaching are conducted in this particular field and context. These issues will be further explored in the ongoing conversation, taking place during the doctoral researchers' education.

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Educational theory and the education of researchers at the University of Seville. Analysis of contents of a doctoral programme of the department of theory and history of education and social pedagogy

Antonio Bernal Guerrero

Due to *the general pedagogy derived from the end of education*, from the early 19th century, by Herbart (1983), the so-called autonomy of pedagogical knowledge meant, actually, the establishment of it in the field of philosophy. The word 'pedagogy' adopts noticeable speculative connotations during the process of the accumulation of knowledge about education – developed from the 16th century to the 18th century and, especially, during the 19th century. The breaking up of pedagogy is a phenomenon initiated in the 20th century and had predominantly a methodological nature. In that way, experimental pedagogy was born, as a clear expression of the growth of positivism which characterized a great part of the epistemological thinking in the last century. Nevertheless, the traditional orientation of speculative reflection, with a Germanic origin, carried on increasing in Europe, under various types of denominations: general pedagogy, rational pedagogy, fundamental pedagogy and systematic pedagogy. Because of all this, the accumulation of contents in education and the spread of them –concurrently, to the development of human sciences, which were increasing their focus on the problems of educational order – ended by generating conceptual and structural changes which led to the appearance of the term 'educational sciences', which replaced the classical word of 'pedagogy'. This change was not due to mere formal questions but was an agreement with the development of the pedagogical disciplines, characterized by their specific methodological perspective in a single central object: education. Although the interest in reaching a scientific unity in education did not stop, with the intention of integrating the contributions of the different disciplines in a single systematic framework, and with the appearance and development of educational sciences, a definite change in focus was produced, as well as a methodological change. It went from a synthetic and unitarian focus, characteristic of pedagogy, to an analytic and plural focusing, particular to educational sciences. At the same time, it went from a conceptual reflection – classic pedagogy – to a multi-methodological proposal, where various types of methods, which were typical of human and social sciences, were included.

According to the Herbartian tradition, the term 'pedagogy' was connected to the systematic study of education, characterizing it as a scientific

discipline, predominantly theoretical and related to the philosophical field of the goals, from which performance norms emanate. This tradition and the emergence of the educational sciences, as a result of the multiplication of contents and the methodological diversity in the educational field, are essential in order to understand the successive incorporation of the pedagogical university studies in Spain within the respective faculties which have been receiving them: traditionally, philosophy and arts faculties[1]; during the 1970s and 1980s the faculties of philosophy and educational sciences; and finally, since the 1990s, faculties of education or educational sciences[2]. In the previously mentioned decades, the change of the term 'pedagogy' to 'education' has been consolidated within the pedagogical discourse, and at the same time, the widespread use of the name 'theory of education' instead of the classical expressions of 'general pedagogy' or 'systematic pedagogy' has been reinforced, and the institutional separation of the philosophy faculties has been produced. The new epistemological approaches have reoriented the study on the educational phenomenon in the sense of distinguishing between education as a fact or product and education as a process or action, emphasizing the need to integrate the description, interpretation and comprehension of the educational phenomenon as well as establishing norms in order to guide educational action.

Complexity is the term that probably best defines what reality is. The inability to globally understand reality, led to the breaking up of knowledge into multiple fragments or disciplines that at the same time have been developing or originating others. But the analysis of reality itself and the knowledge obtained in recent decades have emphasized not just the complexity which characterizes it, but also the impossibility of establishing static divisions or watertight compartments between the different scientific disciplines, by virtue of the necessary research on a

[1]The traditional specificity of educational knowledge, as a field of knowledge in human sciences opposite to natural sciences, fundamentally comes from the nature of the affirmations formulated and the way in which it has to be done. Quintanilla (1976) makes a radical distinction between both types of science: on the one hand, the human phenomena present sense, whereas the natural ones do not; on the other, the practical interest in human science knowledge has not got a technical-manipulative nature, but is liberating, i.e., there is an ethical and political interest, not just a pragmatic one. The fact that educational knowledge within the human sciences was included could be considered a historical-constitutional act. Institutionally, studies on education were consequently being included in philosophy faculties.

[2]At the University of Seville, since 1993, the old section of educational sciences in the Philosophy and Educational Sciences Faculty joined the traditional University College of Teaching Profession Education in order to constitute the so-called at present Educational Sciences Faculty, where several university qualifications are integrated, among them the current Degree in Pedagogy, in agreement with the European Space of Higher Education.

coherent integration of knowledge. As Morin (2001) has flatly declared, there is at present a transgression of limits between different disciplines which tends to find compatibility between methodological treatments and others, that is, those which try to make the unit and the multiplicity coherent from a logic complexity. This process needs a paradigmatic reform, a reconstruction of knowledge based on the articulation of the different disciplines, beyond the traditional bifurcation of knowledge between 'humanities' and 'sciences'. In this context, educational sciences, assuming the uncertainty generated by the complexity of what is real (they are sciences in a permanent plan of evolving in sciences), can be considered a systematic totality, where every specific discipline is related to others, in its identification with the study object as well as in the methodological procedure used to elaborate knowledge and put it into practice in the different educational realities. At the same time, educational sciences are bound to other scientific fields different from the educational field in order to obtain the necessary contributions to the area of study itself (these sciences configure a system creating its autonomy, paradoxically, thanks to its opening). In this sense, educational sciences can be conceived "as an organized complex system formed by a wide group of sciences which are interrelated and which are developing with a relative autonomy" (Aznar, Gargallo, Garfella,& Cánovas, 2010, p. 192).

Within the scientific 'corpus' of educational sciences, the theory of education is a central discipline, as it is normally conceived in Spanish universities, as a theoretical discipline (concerned with the comprehension of the factors which take part in the educational act and process) and referred to the practice (to know how to do it). It is a vertebrate discipline which is able to interconnect the disciplinary plot of educational sciences, being informed by the most scientific vocational disciplines (integrating, as well, the philosophical, historical and projective perspectives to confront, in a contextual way, the educational action) as well as by the theoretical-practical disciplines, mainly directed towards application. The theory of education may be, consequently, a key discipline for the inter-articulated joint of the different educational sciences and within them and other disciplines, which belong to other knowledge fields. On the other hand, permitting disciplinary autonomy, it may propel decisively the necessary interdisciplinary interaction, which is so claimed from a systemic conciliatory focusing on the complexity of what is real and concerned about the overcoming of the fragmentation of knowledge, which has reached its highest development in the hyper-specialization of knowledge.

Forms of educational (meta) theorizing

Educational reality could be contemplated from different perspectives, which means that we should observe it from the complexity it contains. The present development of educational sciences is possible, basically,

because of considering educational reality as a whole, as a system characterized by complex external and internal interactions. In some ways, a systematic knowledge is shaped, which, together with the strict scientific dimension, deals with overcoming a risk of scientific reduction to confront the complexity of the educational reality, opening up to a multi-methodological perspective, which is able to undertake the construction of a pedagogical knowledge susceptible to interpreting and orienting the practice of education.

The methodological debate is open at the heart of educational sciences, where it is not possible to apply the same methods as in the natural sciences field (Alves & Azevedo, 2010). We may establish pedagogical knowledge from a particular focusing adopted to conceptualize the relationship between knowledge and reality. In this sense, there are several ways. However, it must be considered that in order to appreciate the different forms of creating a pedagogical knowledge, we need to go to two levels: on the one hand, the researching methodology, concerned with the procedure which must be followed for the construction of knowledge (theory); on the other hand, the scientific methodology, which deals with analysing its own concepts and methods used to produce knowledge (meta-theory).

Within the current panorama, the old scientific conception, represented vigorously by contemporary positivism, which sets the origin of changes in the external reality, establishes alterations quantitatively and brings about learning by association, has been moving away from what seems to be an epistemological model for pedagogical knowledge. The traditional ideal of science proclaimed by logical empiricism has been vanishing progressively, and at the same time it has not been possible to find the verification criterion able to establish an unequivocal correspondence between knowledge and reality, as an indispensable condition to talk about what is objective and what is real. Popper's 'methodological falsificationism' (1982) moves away from that goal and looks for a demarcation criterion between what is science and what is not: the 'falsifiability' criterion. Popper's critical rationalism agrees that truth and falseness in a statement depend on its correspondence or non-correspondence with reality, but the concept of correspondence is considered a hypothesis or a conjecture. There is an explicit renunciation of the research of certainty and security; however, it is declared that science development is a process of elaboration and contrasting by falsificationism of theories. The demystification of the absolute objectivity of scientific knowledge realized by Popper leads to the consideration of a more scientific rule for social and human realities, and consequently for education.

Other authors and approaches have delved into the falsifiable perspective[3] with diverse and original contributions. In the style of the structure of political revolutions, the structure of the "scientific revolutions", which Khun (1975) referred to, delves into the intricate relations of the scientific logic with its social and cultural context, giving more relevance to the activity realized by the scientific community to obtain knowledge than to the justification of it. In that way, every now and then, every period presents a way to explain and comprehend the world, representing in that way a paradigm which is shared by the members of the scientific community, in order to end in a new paradigm, in a new way of thinking and dealing with the problems of reality. As Popper did, Lakatos (1983) also rejected the verifiability criterion as a definition of something scientific. His contribution, compiled in "scientific research programs", is open to learning and presents evolutionary aims with a progressive improvement. It seems, therefore, that knowledge lends itself to an evolutionary conception, since, in any case, the supposed objectivity of it is understood as the result of the organization of the experiential world in the form of 'principles', 'theories' which are permanently exposed to the world of experience. Knowledge, in the end, leads to continuity and change and it requires a dialogic ability capable of establishing complementarity and balance between the appearance of new constructs and the constant selection of them. The evolution of 'conceptual communities', defined by Toulmin (1977), advocates, in this sense, an evolutionist notion of science in a qualitative sense of reorganization of knowledge, opposite to a static and quantitative idea, in the sense of increasing knowledge. The new concepts, according to Toulmin, depend on the procedure employed and on the way in which the scientific community behaves; that is, the changes in the scientific progress are connected with the social context of interpretation, which represents the community itself. In other respects, an evolutionist perspective conceives knowledge as a function of being alive, and consequently, it has evolved with it.

