Discussing Normativity in Education Sciences

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Abstract. The current paper approaches some aspects concerning the nature of the field of normativity in the Sciences of Education, highlighting the relevance of normative aspects for the theoretical foundation of this scientific and academic field. Approaching the topic of normativity is justified by the relevance, implications and the stakes of forming a conceptual framework, as well as a theoretical foundation specific to each science, therefore to Educational Sciences too. The enterprise we propose in this paper is meant to emphasize the scientific importance of a fundamental theoretical model in the field of sciences of education, and more specifically a model of normativity. The latter constitutes itself as a basis or a foundation of scientificity in this field. Which is also the reason why we will approach mostly topics from the conceptual area as a research field in itself, within sciences of education (such as, for example, aspects regarding typical principles and rules, fundamental axioms, norms and laws of pedagogy). Another aspect dealt with in this paper is that concerning the stage of research in educational sciences internationally, in what concerns normativity, but also what is typical of this field of research in other social sciences (such as psychology, sociology, history, etc.). Finally, one other aspect approached by the current paper is the one regarding the criteria of scientificity for the identity of a field of research of its own in education sciences. These criteria will be investigated according to the following categories: structural criteria, intra-research criteria, outcome criteria, the validation of criteria.

1. Introduction

Our paper discusses certain aspects of the nature of the normativity field in the Sciences of Education, as well as to emphasize the relevance of normative aspects for the theoretical foundation of this scientific and academic field. At the same time, we will analyse and review some of the contemporary trends regarding the scientific nature of epistemological approaches and considerations in the Sciences of Education; to this end we will highlight some of the theoretical views on the nature of science – that is, we will show to what extent the investigations in what concerns the aspects pertaining to the epistemology of education (of which the issue of the normativity of education, the logical analysis of the types of research typical of the sciences of education, is a part) – are, in

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themselves, a scientific enterprise or rather a type of approach which is interpretative, speculative, and possesses no scientificity quality.

2. Defining Normativity as a Field of Research

2.1 Normativity: definition and classification

It is a known fact that education is a human endeavour of intentional nature, value-oriented and seeking to obtain certain purposes (thus a teleological undertaking) – or some well defined finalities. This component of education as an intentional endeavour aims to correlate educational actions and practices (a field of the pedagogical praxis) with a body of norms, rules, axioms and principles – known and applied by teachers in the training process (teaching-learning); this type of normativity was considered to be of the functional type; the institutional normativity is nonetheless not so much correlated with the human factor (managers and teachers), as it is rather correlated with that of law and culture.

To elaborate further on this topic, we believe that normativity in Educational Sciences can be situated at various levels: at a first level there is the institutional normativity, constituted by the legislative-institutional framework existing in the socio-political context and enforced by political actors in charge of legislating the norms, laws and principles of education; this type of normativity is correlated with the political and cultural factor, and less so with education managers and teachers, as we have already mentioned. At a second level, there is the functional normativity, of the teaching, deontological, praxeological type – referring to the competence requirements of teachers; they possess a large range of applicable principles, laws and norms, which can be made operational through various educational or didactic practices. While legislative normativity must be enforced and obeyed by all actors involved in the instructional-educational environment and context, the functional one can be contextualised by a series of variables such as: the school level or cycle, the transmitted educational contents or cultural peculiarity.

We are on the one hand considering the field of educational praxis which constitutes the actual framework of the pedagogical action of the actors involved in the field of education, and on the other hand the ‘strong core’ – of theoretical nature – of the Sciences of Education – which is, the axiomatic foundations of this field, which has the role of laying the bases of knowledge in the educational field. As is defined and demonstrated by Aristotle in *Organon*, ‘science belongs to the universal’; ‘science is always a sort of «*episteme*» that refers to the universal (Katholon), which by nature entails several things (logically speaking, our note), the principle which underlies and explains the whole’ (in an ontological sense). Knowledge (*episteme*) is an inclination towards demonstration, for when it comes to a precise conviction and when the principles are known, we are talking about science. If the principles are not more evident than the conclusion, we are talking about accidental science (in a methodological sense).

