RESEARCH ARTICLE

THE USEFULNESS OF EDUCATIONAL RESEARCH FOR POLITICIANS AND ADMINISTRATORS IN THE EDUCATION FIELD

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ARTICLE INFO	ABSTRACT
	The question of the usefulness of educational research has been of interest and concern in recent years to researchers in the education field. Writings have focused on the usefulness that teachers themselves derive from this research, and the assessments that we make in this work arise from those reflections. We believe that the subject has a greater depth than may at first be apparent, inasmuch as, although education professionals "need" this type of research, we might ask ourselves if universities or society itself could do without this type of research. This article presents a perennially relevant problem, namely the importance attributed by administrators and politicians in the education field to educational research. We present two research alternatives: *meta-analysis* and *evaluative research*, which provide greater reliability for education administrators and may affect their decision making.

INTRODUCTION

The usefulness of educational research is frequently written and spoken about. In this regard, the views expressed by De la Orden in his works published between 1999 and 2007 are as well known as they are interesting. The basic questions that De la Orden raises refer, first of all, to the extent to which research has contributed to turning the education sciences into a regular discipline, and whether or not it has contributed a conceptual framework for and a way of producing knowledge. Second of all, these questions centre on whether pedagogical research has truly fulfilled the objective of being a source of knowledge on which a profession is based. In referring here to the "profession," we include teachers, and equally, counsellors, administrators, executives, managers, and so on. (De la Orden, 2007). There is undoubtedly a disappointing social perception with regard to the effectivenessin improving or helping policy and educational-practice decision making. Such efforts have centred on explaining or making justifications in attributing responsibility for the situation to very different causes that depend on the perspective of the person making the statement. There has been frequent talk about the lack of solid theories

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that can be contrasted, as a result of which the construction of a discipline that can be used as a base on which to substantiate educational practice is impossible. Moreover, it has been argued that research has not had any influence on educational practice due to the incorrect orientation of its design, with researchers being more concerned with their own problems than with design tools that can translate into discernible improvements in educational activity. Whatever the case may be, in this article we intend to reflect on the possibilities offered by science and research to improve educational practice through the policies that surround it.

Essential preliminary reflections

We would like to begin by referring to some reflections that have been provided by the sociology of science and that must always be kept in mind when approaching this discussion. First, as with any other social world, the scientific world is unquestionably the product of a series of institutionalized social relationships. As such, it is a field that entails strengths and conflicts. It is a competitive market. It has a culture, an ethos, rituals, socialization mechanisms, a hierarchy, a rewards system and rivalries that clash with one another. In recognizing this reality, it is necessary to accept a departure point for scientists with respect to their practice and to achieve a certain

humility in response to the difference between ideals and scientific practice. Second, the social and human sciences, as with all areas of science, nevertheless have their own specificity—that is, they certainly produce knowledge, attempting to arrive at part of the truth, beyond the conditions of their production. On individual and collective levels, autonomy, debate, conflict and collective reflection are all essential for maintaining and developing this specificity. Therefore, it is to be understood that it is necessary to preserve and protect them, and even to strengthen them. Third, we moreover know that the social and human sciences are characterized by a diversity of paradigms, epistemologies and methodologies that exist in tension; their perspective is quite scattered and attempts at consolidation are difficult to bring about. Their evolution seems less affected by paradigmatic revolutions than it is by the effect of changes in accents or perspectives, on which social and cultural developments have a decisive influence. Fourth, The social and human sciences are, by their very nature, scientific and relevant: the dialectic of rigour and relevance is critical if thereis to be an evolutionary understanding of them. In fact, relevance is not only a requirement from society and the dominant powers but lies at their heart. But this demand leads to a questioning of the autonomy and heteronomy of scientific fields. Fifth, These types of sciences address situations that are difficult to reconcile. For example, the reduction of the complexity of reality in order to conduct a study in a rigorous and empirical manner and establish links of direct causes stands in contrast to taking this complexity (multiple causality) into account. In such cases, systemic and global interdisciplinary approaches come up against more circumscribed, empirical and quantitative ones.