The crisis of the foundations of certainty in science drives an evolutionary base. Therefore, a principle of uncertainty emerges (Morin, 2001), since the enormous amount of interactions between the elements that constitute the world of phenomena cannot be absolutely determined, which creates an inability to reach certainty about reality, in order to formulate an absolute law or in order to conceive an absolute order. Knowledge always depends on interpretation, and it can even be added that, from a

[3]As a generalized theory of interpretation, the hermeneutic methodology (Gadamer, 1975) can also be considered within a falsifiable focusing. The discovery of sense is based on an anthropological model of interpretation, which includes empirical, logical and dialectical categories. Every interpretation can be critically judged from an opposed anthropological perspective, where a criterion referent could be the ideology of departure itself.

neurological point of view, knowledge is never a reflection of what is real, but a mental translation and reconstruction, which can induce error (Damasio, 2010; Maturana, 2009). A new complexity theory makes a breakthrough, which leaves behind it the principle of absolute objectivity, in some way reconciling itself to the Kantinian principles in order to explain the construction of knowledge, emphasizing the ability of reconstruction and readjustment of systems by means of research on a dynamic balance. The constructivist focusing emerges with an indisputable force as an epistemic modality: knowledge is not just a matter of relative invention and of contrasting theories in competition, as could be deduced from critical rationalism, but it is mainly linked to the development or maturing of operating structures, as Jean Piaget (1970) stated. Opposite to the traditional theory of knowledge, which used to hold the existence of an immutable reality independently from the observant subject, the constructivist focusing, in its radical version, declares that 'reality' is constructed by the mental mediation of the subject itself. In short, it states that traditionally reality was mixed up with the vision of it; ideas are not an exact reflection of reality, but a translation or construction of it through the neuro-cerebral system which produces representations, notions and ideas by which reality is perceived and conceived. So, theories are forms of relating reality and knowledge. The constructivist epistemic focusing states the idea of knowledge as having a relational and conjectural base and emphasizes the active function of the subject in the construction of reality.

Reality is created, in the sense that it is structured and modified through the effort to find it out and explain it. What we know about reality is influenced by our own cognitive processes. Nowadays, from a moderated point of view, constructivism is more concerned with how the subject constructs knowledge and not just with what is known. We find here a conceptual differentiation between a limited reality to the properties of things ('objective' reality) and a multiple subjective reality generated by the attribution of value to those things when we refer to them. In this last sense, reality comes to be the meaning we assign to it and the way in which we communicate/express it[4]. So, the existence of an external reality[5] and the fact that the subject constructs the knowledge that approaches him to that reality are admitted. In this process, there is an interaction between mental activity and the world of experience through which the subject organizes the information coming from the world of experience, transforming it into knowledge. This is elaborated from the

[4] The interrelation produced between thought and language is essential, since through it, the perception of realityis configured. The mental narrative metaphor enhances the social condition of knowledge development and its interpretative characteristic (Bruner, 1991). In this way, an epistemological framework is presented for a mental theory that considers and articulates, by means of explanations, the different variables in the linguistic and historical way in which human experience of auto-conscious personal identity takes place.

[5] It is considered, in this way, 'objective' what is "intersubjective", an agreement between scientists based on contrasting.

perception realized by the subject and the sense he gives to in order to perceive it.

Kant used to say that things themselves are unintelligible and that they become intelligible thanks to our mental activity. The Kantian synthesis, which overcame the dialectical fight between rationalism and empiricism, can be considered as the most diaphanous modern precedent in the constructivist epistemic focusing. Educational sciences as scientific disciplines accept the constructivist epistemic principle. Consequently, the validity of the constructed pedagogical knowledge is relative, since what is 'objective' cannot be compared with the 'truth' considered in an absolute way, but in terms of perspective. In this way, different interpretative versions with similar validity – relative – obtained by contrasting satisfactorily different parameters may be presented about a unique phenomenon. In this sense, we can consider the possible existence of different theories competing against each other, whose applications must be in accordance with the most suitable criteria with the desired goals (Goodman, 1990). Overcoming absolutist focusing, characteristic of modern rationalism and empiricism, the constructivist focusing comes from an evolutionary conception in relation to knowledge construction, assuming that every verification process is dynamic. Pedagogical knowledge, connected to human and social sciences, cannot resort to decisive empirical confrontations in order to validate its theories, because social phenomena can only be produced in open systems, that is, those systems where there are no invariable empirical regularities. Opposite to the use of absolute rational criteria, it is presented the application of the dynamic rational criteria, because if knowledge changes, there will also be a change in criteria for their assessment.

All this indicates that the complexity of the studied object in pedagogical knowledge claims a complex epistemological reintegration. Different epistemic models (falsifiable, systemic and that of the complexity of what is real, constructivist) can be joined together to support the scientific discourse (meta-theoretical) about education. A focusing of these characteristics is claimed by the interdiscipline of educational sciences, which realize, about the same object of knowledge, convergent contributions (Aznar et al., 2010). From a multi-epistemic perspective, it may be considered that, once the intention of a verifying research in order to set up knowledge is abandoned, according to Popper, what is relevant is the use of a 'preference rule' in order to elucidate between theories competing against each other, trying to find signs which show the virtualities of a theory facing a different one. At the same time, it should be bared in mind that the basic units on which the epistemological analysis is carried out should not be placed on the level of scientific statements and their logic relations, but in wider contexts, which include concrete programmes of investigation, to assess their level of specificity, as was suggested by Khun and Lakatos. In this way, it is necessary to depart from an evolutionary conception of science, as was indicated by the

aforementioned epistemic focusing, a consideration by science that implies a reorganization of knowledge and changes linked to the social context of interpretation. Of all this, it can be deduced, despite its poor incidence including investigatory practices in general, the increasing need for multi-disciplinary works, which can have, in turn, several specialties, for the systematic study on complex systems such as those that refer to the field of educational phenomena. In general terms, this is the meta-theoretical focusing, which we can observe at the University of Seville, echoing the current epistemic thinking.

Manners of use of the theory in the realized educational investigation

Within the well-known forms of social scientific knowledge (empiricist-analytic, historical-hermeneutic[6] and critical) (Carr, 1996), a typology spread with an unquestionable success within Spanish universities in the last decades, the construction of the educational theory generally employed in the Department of Theory and History of Education and Social Pedagogy[7], from the University of Seville, have focused mainly on interpretative and critical approaches.

Educational investigations in Spain (Sandín, 2003; Vélaz de Medrano, 1997) have been reinforcing progressively the contextual, individual and social dependence on the investigation, beyond their connection to a strictly logical dimension. The traditional scientific procedure, represented by positivist formulas, has been minimized by the singularities and the complexities of the educational phenomena. Thus, it has been generating alternative manners of theorizing on and investigating education, trying to find a different approximation to educational processes. Nowadays, there is a notorious flexibility and heterogeneity in perspectives, methodologies and results, according to the complexity of the investigated object, to the context in which the multiple educational phenomena are developed, and to the scientific learning of the educational investigators themselves. In this sense, the last variable may be decisive in the configuration of a particular 'theoretical culture', as could happen in the case we are concerned with.

[6]In terms of the operation of the present work, this focusing is called 'interpretative', since within it we can establish a variety of categories which belong to different trends, not all of them in the strict sense hermeneutic, as we will see later.

[7]It should be pointed out that the investigation realized in the department is assigned to an area of knowledge officially recognized in the Spanish university system for more than 20 years, the area of educational theory and history. This area is codified with number 805, within all the existing areas of the different knowledge fields.

Analysis of the doctorate programme 'Education and Society'

From the academic year 1994/95 to 2008/09, the corresponding courses of the doctorate programme 'Education and Society' were delivered, from which doctoral theses are still defended in the heart of the department. In the last few years, another doctorate programme ('Educational Competence and Social Mediation') has been created, from which, obviously, no finished piece of investigation has yet been presented. At its beginning, from 1988 to 1993, courses of several doctorate programmes were held by the department (e.g. 'Education in the European Framework' and 'Quality of Education in the Modern and Contemporary World'). In any case, because of its great productive and social impact, our *analysis of content* (Pérez Serrano, 1994) will focus on the programme 'Education and Society', as it is the most relevant within all the existing programmes for a meaningful interpretation of the investigation conducted.

Our analysis will have a descriptive nature since this is the most suitable method for our general plan: to know the characteristics presented in the educational theory of the education of researchers within the Department of Theory and History of Education and Social Pedagogy. As specific purposes, we can note: to describe the tendencies in the content of the realized investigations; to identify the epistemological purpose of the presented projects; and, finally, to reflect the attitudes, interests and scientific values (cultural schemes) of the involved investigators and of the group of people that represents the programme 'Education and Society'. Our analytical unit is the publicly concluded and defended doctoral theses in the department, excluding from the object of our attention the unfinished theses projects, the preparatory researches during the study of the doctorate and other investigation projects generated and developed in the heart of the department, since it is estimated that the finished doctoral theses represent singularly the trend in researchers' education in which we are more interested according to the purpose of the study.