The criteria of scientificity – those which form a science – and thus also from the perspective of the epistemology of educational sciences, have been summarised by the philosophers of science; they have reached a certain agreement regarding the criteria for the formation of knowledge, in a scientific manner, in any academic science. These constitute the borderline between science and pseudoscience, the extent to which they are met conferring the scientific and valid character to any statements or theories of a discipline or science. Further on we will state these epistemological criteria for the foundation of knowledge – applicable in the field of educational sciences as well:

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1. The internal consistency of a theory, that is, the absence of contradictions (intra research criteria)
2. The testing of theories – as Karl Popper's critique on verificationism; thus, for every theory there have to be some assertions which should be its potential falsifiers. This fact implies the possibility of deriving certain observational utterances from the theory, or more precisely what we have stated by the classic epistemic Aristotelian principle of a science's principles and axioms being the theoretical foundation (that which founds it epistemologically speaking).
3. The fecundity of a theory; in other words, its capacity to solve all or a great part of the issues which occur in competing theories.

From the perspective of the importance of the scientificity criteria, an undertaking which is typical of epistemology applied to Educational Sciences, aiming at the nature of science, we would like to bring into discussion the following aspects:

1. In agreement with the first epistemological criterion of knowledge formation in Science Education, we must signal the importance and relevance of the explanatory force, or of prediction of theories in this field of knowledge; their power to generate new research bringing about, in their turn, additional knowledge;
2. The internal consistency of theories and paradigms in Science Education – an aspect which refers to an internal criterion of science research (regarding the nature of science in Science Education). It is connected to the need for theories to be non-contradictory among themselves. This fact, as a criterion of scientificity, imposes the need that – at the level of each and every theory (the theory of education, the theory of training, the theory of the curriculum, and the theory of pedagogical research) – there should not be any sentences which contradict each other.

As far as contemporary debates on the nature of science in the field of Science Education are concerned, there seem to be two perspectives, different both in contents and in their implications on the training process. These would be *the lived perspective* and *the reflective perspective* on the nature of science in the field of Science Education. The differences between the two perspectives are subtle but have significant curricular and pedagogical implications for influencing and assessing learner conceptions on the nature of science. Advocates of the lived perspective (e.g. Kelly and Duschl 2002) assume that the nature of science is science or doing science. Thus, the nature of science (as well as all considerations regarding the normative aspects and the logical nature of the argumentation typical of Science Education) is the practice of science. By comparison, advocates of the reflective perspective (e.g. Abd-El-Khalick and Lederman 2002) argue that the nature of science in Science Education derives from reflecting on science, it is about the practice of science.

The two perspectives lead to different ways of thinking and talking about the epistemology of science education and of the nature of science in this field – both among and between science education researchers and science teachers. Arguing for the nature of the approach of scientific methodology in Science Education, one of the representatives of the latter perspective on the nature of the undertaking and the nature of science in Science Education states: 'There is no such thing as a universal Scientific Method (inductive, deductive, falsificationist, hypothetico-deductive etc.) that would unerringly lead scientists to the development of valid claims about natural phenomena. When science teachers object to my claim–as they often do–they are usually saying that scientists actually practice the Scientific Method because they do experiments or conduct a set of activities in some set order or another (e.g. observing, making hypotheses, collecting and analyzing data, drawing conclusions and

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communicating results)'. In reality, as Ford Abd-El-Khalick, the representative of the interpretative perspective on the nature of science in Science Education goes on to argue [1], 'when teachers agree with my claim about the myth of the Scientific Method, they are usually saying that scientists do not necessarily do their activities in a certain sequence, but could start at different points and go back and forth among the various steps. Similarly, it took me a while to realize that when some science educators say they have addressed some aspects of the nature of science instructionally in some intervention, they simply are referring to the fact that learners were engaged with doing inquiry-based science activities (e.g. McComas 1993).' [1].