Sixth, Finally, sciences of this type entail several uses and stakes among social agents. Ultimately, one might say without the risk of being wrong, that there is too much history and cultural and social content in the knowledge provided by the social and human sciences—and this is even more the case with education—to be able to think seriously in terms of a form of pedagogical engineering that is able to respond to all educational challenges. These considerations may be critical in properly understanding the issue raised in the title of this work, because it must be recognized that the experience and knowledge of this type of research are not absorbed as such by politicians in positions of responsibility. On the issue that concerns us here, the reality is that the knowledge provided by the social and human sciences is subject to translation within specialized interfaces. The two essential questions that arise are therefore (Lessard, 2007):

What work is actually carried out within the interface?

b) Which actors are invited to participate, and with which tools and strategies?

Clarifying a significant policy issue is essential, which means overcoming the contradictions of the research, its controversies (theoretical or methodological) and the limitations of existing data: in a word, undisputed facts must be extracted. That is, to participate in the policy-making process, the protagonists must resort to existing research or define research projects whose results can provide responses demanded by the political body. Once the contradictions have been overcome, the research is clearly translated into educational policy practices, elements and administrative rules. This (more or less elaborate) process

must be compatible with the immediate concerns of politicians and with policy agendas, their conceptions of the state and the role of the state. We might understand the process as a format of knowledge constructed to be translated into a reasonable action in terms of its efficacy from practical and, let us not forget, political-profitability points of views. Although there are opinions that take the view that through science the underlying process is betrayed, in that there is a reduction of the aforementioned complexity, the reality is that it is no less legitimate than any other dimension of those carried out from the policy-action point of view. Without a doubt, this reduction may occur with varying degrees of intelligence and subtlety, but it must be understood in the same way as any other human activity that can sometimes succeed and sometimes fail. With regard to the second question, we must mention that neither the political world nor the scientific one is completely closed. They are undoubtedly related in various ways, and therefore foundations and practical policy offices hire graduates with a specific profile, and so both worlds attempt to communicate with and understand one another.

Interface mechanisms or strategies

One of the essential functions of an interface is to clarify the situation in relation to a significant political issue. In the social and human sciences, this means attempting to overcome the contradictions of the research as well as the shortcomings and limits of the existing data: in a word, extracting incontestable facts. In addition, it translates completed research into elements of policies, administrative rules or suggested practices. This translation may to a greater or lesser degree be brought about with the immediate concerns of politicians, but it is also clear that it must be integrated with their perception of the world and their role. This translation may be understood as appropriating a complex object of knowledge constructed within a scientific field and moving it to the political one, formatting it so that it can be integrated into the political process and lead to an achievable action that has potential in terms of practical efficacy and political return. Although this offends some scientists, who believe that it entails a betrayal of science, this attempt to overcome contradictions is no less legitimate from the point of view of policy action. This translation is made with varying degrees of intelligence and subtlety; sometimes it is successful, and sometimes it fails.

Interface Tools

We might consider two strategies or techniques, with a heavy influence from the English-speaking world, to be tools required for use in the interface; these are *evaluative research* and *meta-analysis*. Using these two tools, one obtains a form of translated and formatted policy knowledge that is based on evidence and has the objective of obtaining the best educational practices. With regard to *evaluative research*, the comment should be made that it is one of the most relevant areas of social sciences and in particular in education, given that more and more scientists incorporate the principles and criteria of this type of research into their approaches. In essence, "evaluative research has been consolidated as a compulsory ally of social decision makers in optimizing their actions and decisions" (Escudero, 2012.498). From a fully global position, we could understand evaluative research as "a type of applied research. It deals with social objects, plans, programmes, participants, institutions, agents, resources, and so on. Its static and dynamic quality is analysed and judged