The programme 'Education and Society' was organized around several basic goals: to inquire into the influence of education in the development of society, including socio-political analysis; to try to find the relation between the different periods of pedagogical knowledge; and to analyse the educational processes and their theoretical argumentation, considering the knowledge produced about the occidental systems in education. The main lines of investigation offered in the programme, which can be approached from different paradigms, can be seen in Table 1. In order to contrast the manners of use of the theory in the development of the programme, we will focus, as previously stated, on the defended doctoral theses in the department, that is, scientific investigations already carried

out, a total of 87 theses until now[8] (cfr. Table 2; an evolution in the frequency of finished theses can be observed in Graphic 1), which constitutes an average of 4.6 theses presented per year (cfr. Table 3).

Table 1. *Main lines of investigation of the programme 'Education and Society'.*

LINES OF INVESTIGATION
Educational axiology
Education and ways of social communication
Educational anthropology and ethnography
Curriculum theory
Educational institutions
Comparative education
Education for women
Educational thinking
Intercultural education
Education for adults and vocational education
Social pedagogy, social welfare and teaching function
Social education and social movements

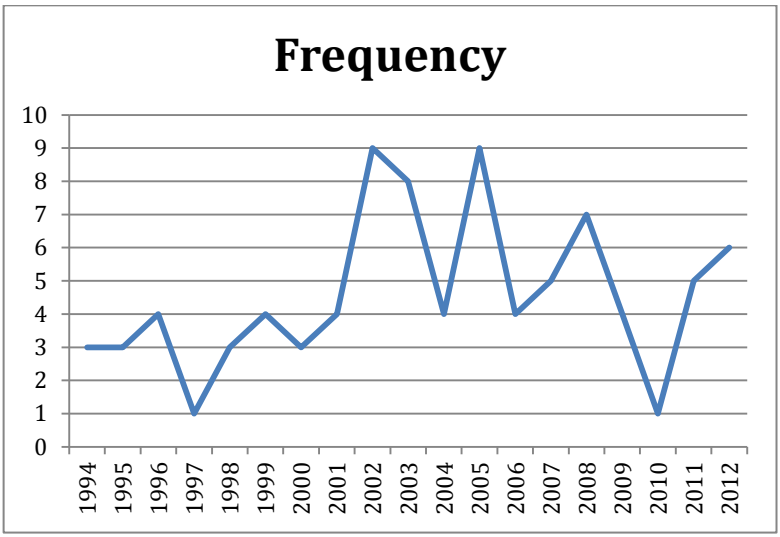
[8] Though the programme was closed in the year 2009, there are still different theses about to be finished, with which the number of investigations realized under the programme 'Education and Society' will increase.

Table 2. *Number of read theses per natural year during the period 1994-2012, corresponding to the programme 'Education and Society'.*

YEAR	NUMBER OF READ THESES
1994	3
1995	3
1996	4
1997	1
1998	3
1999	4
2000	3
2001	4
2002	9
2003	8
2004	4
2005	9
2006	4
2007	5
2008	7
2009	4
2010	1
2011	5
2012	6

Table 3. *Statistical parameters (measurement for central trend) of the population of doctoral theses.*

Arithmetic mean	4.6
Median	8
Trend	4



Graphic 1.*Evolution of the annual frequency of presented theses during the development of the programme 'Education and Society'*

Within the 87 defended theses, 16 clearly have a historical nature, dealing with institutional educational aspects in Andalusia and Spain; there are some which focus on different countries from Latin America (Argentina, Chile, Colombia), on the history of musical education, the history of adult education and on matters linked directly to the history of the University of Seville. These are theses that would be part of the fundamental contents in education, which however, in terms of discipline in a strict sense, are out of the limits of the theory of education.

Table 4. *Predominant focusing in the presented investigation works.*

	Forms of knowledge	
	Historical-hermeneutic	Critical
Number of theses of educational history	16	
Number of theses of comparative education (historical perspective)	9	
Number of theses about current problems	38	24
Total	63	24

Within the disciplinary field of comparative education, there are nine theses in total which focus on several matters related to religious and socio-educational aspects, and also to familiar education, absenteeism from school, educational reforms, the directive functions in the student centers, the textbooks, adult education and environmental education. These investigations, which deal with neighboring European countries, from Maghreb and from America, besides Spain, update the theory of education with new contents, though they also present a historical projection, establishing, in this way, more appropriate systematizations of the different dimensions of the pedagogical knowledge related to it.

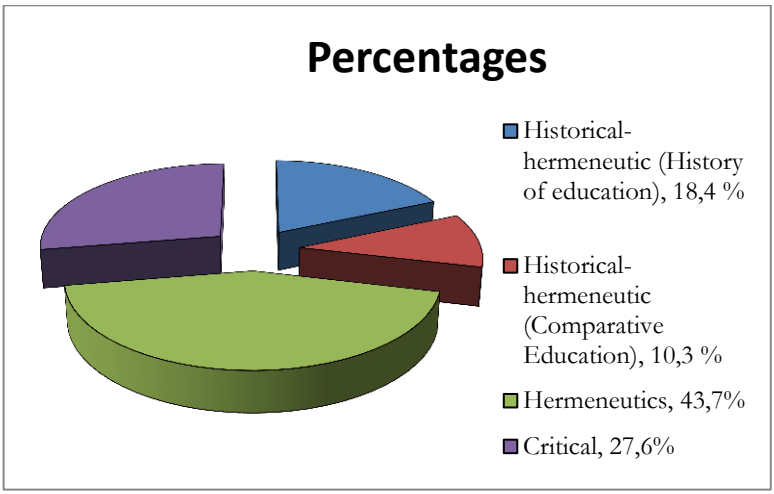


Figure 1. *Proportion in percentages of the representative knowledge modalities of the presented theses.*

- *Analysis of the realized investigations from a theoretical-interpretative perspective*

In contrast to positivist postulates, as we all know, anthropologist, sociologist and phenomenological critics emerged, unified by a qualitative and interpretative perspective, where 'comprehension' of the meaning of social phenomena is looked for and not just its explanation expressed in mathematical terms (Gadamer, 2004). Thus, they acquired priority in the educational field of knowledge linked to real problems, related to the context of human practices. In this way, the development of interpretation of social life and of the world from a cultural and historical focusing turned to be a central element, contributing to the transformation and improvement of living conditions. Within interpretivism, as a specific theoretical perspective, we can set a great part of the realized investigations in the programme 'Education and Society' (cfr. Figure 1).

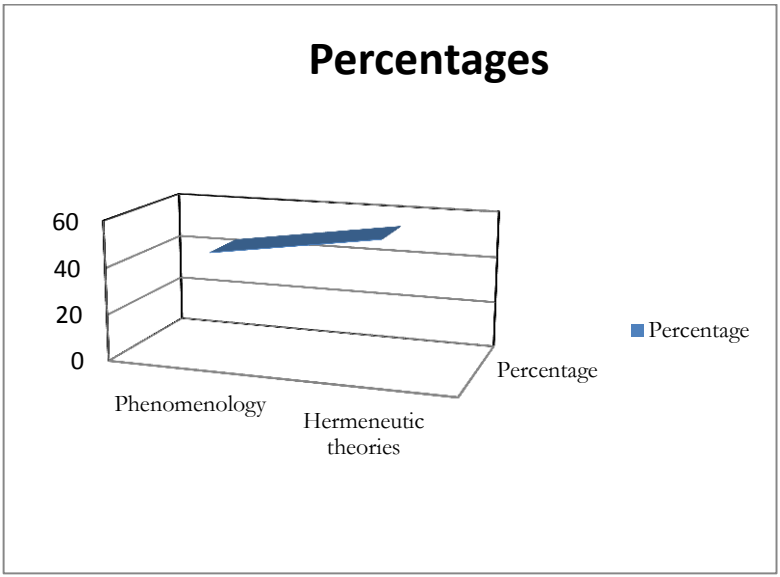
Considering Crotty (1998) and Sandín (2003) proposals, we establish the following categories in order to classify the realized investigations within an interpretivist focusing: hermeneutics (with a critical and philosophic validation) and phenomenology[9]. Within the hermeneutic theory, we can distinguish between three focuses with their own implications: a) 'hermeneutics of validation', where it is stated that there are unalterable meanings which are the object of the interpretation, defending the validity of the interpretation beyond the investigator's interests or wishes; b) 'critical hermeneutics', where emphasis is put on the assessment of meanings linked to historical conditions, trying to find an emancipatory practical action; c) 'philosophical hermeneutics', which proclaims the dialogic value of the encounter between investigator and texts and expressions which have to be interpreted, trying to deal with a mutual comprehension of the meaning and intentions which are behind what has been demonstrated. In this way, 'phenomenology' can be included in the center of interpretivism[10], where immediate subjective experience as a knowledge foundation is given supremacy, taking into account the referential framework of the subjects and the interest in knowing how people experience and interpret the social world built through interaction.

If we distinguish the hermeneutic theory according to its diverse possible currents, we find similar values (eight investigations within the field of hermeneutics of validation and eight within philosophical hermeneutics), though with a lower representation in critical hermeneutics (5) (cfr. Figure 2).

Within the realized investigations from a phenomenological focusing, those linked to the field of formal education predominate. Among them, the preponderance of them in the axiological area should be mentioned: about education for democracy, education for health, moral education, teachers' learning, ideas about school and the teaching of values. Within the investigations that can be set in the environment of non-formal education have predominated works about youth and their learning, just like educational performances in the familiar environment.

[9]Crotty indicates a current more inside interpretivism, 'symbolic interactionism', which we omit in our analysis as a consequence of not finding an investigation clearly responding to its principles.