Therefore, the first perspective on the epistemological nature of science in Education Science (the lived perspective) argues that the preoccupation connected to the epistemology of educational sciences means in itself science or doing science, it is therefore a scientific undertaking of laying the theoretical foundations of the field of Education Science, starting from the typical normativity to the deeper study and description of the aspects derived from it (the derivation of educational practices and norms from the most general utterances, principles, and laws of sciences) and so, consequently, of the preoccupation concerning the scientific criteria founding knowledge, as well as that concerning the methodology typical of Education Science. The second perspective however, – the reflective one – insists that the preoccupations concerned with the nature of science in Science Education are merely reflections on science (without being of scientific nature) and are strictly connected to a specific type of research (the research methodology typical in Education Science).

As far as we are concerned, a view which we state and support in the current approach, the preoccupations concerned with the foundation of knowledge – through the most general utterances (theories, paradigms), principles, laws, and axioms existent in Education Science – represent in themselves a scientific-type of undertaking; they seek the foundation of knowledge in this field – an undertaking which belongs to the field of the epistemology of educational sciences. We therefore feel that the preoccupations concerned with the formation of knowledge and the rigorous foundation of it through an effort of research of qualitative or hermeneutical type (also called nomothetic), as well as through the criteria of scientificity stated above – stand for an endeavour of science, more precisely, one of the epistemology of educational sciences. Moreover, it is our belief that the time has come for pedagogy to have a special epistemology of education attached to it, as a materialisation of the presence of philosophy in pedagogy, fact which could contribute to the rise of the theoretical and practical dignity which this science entails. In addition, in the context of the interdisciplinarity which already exists in humanities and social sciences and of the tendency of hybridising concepts and paradigms typical of them, during the last decades some of the concepts proper to epistemology might migrate, being able to be used as well in the field of the foundation of knowledge in pedagogy. This is also one of the main finalities of such an enterprise – that of the epistemology of education and that is: imprinting an explicitly scientific character to pedagogical research, by eliminating the excess of empirics (typical, for instance, of experimental methods), of the amateurism which opposes the scientific approach.

An objective in the endeavour of the epistemology of education is also the importance and the necessity of constituting a pedagogical theory which should be formally consistent, axiologically pertinent and praxeologically adequate (as far as educational practices are concerned). We also equally appreciate the fact that yet another aim of instituting a pedagogical epistemology is the achievement of a scientifically-based criticism of the methodology of pedagogical research, with a view to test and validate these methods of investigation which have proved to be valid. The scientific foundation underlying the theoretical basis and structure (concepts, theories, paradigms, principles,

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axioms, laws of education) of Science Education will add to the pedagogical ideas a greater credibility and force of impact on the educational practices researched.

Among the approaches of epistemology (of knowledge formation and criticism) of education, we shall also refer to the ones which aim at the strategies of research (research methodology) – as we have already showed above; we shall therefore mention that the field of the epistemology of education integrates, under certain aspects which regard the validity of the effort to form knowledge and the logical type of argumentation used, as far as research methodology is concerned, both the quantity-type of methodological approaches (such as for example, the experimental-type of method, known and initiated within other sciences, such as natural sciences), and the quality-type of methods, of the hermeneutical or interpretative sort (among which there is the approach of the field of normativity in education, or the logical analysis of language within the theories of education). Both the methods and strategies of hypothetico-deductive type – in which the most general utterances (laws, principles, axioms of education) represent the foundation, the central core of which educational practices and those of the training-educational process are thereafter derived, as well as the methodologies of inductive type (of constituting and developing the principles of education, throughout the history of pedagogy, starting from specific educational experiences and facts which create the contextualised praxis within the training-educational process – all of which are complementary methodological approaches which, together, form a whole and epistemologically speaking enrich the field of Education Science, adding to this knowledge. In conclusion, we feel that only by an endeavour of critical creation and foundation of epistemological type of general utterances and specific methodologies from the Education Science can valid, sure, repeatable knowledge be generated – and subsequently multiplied in a fecund manner by educational practices typical of the type of cultural, social, institutional, legislative or political context.