[10]We refer to the phenomenological-hermeneutic tradition (Heidegger, Gadamer, Ricoeur) or to the interpretative focusing, with an ontological nature, where it is recognized that the fundamental dimension of human consciousness is historical and socio-cultural and that it is manifested by means of language. But the 'eidetic' phenomenology, Husserlian, with an epistemological nature, also constitutes a tradition that enlightens the return to reflexive intuition to describe what has been experienced and the experience constituted in consciousness.



Graphic 2. *Representative percentages of the realized investigations within the hermeneutic theory and the phenomenology field.*

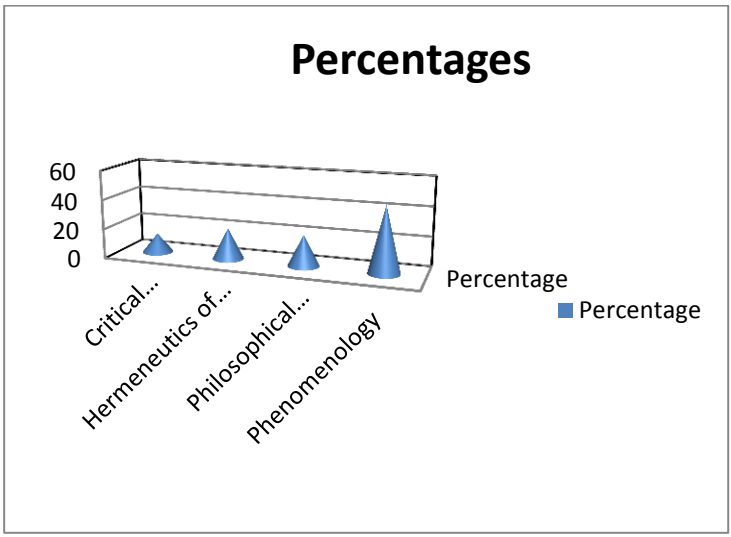


Figure 2. *Representative percentages of the realized investigations according to the different categories employed within the interpretivist focusing.*

We find within the programme 'Education and Society' investigations concerning reading comprehension and its connections to the social environment, for the creation of a model of analysis of the programmes of

cognitive development, for the proposal of a model of communicative teaching, for the creation of models of construction of curricular materials and for the proposal of a new way of considering and applying the enterprising ability in the regulated educational system. Within these investigations the representation of the meaning of an expression is not relatively problematic, since what is important is the valuation of meanings in the socio-cultural context in which they take place, leading in that way to transformation, innovation and criticism, as is indicated by 'critical hermeneutics'.

Investigating is always a reflective exercise; the interaction between the philosophical ideas and the investigatory work defines the social investigation, which aspires to quality and excellence. It is demanded that the investigators in education acquire a new form of socialization, enabling in this way new processes for the production of knowledge (Alvesson & Sköldberg, 2000). The 'philosophical hermeneutics' developed in diverse investigations of the programme has focused on the ideas from well-known representatives of pedagogical knowledge such as Vico, Dewey and McIntyre, or, from an open concern for the aim of education, has formalized anthropological models of educational action and has revolved around the problem of time in education and about the teaching of beliefs.

As a category included in the hermeneutic theory, the 'hermeneutics of validation', backed in the possibility of investigating the meaning of texts and in the meaning the subjects give to their expressions and manifestations, which could be applied in different theses in the programme, has been linked exclusively to the field of formal education. In this sense, there are investigations concerned with the exploration of attitudes about different matters which are objects of present preoccupation (environment and cultural diversity), about the teaching figure and his/her education, in relation to interactive learning and about the configuration of values from the educational experience.

- *Analysis of the realized investigations from the theoretical-critical perspective*

Critical pedagogy, in its different versions but with evident influence from pedagogy for transformation by Freire (2002) and the linguistic change in the theory of the communicative action by Habermas (1987), is present in a great part of the realized investigations within the programme 'Education and Society'. It is linked to the recommendations from UNESCO about learning throughout life (CREFAL, 2009), inspired by a supposing critical function in the way of facing problems and world challenges in education.

Mainly, the versions that have been clearly manifested in the realized investigations could be summed up as 'action-research' (58.4%) and 'participatory research' (41.6%); nevertheless, because of the implications of the model of performance in the action-research, which requires, apart

from an action plan put into practice, the careful control and registration of the action and its effects, a group of investigations should be mentioned which could be placed within the 'evaluation research' with a critical nature (cfr. Figure 3). The volume of works realized from a critical focusing is related to the important development carried out by this type of investigation in Spanish universities.

Within the works set in the modality of action-research, we find 14 theses, of which half are at the level of evaluation research. In this modality, we observe a predominance of the realized investigations in the field of non-formal education, particularly in the areas of social work, social education and community development. Except for two works linked to the regulated school system, the objects of investigation are: a) labour conflicts, socio-educational work in the city and social service for senior citizens and for the immigrant population; b) education in adult women, environment education, programmes of citizens' coexistence and the socio-educational impact of educational policies; c) education and rural development, social movements in urban neighbourhoods and local movements and social change.

In the same way, the investigations made in the modality of participatory research focus, except for one which is linked to the quality of the regulated educational system, on the field of non-formal education: a) programmes of social incorporation, socially excluded young people and social and cultural entertainment; b) environment education from a gender perspective and health education; c) local and rural development, programmes of human development in international cooperation and educational development linked to the territory.

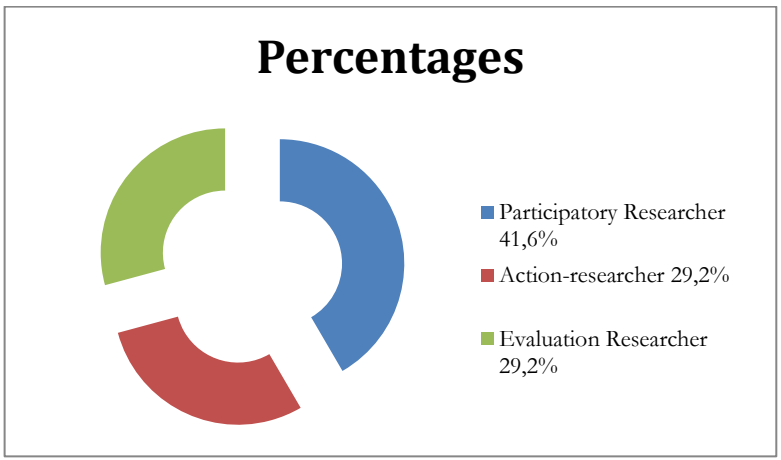


Figure 3. *Percentages of the realized investigations from a critical paradigm, according to the different modalities.*

Conclusion

In the ways of theorizing education, the positivist interpretation is not always possible or sufficient. The phenomena of education occur in natural contexts and they are closely linked to historical, social and cultural factors, whose comprehension, and also explanation, does not aspire to be universal. The logic and the praxis of the educational investigation in the doctorate programme 'Education and Society' are linked to the 'paradigmatic turn' (Bernal, 2010) which, parting from the interpretative paradigm, constitutes a theoretical and investigating tradition alternative to the positivist paradigm, to which, subsequently, has been added the critical paradigm. The considerable number of investigations realized during the development of the programme proves that assertion. The 'theoretical and educational culture' at the University of Seville, analysed through this programme, has been configured without considering the scientific developments of post-positivism, although in other Spanish universities it does hold more representation. All this, apart from being attributable to the scientific learning of the main tutor and director investigators in the realized investigations, may be closely related to the progressive success of a new form of producing knowledge, closer to real problems and more concerned about the social consequences of the investigation, in contrast to the traditional way of producing knowledge, determined by the judgments made by the investigators and theoreticians. In this sense, the scenarios of the investigations have been widened, expanding beyond institutional frameworks, to communal spaces and of daily life. The interpretation, comprehension, emancipation and deconstruction become basic categories of all the analysed investigations.

Some considerations taken from our analysis about aspects belonging to focusing and applications from the theory of education in the learning of investigators in the programme 'Education and Society' should be mentioned. Somehow, the realized investigations try to set out problems and to propose solutions to the management of the quality in education. With greater or lesser emphasis, they look for the production of innovative knowledge to face challenges and new demands from the current society. Educational theory is reflected in the investigations focuses on the subjects while they are interacting in specific contexts of learning and human relationship. Additionally, a promotion of educational action considered as a 'mediation' which is capable of providing for the subject the necessary resources for his autonomous and responsible development can be deduced. Finally, we can emphasize that the kind of educational theory that is most reflected in the analyzed theses shows an ideological compromise with the values which define our democratic society.

Finally, the interest in understanding the educational reality in order to transform it claims a global perception of it. Beyond casuistic explanations, educational theory demands relations between particular

factors, justifiable reasoning, investigations with forms and structures, openness to the world of life, and recognition of the complexity of the educational phenomenon. In this sense, it is not a question of what is qualitative and quantitative, but of a complex integration of what is meta-theoretical, epistemological and ontological. The ways of theorizing education more productive in finding out new ways of thinking about how we know and explore the ways through which make knowledge public seem to represent more possibilities for the optimum evolution of pedagogical knowledge.

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Educational theory: An open project for mind and culture

Joaquín García Carrasco

The approach and the fundamental conditions

The term 'educational theory' in a general sense refers to the representation, the discourses – descriptions and explanations – about specific human behaviour properties, particularly those that allow changes intentionally and intersubjectively promoted, in a direct or indirect way, with cultural objectives and their consequences.

In Spain, a full comprehension of the term will not be achieved without reference to an 'area of knowledge' recognized in the academic organization of the faculties of education designated as 'Theory and History of Education'. This area brings together academic professionals in the field of education, whose study and research interests preferentially focus on the wider issues that the concept of education conceals: the historical evolution of theory and educational practice, educational policies and their comparison, among others; and specifically the domain of general theory (ies) about the educational phenomenon. Synthesizing the field: the question of what makes possible and/or why humans have cultures feeds an interest and an anthropological perspective on education for many of these scholars; how to promote and/or how the deliberation about educational phenomena is promoted has prompted the inquiry in the domain of epistemology, in order to characterize and evaluate the modes of discourse that are provided; what are the domains of community practice in which educational processes are promoted and how marks the difference between a social intervention approach in a community and the institutionalized action within education systems (formal and informal education). Within this area of knowledge, a study group has been created – "Seminario de Teoría de la Educación" (Educational Theory Seminar) – which celebrat its XXXI 31st meeting in 2012, and a scientific journal has been promoted – *Teoría de la Educación, Revista Interuniversitaria* ('Educational Theory. Interuniversity Journal') – edited by the University of Salamanca[1]. Studies about the theoretical itinerary of this group of professionals begin to appear, for example, in the study of Prieto (2011)

[1] A summary of the academic career of the seminar and the evolution of its interests are described in ORTEGA, P. (Ed) (2001) *Teoría de la Educación, ayer y hoy*. Murcia, Seligráfica. The group has promoted two journals: *Teoría de la Educación. Revista Interuniversitaria*, and *Teoría de la Educación. Educación y Cultura en la Sociedad de la Información*. (http://campus.usal.es/~revistas_trabajo/index.php/revistatesi)

on the role of affective life in the thematic scope of educational theory. I was one of the founders of the group and director of the journal for several years. In the documents produced by the seminar can be traced trends and influences, noted intuitions for new perspectives, symptoms of stagnation ... Exceeding the limits of that group, in an interdisciplinary context, we founded an online journal: *Teoría de la Educación. Educación y Cultura en la Sociedad de la Información* (Theory of Education. Education and Culture in the Information Society)[2].

Jover and Thoilliez (2010) analysed those documents in order to synthesize those four decades. 'Educational theory' as an academic discipline (university course) appeared in 1969 at the University of Barcelona. It took the place of one that was called 'general pedagogy'. The authors think that the theory of education in Spain began its activity combining two routes: one, the French reference, the other, the British reference. In the French route readers frequented authors like Mialaret, Debesse, Ardoino, De Peretti and Lobrot. These authors were followed by many more, without the educational theorists ever remaining disconnected from the vicissitudes of the theory of education in France, or from the perspectives under exploration. In the British reference, among the authors frequented were . Moore, Hardie, Dearden, Peters, Hirst, O'Connors, Jover and Thoilliez. The authors conclude their article with a proposal for a future which respects the followed routes:

"... What we need is a theory that focuses on researching education itself, as a distinct practice that requires to bring together two contradictory requirements: the appeal to a directive, moral of the human being as educable and the attention to the contingent conditions in which action is performed and in which theory itself participates, in itself, a situated practice'" Jover –Thoilliez (2010, p. 61).

On a valuation of this kind, open to the many contributions generated from other disciplines, educational theory is being generated in many fields. Education, then, in addition to practice, is a necessary process, is one of the faces of what in our species is equivalent to a way of life. The way of life in humans is always a vital-cultural process. It is the way, in particular, that our species has to give of themselves. If you choose a position allowing "theory about education" to be viewed in the pedagogical guilds and in other fields of knowledge, educational practice is located in a territory that many illuminate in various ways.

From the vantage point of 70 years of age, where do I go to see this field of knowledge that has interested me?

To answer this question seriously, and maintaining the concept of ET, we cannot shirk all direct contributions coming from many scientific disciplines, because for at least the last quarter of a century, scientists have been explicitly approaching key issues for that theory or elements

[2] http://www.ucm.es/info/site/siten.html.

contributing to the understanding of the educational phenomena which cannot be overlooked.

What I think is key and a starting point for ET

The human species not only learns, like many species of organisms, perhaps all, but also teaches. All people are capable of mediating others' learning intentionally, for better or for worse. Perhaps this is the most specific feature of the human mind: between projects conceived by the human mind are those who plan, assess or promote forms of behaviour on others, or their removal. This means that the human being is able to imagine and idealize the process of behaviour change and to reflect on the mental states that produce it or can modify it, in himself or in others. Some philosophers go further and believe that, despite appearances, we have no privileged understanding of our own intimacy other than the one we can have of someone that we observe. The best way to understand oneself is to learn to read the face of another (Ryle, 1967). In any case, it is clear that the potential of human mental functions is linked to the mental functions of social understanding. If educational theory wants to deepen them, to better understand, it needs to be connected to the current investigation of the mind.

Ideas that at some point in history have constituted a basis from which to develop an anthropology of human formation, have been many. The Greeks proposed the *political animal*: a qualifier for an already existing type, a citizen of the Polis; Thomas Huxley suggested that of the "moral animal"; Descartes, with remarkable acceptance, the "rational animal" and hence the Homo sapiens in taxonomies; Rabelais proposed the "animal that laughs"; other options have been those of "cultural animal" and "talking animal". Desmond Morris (1993) became famous for defending the "naked ape". Pascal Picq and Yves Coppens (2002), two trustworthy anthropologists, on writing a book on *Le propre de l'homme* (the chraracteristic of humans), indicate that the nuclear cardinal peculiarity from which all others are derived is that of bipedalism, the locomotor system that supports the way you walk, as if, in the end, the human condition depended on gait (the way of walking). The selection of walking had to do with advantageous ways of meeting vital needs (Leonard, 2003). Richard Leakey agrees with the importance of bipedalism; he believes that the bipedal condition deserves the name of 'human' for all our ancestors with bipedalism[3] (Leakey, 2000). Of all the proposals, the most influential in the West has been the 'wise-skilled' and the one suggested by Blondel (1893), from whom proceeds the epithet of *Homo faber*, annotating that

[3] "I think that the evolution of bipedal locomotion, which distinguished the ancient **hominid** from other primates of their time, was a crucial fact in the forecoming human history. Once our far ancestor turned into a bipedal simio, many other evolutionary iinovations became possible, together with the final come to existence of *Homo*" (Leakey, 2000, p.13).

reason is equally expressed in theoretical and practical intelligence. Blondel believed human peculiarity of practical intelligence "... applied to all kinds of operations, from modelling clay to the highest achievements of the artist and the poet". If we believe that rational intelligence and practical intelligence form a continuum which produces what today we mean by the term 'scientific-technological system', then we could say that such peculiarities respond to a model of human being that we would call a sophotechnic model, which is the model representing the human condition as an expression of their skills for philosophy, science and technology.

More consistent with what we said at the beginning is the proposal of David Premack, primatologist, who proposed the peculiarity of 'animal teaching'. According to him, the most characteristic feature of humans is precisely the fact that they consider vital the dedication to the cultural processes and to the practices of cultural transmission. In this they also show that they are genuine animals, the humans that truly are: they risk for their lives, their in the offsprings and, as humans, for the quality of life of their offspring.

Perhaps educational theory is enriched by inquiring 'what is outside', what is lost if you keep the perspective.

The point of view as a problem

I presented the foregoing considerations in the conviction that, in constructing a theory of education, the fundamental problem, which should be devoted time, is related to the view with the usually called *paradigm*. Kuhn (1979) called normal science, normal knowledge, to the one that is developed within the dominant paradigm, within the dominant point of view in a field of knowledge. Sometimes I feel that cultural evolution, the expansion of human knowledge, does not affect, to the necessary extent, the point of view from which we consider education. We would say that paradigm, perspective and point of view work conceptually, in the practice of knowledge actions, like a real macroscope (Rosnay, 1975): as a tool that allows us to perceive and to advance in the understanding of the complexities of the world in general, and the complexities of the domains of education in particular. From the paradigm, perspective or point of view, a *culture* emerges about ways of dealing with problems: what problems to develop, which are considered relevant. But above all, which ones are not taken into consideration. A critical point of view is the fundamental and first task of a theory of education, because the views work as an invisible prison and a defence mechanism for thoughts. We should always preserve the question: What if it was not the proper perspective, and if it was not the whole truth? So, Ortega y Gasset, humanist, preferred to indicate that all knowledge is knowledge in *perspective*. For, as N.R. Hanson warns, there is no such thing as a "direct reading" of experience; we always deliberate on intermediate

realities that constitute our representations. Hanson (1985) said that "all experience is theory-laden", because even to be an astute observer one must be theoretically active; this reflective activity is always activity in perspective. Being critically attentive to our prospects is the primary attitude of any decision of comprehension, the fundamental attitude to intellectual work.

In the field of education, in the domains of education, we usually say that there isn't one paradigm or unified viewpoint. Some benevolent thinkers ascribe it to the rational youth of the field; it would be, therefore, a situation still pre-paradigmatic or provisional. Others, more ruthless, understand that pedagogical discourses suffer a fundamental defect caused by the "falseness of educational science"[4], claiming that the scientific endeavour itself regarding educational phenomena is an impossible claim, basically because we can never guarantee success for the goals assigned by the archetype of training. The facts show the frequency with which the pedagogical scenario bankruptcy of intentionality, misfortune and failure is recognized.

Dominant points of view within the discourses about the formation of human beings

Traditionally, several key assumptions have been made, implicitly or explicitly.