2.2 Conceptual delimitations

Henceforth shall be presented a few conceptual delimitations from the field of normativity as well as some aspects referring to the principles of education – as an integral part of the normativity typical of educational sciences. We think that the field of normativity in education is constituted by the whole of the most general utterances and contains a typical theoretical body formed of theories and paradigms of education, principles and laws, norms and rules, concepts and notions, as well as the typical research methodology; from this perspective, normativity represents the foundation on which knowledge is formed in this field of knowledge.

The pedagogical principles stand for the norms with strategic and operational value which must be respected with a view to ensure the efficiency of the activities projected both at system and teaching process level. The pedagogical foundation of principles especially aims at the values of the teaching process implied by the normativity of the teaching activity, which imperatively and prescriptively guides the teaching-learning-assessing activity. Pedagogical principles are formulated as synthetic sentences which reflect the axiological imperatives implied in terms of pedagogical normativity within the functional-structural dimension of the educational process.

There are teachers who distinguish between the didactic principle and the didactic rule; this differentiation is made based on the applicability scope of the said norm. Thus, if a principle has a wider applicability scope, then that rule is considered a narrower norm, which can become particular about only a certain segment of the teaching-learning process (such as, for instance: a certain side of education, a teaching component, a lesson stage).

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The concept of pedagogical norm designates an abstract formula which admits a value judgement by relating the educational or teaching activity to a certain end, a certain model, or a certain system of principles and rules; the norm defines what must happen at the level of the educational/teaching activity. Making this concept operational in multiple practical options (which aim for the pedagogical action) seeks to define some collective or common rules which serve as a guide in steering the activity. One of the defining functions of the pedagogical norm is proper to humanities and social sciences, and that is the objective criterion or the success standard which can be found practically and theoretically at system and educational process level. At a practical level, the pedagogical norm expresses the imperatives formulated within pedagogical laws in the form of compulsory coordinates or guidelines, directives which must be followed and applied within the training activities; these latter ones have the value of teaching principles (systematisation, regulation, accessibility).

To conclude with our considerations regarding the need to theoretically articulate the field of education epistemology and normativity as well as its division, we put forward a suggestion of some requirements which we regard as important for the epistemic maturity and consolidation of this field:

- 'The need to comply with the explanatory congruency and consistence of the pedagogical speech and within theories; avoiding antinomies and contradictions; limiting redundancies and outdated stylistic licences, which most of the times degenerate into inhibiting pedagogical slogans' [2]
- The need to unfold certain explanatory techniques and methods adequate to the object of study in question; avoiding extremes such as, for instance, the attempts at quantifying phenomena or educational experiences which are reluctant to quantitative approaches;
- Accepting and assimilating interdisciplinarity and transdisciplinarity, by combining the subtlety of the explanatory speech with the characteristics of the methodology used;
- Founding the theories, principles, and norms of pedagogy on the criteria of scientificity already stated by us in the beginning of this paper;
- Centring the theory on the normative aspects, of its formation and validation and to a lesser extent in the way of the descriptive and explicative – fact which will allow for the opening towards an epistemically-founded endeavour; the permanent monitoring of adjusting theory to reality – the theory must generate practices, actions and realities in the educational field;
- Taking into consideration the explanatory power and resonances (both theoretical and applicative, and both short and long term) of the pedagogical theory;
- The practical relevance of the theory in relation to the finalities of education; the integration of the pedagogical theory in a pragmatically-engaged perspective, oriented towards action, taken on both by the theoretician and the teacher;
- The use and validation through a rigorous selection of the logical analysis of the pedagogical argumentation and language of an adequate conceptual apparatus which the discipline has built in time and which has proved suitable in terms of explanatory force;
- Building the functions of theory in order to create a continuity and complementarity between the explanatory, normative, constructive and imperative aspects (for example, regarding institutional normativity, which has such an imperative character).

It is our opinion that applying and abiding by these requirements, both in the theory of education and at a practical level, will contribute to the consolidation of the epistemic maturity in the field of Science Education.

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