The *first* is ontological: the training process, the cultural incorporation, takes place in the minds of particular individuals; this assumption is characteristically Cartesian: "I think, therefore I am." Cultural vitality takes place in individual minds (*res cogitans*), organic vitality takes place in private bodies (*res extensa*). I think this is also typically Piagetian. Vygotsky, for example, indicated, however, that higher mental functions, which can easily be identified as the most characteristic of human beings, e.g. deliberate problem solving, and their changes, primarily in the first place, take place in an intersubjective area. He called it the *zone of proximal development* as a consequence of the observation of facts. By doing so, he showed the need to change the dominant paradigm. Vygotsky gave credit to facts indicating that we learn from each other and therefore the knowledge process begins not in the particular subject, but within a

[4] Many students of pedagogy were not born yet when Bourdieu and. Passeron argued that all pedagogical action – formal, informal or family – was a power exercise of symbolic violence (Bourdieu & Passeron, 1977). Many years before, Julian Ribera, a notable Spanish Arabist, accused all pedagogues of propagating and defending a falsehood: "I call pedagogue or teacher those who teach an art without exercising it or, if he exercises it, he doesn't teach exercising it. Under this term, therefore, are almost all teachers of almost all educational institutions of all civilized people" (Ribera, 1910, p. 11). I abstain myself of referring to the several books that today cling to search for a scapegoat, because there is no need.

relationship between subjects. Piaget and Vygotsky started from different points of view, which is not the same as saying that the sets of their theoretical propositions were contradictory, but from each of those views different human events are noticed and become significant.

A second theoretical assumption proposes considering education as a process of socialization. This other perspective obscures the anthropological evidence that, in humans, the in-training intersubjective process is, primarily, *vitally necessary*; this vital need is logically prior to the social need of joining a culture. Prior to acting in society, we need the culture in order to live. This new point of view connects the educational process in the human species with the evolutionary history of vital professions of other living beings, indicating that the understanding of educational phenomena depends on an understanding of what it means to live and, in particular, live as a member of the human species. Education is part of the ethogram of the species, as dramatically shown in all forms of neglect. From a conventional perspective anthropological damage of neglect and abuse are not within the field of vision. In short, explicitly or implicitly, it is assumed that, by birth, human infants are born, as suggested in Locke's (1982) metaphor, as an "empty cabinet" (and a *tabula rasa*) (Pinker, 2005)[5], as a tablet cognitively without writing. Education would consist of a set of phenomena and processes that bloom in a cultural domain and their study can leave in parentheses nature and life, as offered in every birth.

From the above mentioned, two assumptions about the subject of education as a *human being in general* can be drawn. The reflection is guided by an ideal image of the human being, the empirical subjects, and their equipment and limitations, and they didn't seem appropriate to be taken into consideration. The speech is constructed from the image of a 'normal human being'. At the same time, education was not perceived as the work of a lifetime for all; adults were not presented as genuine training subjects. The disabled were left out from the centrality of the point of view; by presenting their flexibility as breached or abnormal, they were detained in the domains of special education. Neither adults nor the disabled were located, on principle and from the beginning, in the centre of gravity of the points of views nor in the treaties of educational theory or in the conversations about education.

The extraordinary knowledge and the need to change points of view

When you change the point of view, when you change the paradigm, as Kuhn said, you promote extraordinary knowledge. Ortega y Gasset confirmed that you switch from a usual creed to another, unusual creed.

[5] Locke (1982) retrieves the metaphor of the "clean slate" (Cfr. Pinker, 2005).

Investigating and being on the lookout for knowledge of interest in to the educational phenomenon requires being open to interdisciplinarity, by a principle of cognitive responsibility towards a phenomenon, such as education, to which all qualify as complex:

> "Complex phenomena are composed of heterogeneous elements in interaction – and hence its name 'complex' – which means that its subsystems belong to 'material domains' of many different disciplines" (García, 2006, p. 32).

Special knowledgeis referred as the one generated in the margins, in the periphery or beyond the limits of the paradigm or point of view. Extraordinary deliberation considers unattended phenomena, aspects not taken into consideration, unforeseen problems, and faces problematic situations for which, within the dominant perspective, there is no sufficient or adequate culture. There is not, in the personal domain, *available culture*, so we have to go on studying, considering other things, addressing the ignorance, remaining in the open. We only glimpse these problems exclusively as problems and sometimes as *mysteries*: phenomena may occur that either were not being watched or were not watched promptly, which, if they are important, raises the question that remaining outside of them confronts us with the cognitive responsibility of feeding or keeping an *unsustainable culture*.

Sociophilia and biophilia

A special issue is provided by the obvious fact that the process of incorporation into culture, into the community of human practices, doesn't present only the social aspect, it is not a phenomenon or process exclusively under the socio-cultural domain, cannot be fully understood from the sociophilia perspective.

The inherited paradigm incubated the deliberation on educational phenomena based on the primary contrast between nature and culture. Karl Marx built much of his thinking on the discretion and the warning that humans are authors of their own story, not knowing that they are in the process of building it. I believe that all the named critical pedagogy has been in the direction of raising awareness about the human role, being critical, about the link between training space and political space in which collective responsibilities about training are set. Freire (1921-1997) described the training process, from this point of view, as a process of awareness or consciousness, an awakening of consciences, in the sense of identifying training with reflective and critical skills in the various forms of active participation in the community of social and political practices (Freire, 1974).

Reasons are accumulating today arguing that we must also look at the landscape of education from another side. The educational process is triggered by a vital imperative, containing in itself a biological requirement: humans need the culture *to live*, that outside culture survival is not possible

or one can only waste ones` life. The evidence for this claim is provided mainly by the abandoned, which, as noted, were not, in principle, included in the term 'normal'. Therefore, the full understanding of the processes of human identity formation also requires *biophilic attitudes*. For a glimpse, with breadth and depth, at the living status of the interaction we call education, we have to correct the perspective in order to be able to understand the deeper meaning of what is a 'vital domain' for humans and for any species of living being. What could be the benefit of feeding a narrative that feeds that biophilic attitude?

Alasdair MacIntyre (2001), a renowned moral philosopher, asks on the cover of one of his books: "Why do human beings need virtues?" The first pages of the text show the perspective that he considers necessary to build the answer and asks again: "Why is it important to study and understand what human beings have in common with members of other intelligent animal species?" The book shows the usefulness of the approach to that inquiry. It was about changing an inherited perspective, the author confesses quite clearly:

> "... I now think I was wrong in assuming that it was possible to separate ethics from biology, and I am grateful to those critics who defended this idea against my opinion" (MacIntyre, 2001, p. 10).

The importance of the vital domain in the lives of all living things, but especially of humans, is shown conclusively by those who enter the world with their lives violated, those that the dominant reflection called "the freaks". The vital domain and the biological profession enlighten each other in all living beings, including humans. Behaviour is the most apparent stretch of the *biological profession* of each species in their habitat; it so accurately identifies them, as can their morphology. This is what the great founders of ethology, Lorenz (1976), Niko Tinbergen (1969) and Karl von Frisch (1980) [6], who in 1973 shared the Nobel Prize for Medicine, stressed. The biological status and its behavioural possibilities are the primary marks appearing with life and its possibilities in every birth. This approach is the initial assumption of an inclusive perspective, which, in principle, includes all human beings.

Understanding the process of cultural integration and interdisciplinary research

1993 saw the creation at Harvard University of a research-training project under the motto *Mind, Brain and Behaviour*[7]; specialists in neuroscience, molecular biology, psychology, philosophy, economics and linguistics joined the project; Howard Gardner also integrated the group, which was part of the Harvard Graduate School of Education; Shawn Harriman figured as coordinator of the educational programme, interfaculty and

[6] Lorenz (1903-1989), Tinbergen (1907-1988) and Frisch (1886-1982).
[7] http://mbb.harvard.edu/

interdisciplinary, proving that the subject contributed with contents, justifiably necessary, to the needs of understanding of the students studying science and students from the faculties of education, because the topic, common to each other, was the process by which behaviour is modulated.

Catherine Malabou, *Maître de Conférences* at the University of Paris X Nanterre, departs from a programmatic statement, reformulating Marx's thesis to which we alluded earlier: "humans construct their own brain, but do not know they are doing it" (Malabou, 2004, p. 7). The intention of her work is to raise awareness that, also, a "constitutive history of the brain" takes place in which every human being is a protagonist. Also, the formation of human beings is committed to raising awareness of the responsibility we hold in the history of the own body and, especially, in the history of the brain itself, as deepening commitment to society and culture. This responsibility is not fed merely by elementary anatomical references in textbooks for children and adolescents, and by allusions, increasingly remote and indirect to what in other times was called biology of education[8], tradition, on the other hand, is clear declining within the curriculum in which teachers are trained.

For Jean-Pierre Changeux the expansion of research on the nervous system in the last 30 years is comparable to the development of physics in the early 20th century or the explosion of molecular biology from the 50s onwards of the last century. The discovery of the synapse possesses a cultural value equivalent to the discovery of the atom or DNA. However, the awareness of the brain in the domain of the humanities, according to Changeux, suffers an unfortunate impasse. However, mental illness and its dire consequences are increasingly taking relevance in conversations and in the media.

> "Alzheimer's disease, like many other diseases, is not merely a neurodegenerative disease, but rather an attack on the psyche, where the identity of the person is affected and its affective economy convulsed" (Malabou, 2007, p. 12).

The brain's consciousness compromises with sensitivity in the face of mental suffering, of violations of the strength of the mind cast by evil, holding us accountable for events that cause psychic wounds involving complicated healing and long convalescence. The most striking cases, such as Alzheimer's, epilepsy, agnosia, anosognosia and colour blindness, and the most common, such as stress, anxiety and depression, can all be considered evidence of the vulnerability of the human being's identity, consequences of the vulnerable plasticity of neural networks, which Santiago Ramon y Cajal called the *butterflies of the soul*. Plasticity was a foundational concept, since Herbart, for an educational theory, and such

[8] Today, in Spain, there is a chair with the profile of biology of education which is runned by Prof. José María Asensio and his publications are geared to that end (Asensio, 1997).

cases are both its dramatic testimony and a part of the stage where it can be observed; throughout the range of human life.

From this vantage point, social and cultural pathogens that attack the psyche and function as training situations of personal plasticity, environmentally unsustainable, are highlighted: they traumatize, abuse and rape the butterflies of the soul (Mora Teruel, 2006). As part of this awareness, education is seen as a job to search the highest quality possible within the limits of plasticity, foreseeing vulnerability and resilience, and always trusting in the capacity of recovering. We believe that within this framework, in the domain of that consciousness, must also be situated the training of teachers, to be forewarned about the plasticity, vulnerability and resilience, both of students and of themselves. It is in this context that we present where the education profession reveals not only its dignity, but also its risks.

The bias of understanding in teacher education

Some educational theorists place the referent of the term 'education' within the framework that defines the role and profession of teachers or professors in schools and other educational institutions; the aspects discussed above are skirted and dodged, because they are considered *special constraints*. To serve as a witness to this bias in thinking about education, we recall David Carr's book *The Meaning of Education*. The author tells us about the content of the book

> "The first part deals with general issues of Pedagogy, the professionalism and the role of the teacher, and his first chapter focuses on the concept of *education* as such" (Carr, 2005, p.23).

The author believes that the success or misfortune of educational dedication depends on the interpretative consistency with which actors construct their concepts about education. However, he considers inconsistency to be the most widespread. We shall not be surprised by the inconsistency of the meaning of the term 'education' because, according to the author, it is *essentially moot*, as if by nature controversial.

After a tour through the consequences of Cartesian dualism, and through the difference between a *member of the human species* and human *person*, he draws a first conclusion:

> "... The ideas of person as well as of education are fundamentally normative notions: this allows us to interpret more adequately the concept of person as a function of an initiation into the values, customs, practices, habits and institutions that form the characteristic mode of human *culture*, achieved through education or other means of socialization" (Carr, 2005, p. 21).

Presented as such, the concept of 'person' is independent of the status acquired by birth; the birth only grants membership status of the species. It seems unacceptable that the attributed person, 'the concept of person',

has to be achieved "as a function of an initiation into the values". Such an approach seems to dignify the educational action; in fact, it definitely splits nature and culture, segregates the cultured and initiated community and the less cultivated group. In particular, it puts away the full personal attribution from those who not only are not in the cultivated group, but also their disability limits the possible transit route toward that condition. In addition, the initiation is primarily associated with school entry and the following of the curriculum. Never having the chance of schooling or to have lost it would weaken personal quality. Such an approach has never been confronted with the reality of imperfection in life.. We believe that this is a biased perspective.

I argue, however, that the concept of education is the most unifying of all the social sciences and, therefore, can and should be considered from many fields of knowledge. Education and training are *indispensable* in our species because, above all, they are required by a *vital necessity*, not just for social needs or cultural needs or for requirements of community practice. If these needs are not satisfied in essence the human condition collapses, leaving the subjects who developed this basic lack anthropologically unrecognizable, though they've been born persons. But, then, education is, primarily, the result and consequence of the opportunity to host the human being in a relationship space where no conditions are placed. The consequence of lacking a host environment is reflected in Victor of Aveyron, called by historians an '*enfant sauvage*', as its strongest witness. Not least, they bear witness to the vital need for an intersubjective niche with quality in the reception for all the abandoned, all the abused, all the locked up in concentration camps, all the radically marginalized and all the patients of extreme loneliness (García Carrasco, 2007).

Education, at its most fundamental, is not only a cultural process dominated by instruction, even in values, but a vitally necessary process that characterizes the human species, configures and particularizes their vital domains, makes clear their way of life, permeates social practices, is based on the complexity of the structure and organization of their brain. It is an intersubjective process of modelling communication between minds, what Vygotsky called the "zone of potential development", the intersubjective area that incorporates the subject to the condition and human way of being, to the humanity of the human, if possible. Curriculum and school, socialization and qualified social participation, being admirable and desirable, do not exhaust the facets of education unless they become truly inclusive. The concept of person will lose its inclusion power while its meaning is constructed putting the spotlight where, to glimpse it "normally", it has to turn away from disability and imperfection.

That reason takes education as an issue doesn't imply a technical confirmation that humans can be produced, according to the community's wishes, more educationally. A good education professional is measured

primarily by the quality of understanding. Within the comprehension quality grow the initiatives for the possible.

If the need for training is, at its root, a vital imperative for the species, a requirement of the specific way of the living being, then, the question is *why is this so*? and *why does this occur like this*? They share the condition of genuine biological questions, questions about life, and strictly pedagogical questions, as long as the pedagogical issues are not reduced to teaching methods or procedures for learning social practices. If we face disability, if the disability is included in the object of rational discourse, this new perspective leads us to a strange credo, where compassion is instituted as a cardinal virtue.

I argue that the concept of plasticity, considered fundamental within the pedagogical tradition, presents three integral strands of its meaning: *plasticity*, *vulnerability* and the capacity to recover or *resilience*. These three concepts dilute the internal tautology present in the concept of educability[9], the ability to educate and be educated, and convert its analysis into a biologically meaningful analysis.

In educational theory, the body cannot be set aside

The theory about education has sometimes been built from thoughts located on the cusp of the activities of the spirit, in the *cultivation of the spirit*, which had its place in areas dominated by what Descartes called the *res cogitans*, the thinking reality and its domain, the thing that thinks in human beings, from their idea activity and from its more ideal products, everything which flew flat, was to the French philosopher, located in the realm of the *mechanics of the flesh of the bodies*; to his sharp and influential gaze, between machines and animals' flesh, there was no significant difference, because the dynamics of the bodies corresponded to an *animal machine*.

Bachelard (1884-1962) fought the stubborn materialism and did his best to defend an illustrated (*instruit*) materialism, which highlights within the material instance its magnificent power of change, of transformation and of great capacity of emergence of new properties, including the properties demonstrated by the living beings. A transformational and evolution potential from which different forms of life and great variety of minds emerged. With that, he opened the door to the speech that fairly relocated the anthropological role of sensations, emotions and thoughts in the construction of the person, as a result of the systemic organization of the material entity we call 'brain-in-the-body'.

Bachelard said with clear perspective that you cannot, with a single-coloured materialist discourse, give an account of the properties of the world of physical materiality, of properties of the phenomena of the world

[9] The term was proposed by Johann Friedrich Herbart (1776-1841).

of life and the properties of culture phenomena. The emergence of new and irreducible properties in the world of life prevents, with the approach and the vocabulary of physics, narrative from giving a proper account of vital phenomena. Edwin Schrödinger (1887-1961) tested it in 1944, in a famous book, where he envisioned the root of life as an aperiodic crystal. He was wrong (Schrödinger, 2000), as proved by discoveries in 1953, describing the structure of DNA and the inner world of the complex cells in which it reproduces itself and works.

Neither with the approach and the vocabulary of biology can we account for the vicissitudes of cultural processes, which have to do with the transfer of meanings between minds; cultural processes are at a different systemic level to the other cellular butterflies comprising human bodies. When naïve or philosophical materialism claims to cover with a single speech the different systemic levels of the processes of material instance, a crazy materialism is built; this also happens when computing machines and brains are included in the same category of material instance. As this limited materialism appeared frequently on the stage of science and philosophy, Bachelard (1976, p. 36) said that "science has not the philosophy it deserves".

The relationship between physical, biological and mental phenomena occurs in the material instance of the body, like a set of Russian dolls or matrioskas: the mechanisms which establish and govern mental functions emerge within those mechanisms governing in the domain of biology, and with these happens the same with those that explain the phenomena of physical reality. These are hierarchical levels of organization, evolutionarily dependent, but irreducible. For this reason, we cannot with the same speech, with a single theory, with a single system of propositions, account for the peculiarities of the different levels of organization and activity of living beings; nor can we shirk, while studying a higher level of the systemic organization of the body, the other underlying levels, because they meet, at least, the condition of precursors. By forgetting the integration, the ghosts in the machine and dualisms in the organization of the living beings became justified.

Paraphrasing Bachelard's texts, we could say that the philosophical discourse on education must turn toward biology and neuroscience, in solidarity with the vastness of their field test, where the *material instance* of the mind is investigated from "an experimenter real, progressive, humane instructor materialism" (Bachelard, 1976, p. 11). Vygotsky was an example.

The major objections to the observation of higher mental functions from the perspective of the living matter can come from the perception of inconsistency with 'creationism' and religious or theological beliefs. F. Ayala (2007), a disciple of Theodosius Dobzhansky, emigrated to the United States to join the group of geneticists led by Thomas Hunt Morgan at Columbia University. A declared Catholic, he argues that the denial of intelligent design derived from the theory of evolution and Christian

theology are compatible. From the point of view of the non-believer, on the contrary, the absence of intelligent design becomes an argument for denying the need of the existence of God (Hawking, 2010).

To clarify the meaning of educability we have to look back at the origin of life. This effort to integrate was exerted, for example, by Hans Jonas (1903-1993). With his philosophical work *The Imperative of Responsibility* (Jonas, 1995*)*, he catalyzed the German environmental movement, and with his other work, *The Phenomenon of Life: Toward a Philosophical Biology* (Jonas, 2000), he inspired the School of Bioethics in the United States. As he states at the beginning of the prologue, the purpose of this last work was to present "an 'ontological' interpretation of the biological phenomena", surpassing the exclusive focus on humans and the scientific reductionisms that seek to dilute the difference between the world of the inanimate and the world of the animate. He tried that by defending the psychosomatic unity that constitutes all living beings; by approaching the actions of the mind, he considered them from the "inner dimension of life itself", interiority traceable in all forms of life; even if they have different levels of complexity, their revolutionary continuity is traceable.

Jonas wanted to overcome the anthropocentric perspective of idealism and the limits of reductive materialisms. His proposal offers a fascinating research programme: to trace the characteristics that define us as human, taking these characteristics as patterns adorning the life world[10], as outcrops and evolutionary emergencies in a life story that already has some 3,800 million years. With this objective, Capra (1998, 2002) produced exciting works. We say exciting because the perspective and the study he proposes challenges in the same sense as when, in the domains of education, the need for *transversality* is suggested to achieve the goals of training. Among these transversal themes, which must permeate all academic disciplines, is the biopsychological value that claims to consciously cultivate the biopsychological unit constituting the human person.

> "The great contradictions that man discovers in himself – freedom and necessity, autonomy and dependence, self and world, connection and isolation, creativity and mortality – are already preformed in the most primitive forms of life ... (humans) can only understand anew their unique condition if they stop seeing themselves in metaphysical separation" (Jonas, 2000, p. 10).

This glance at the human being, taking as a reference the whole world of life, is made mandatory for us because of principles of cognitive responsibility and moral responsibility: without it, we achieve a limited understanding of the world of life and a slight understanding of human nature and the vicissitudes of its training process.

[10] Many authors dedicated their effort to synthesize to this work, including, for example, Varela (2002).

Without powering the framework of the psychosomatic unity and of the belonging to the world of life, we will not become aware of our moral responsibility to preserve one's plasticity and of the plastic biodiversity in the world of human life. Although research, analysis and fragmentation are essential for formative reflection, what the gaze must find, and then show, is "the simultaneous multiplicity of life, especially of the animal" and the diversity of the forms of human life.

The evolutionary perspective ensures the gradual and growing sequence between the primitive and the evolved. Within this evolutionary sequence occurs "the complexification of form and the differentiation of function", sensitivity, control of movements, acting abilities, reflection of consciousness and creativity in research, until reaching ethics. H. Jonas sees all these qualitative gradation levels as involved in the interpretation of what we call life.

On the one hand, we see the *evolutionary plasticity* of life, but on the other, we also see from our own observational and reflective experience that "life is mortal in its fundamental contradiction" (Jonas, 2000, p. 18), the contradiction involving disease, disability, injury and death.

This brings us to the second aspect that contains the perspective that I propose in this paper, *vulnerability*. This is the claim of all environmental movements, the fragility of the world of life, the realization that life, all life, is "located in the weakest of the ropes". This is the idea proposed, to shock our sensibilities, by Eldredge (2001) in his book *Life in the Balance*, which recalls, obviously, the thought of Jonas.

Vulnerability is another component of the meaning of human educability, the price paid by the species for the extraordinary development of the plasticity of his psychosomatic unity, without having behind an intelligent design. When placed in this perspective, H. Jonas highlights the reflective and anthropological potential of a simple observational experience: all animal life is characterized by three key properties: the ability of movement, the ability of perception or cognitive capacity and the capacity of emotion or internal commotion. Without the explicit consideration of the three it is impossible to build an adequately illuminated human anthropology. All three are essential to raise the necessary coordinates for an anthropology of education.

From the three we can track the territory of formative plasticity of human beings: (i) *Plasticity for all forms of movement* in which the musculoskeletal system is involved – translational motion, gestural motion, indication movement, vocal and expression movement, prosodic and psychomotor movements, approach, separation, isolation or abandonment movements. Next to this dimension of plasticity, standing back to back, is the corresponding vulnerability, all forms of impaired dexterity and all educational initiatives for recovery. Enriching these narratives should hear the voices of those who have their movements reduced or of those who have developed these capabilities to virtuosity: the paralytic, actor, dancer,

athlete, none of which usually appear as authorities in the construction of arguments within the pedagogical narratives. (ii) *Plasticity for all forms of cognition*; this is the one to which pedagogical discourses provide greater visibility and that fills the most number of shelves in the libraries of the schools of education. But also here we must built a narrative about cognitive vulnerability, which many authors highlighted: vulnerability to prejudice, to stereotyping, to seduction, illusion, hallucination, misinterpretation, manipulation; vulnerability of brain structure itself, all diseases of the soul and all mind disabilities, dementia, and all forms of cultural marginalization, of which we usually only highlight illiteracy, because it is perhaps the one that most conditions and limits within the domain of the dominant culture. (iii) *The third dimension is the plasticity of all forms of emotional experience*. This dimension of plasticity, which is not always emphasized by the psychopedagogic narrative, efficiently contributes to the quality of human bonds, the quality of communications and the quality of axiology. It is the dimension where anyone has stronger experiences of vulnerability and violation, and the dimension where the most dramatic human beings contradiction occurs: that by which plasticity can be directed towards the pursuit of justice and the formation of the goodness of the human being, or maybe directed toward evil and the training of the wicked.

The fundamental question of pedagogy is how the cognitive and morally responsible human being can be formed, or helped to form, but this question must be completed with its antinomian: how does one become evil? In this field all literature is transformed. It is usually understood as narrative competence. However, literature is also a field of reflective experiences about the powers of the mind that are applied to the interpretation of relationships, emotions, communication, especially what corresponds to Habermas's (1987) expression, the *general pragmatics of communication* between humans.

I think we have given enough evidence to what really constitutes a research programme, but also a real programme of study, because many elements of this puzzle are scattered as the result of many different researches in many fields of knowledg; only effort would track them and cash them, inserting them cooperatively, side by side, in order to admire the panorama they offer. Let's exercise this integration work around what we have proposed as concepts that specify the three dimensions of the term 'educability', three dimensions of training and recovery capability that characterize the psychosomatic unity of human beings.

Educability and evolution

The concept of *evolution* is presented today as the most inclusive and unifying concept of biology. It is assumed that all properties of the nature of a living being are not originated by a miracle, but evolution's foundations are geared to the biological body and emerge from it, in the

framework of evolution. This means that educability – the vital need all humans have to give of themselves in a context of socially mediated cultural incorporation – is, first and foremost, a biological peculiarity evolutionarily conditioned. The acceptance of this statement has an immediate logical consequence: the humanity of human beings, the human condition of empirical subjects, is reached within particular biological conditions and within the space for social activities taking place in the area of potential development as Vygotsky called it, or, in general, within the vital domain host. This is what is demonstrated by the dramatic plot of all children with their humanity diminished by the effect of abandonment, and shows, also, those facing difficulties of humanization, because they feel their chances to give of themselves diminished, as a result of any form of disability, which also could be attested, as we have indicated, by all the abused in their psychosomatic plasticity, for many forms of rape and traumatization.

Educability property, therefore, can be considered to be under the scope of evolution. This is the lesson to be derived from the theory of evolution: a deep understanding of a property with biological roots is reached to the extent that it can be traced in evolutionary history. The training capacity of the behaviour of human beings is, above all, a psychobiological nature of the species. If the anthropological framework of its analysis is the systemic approach of *psychosomatic unity*, instead of the dichotomous and dualistic Cartesian, this property of educability should be studied at different levels of systemic complexity that presents this unity, since each level in this system has the condition of *component* and *precursor* regarding the emergent properties of the higher level in which it is integrated, and, likewise, should be studied in the stages of development of that property throughout the lives of individuals. These confirmations of biology, in principle, justify that an analysis of human educability would remain incomplete and fractured, if not looking down to the fundamental levels that constitute its precursors: precursors of their properties and incidences and contingencies, its boundaries and precariousness, its modulations in the vital history and its changes along the stages of life.

Educability may be understood on the ideal level of cultural phenomena in the abstract, in the imaginary domain where cultures appear as fantastic and metaphysical realities. But there are many human beings who have some form of limitation or disability; perhaps we all are limited and disabled, if we compare ourselves to the ideal prototypes that constitute cultures: 'saintly' humans or 'wise' humans, prototypes of wisdom or morality. And, is the limitation, the disability and the imperfection in all its forms, imperfection in life and in the ability of social practice, what calls for an analysis of human educability; and to carry it out from the biological basis in which spring – in all, simultaneously, and by different reasons – the possibility and the precariousness of all lives. To this perspective would be linked, in part, the implications of Darwin's theory of biological evolution and the theory of cultural incorporation or

education. This perspective is one that calls for building bridges between neuroscience and pedagogy.

For all these reasons we will argue that, in the concept of educability of behaviour, as a fundamental anthropological property, are linked as we have said, three others: *neuronal plasticity*, *vulnerability of identity* and *resilience of the person*. In colloquial terms, but of great educational and anthropological content, we could say that to claim that man is educable is to postulate that all human beings can give of themselves, all human beings are vulnerable and all human beings, in any circumstance or condition, have resilience, margins of realization and hope of meaning to their lives. Paraphrasing Jonas, we would say that we intend to propose an ontological interpretation of educational phenomena, from the psychosomatic unity that makes us genuinely like living beings, educable and vulnerable.

The educational action, the pedagogical professional practice, acquires, in all cases, the nature of humanitarian action; in its antipode would be the annihilating relationship of evil without mercy; what radically would close and collapse the formative attitude would be despair; the core of justice and moral progress of humanity would amount to the project that all people have the opportunity to give of themselves. In this framework, if evolution is the unifying concept for all of biology, the concept of education or training is the most unifying concept of all human and social sciences and the bridge where the humanities and the life sciences meet.

Educational theory has to start the journey of its reflective proposal by practising an analysis of the concept of *plasticity*, but with its three dimensions: plasticity, vulnerability and resilience. From there, it looks into the complexity of self-giving of human lives, of every human life. This plasticity generates the spark that ignites hope and justifies the responsibility that lies with those who understand that our primary biological value hides the greatest of our dramas.

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