according to several rigorous external and internal scientific criteria, with the obligation to suggest alternative actions within them for different purposes, such as planning, improvement, certification, accreditation, audit, diagnosis, reform, criminalization, incentives, and so on." (Escudero, 2.006,271). To be useful and serve the different parties involved, evaluative research is produced with action suggestions and alternatives with regard to decision making. It consists principally of two types of studies, namely longitudinal research and experimental or quasi-experimental studies. Although evaluative research contributes little to knowledge, it reveals the particular mechanism through which a certain effect is produced; it is simply a question of measuring the importance of the effect. Regulation of education: This focus on quantitative methods and quasi-experimental designs will then be submitted to the follow-up of educational actors, who are submitted to the imperatives of the help. In addition, science is given the authority to resolve debates between pedagogic and didactic models. It can be seen that evaluative research always arises in a context that is truly at the service of social policies—in a word, at the service of change and social development. We can therefore also observe that it is an intermediary support instrument for other disciplines and areas such as education, health and so forth, since it has the direct aim of offering the best options for action among all the possible alternatives. Its objective is to help in solving the problems that appear in these areas. Ultimately, it operates in a context of problem solving.

Evaluation is an old practice rather than a new discipline. As a discipline, it is based on its scientific characteristics with subjective or nonsystematic evaluations; as a science, it is based on its being committed to the production of knowledge, and not only that of a practical kind. In evaluative research, the central questions are derived from social objectives to solve problems in a practical way, and less as a problem of knowledge. The results are used to improve programs, processes and interventions, since these tend to be conducted in circumstances of intense social change, and the results are therefore mainly delivered in formats that are not necessarily academic. It is to be understood, therefore, that evaluative research is carried out to judge the efficacy and the merits of a programme, intervention or public order; to describe what is happening as a result of an intervention, providing evidence; to determine profitability as well as the parallels and objectives that do not correspond to the intervention; to identify strengths and weaknesses; to ensure quality; and to evaluate the progress of the objectives established. These actions allow us to make possible generalizations about efficacy, in order to construct the theory and the design of new intervention policies, as well as to extrapolate the results so that they can be applied to other social circumstances.

According to Baruj and Wortman (1979), there is no generalized model for evaluative research. Three fundamental axes may be applied to it:

a) The methodology used to establish the truth or a base for confirmatory statements.
b) The role assigned in the process for the advisor-evaluator in a relationship as advisers and with the system, and
c) The objectives pursued or the basic orientation.

The concept of evaluation is not monolithic (Anguera, 1989). The different positions taken oscillate between the construction of a body of knowledge that could lead to a basic disciplinary generalization and the mere compiling of information that attempts to account for the execution of particular activities undertaken previously. Lastly, it is important to highlight the central characteristics of evaluative research. It is a sociopolitical process; a joint process of collaboration; a process of teaching and learning; an ongoing, recursive and highly divergent process; an emergent process; a process with unpredictable results; and a process that creates reality (Armando Haro, 2009). Meta-analysis, meanwhile, (Botella and Gambarra, 2002), is a statistical technique that combines and synthesizes the results of several individual studies to provide an overall assessment. It attempts to answer questions from relevant studies to be identified, to appraise their quality and to synthesize the results using a scientific methodology. Its unique value and usefulness lies in its collecting of a series of studies that have been carried out in an independent manner and that sometimes reveal opposite results, as well as in the synthesizing of their findings. In short, it is a statistical technique that combines and synthesizes the results of several individual studies to provide an overall assessment. The aim, we repeat, is to synthesize, evaluate, and update information, attempting to find the best scientific evidence and, at the same time, to present this evidence in a manner that is clear, synthetic and easy to understand. However, it is worth making clear the following distinction between the different techniques (Sackett, 2005).

Critique: The general term for any attempt to synthesize the results and conclusions of two or more publications related to a given subject.

Review: A review strives for exhaustive identification through all the literature on a particular topic, evaluating its quality, and for a synthesis of its results.

Meta-analysis: When a systematic review incorporates a specific statistical strategy to bring together the results of several studies in a single evaluation.

Meta-analysis has three main features

Precision: Meta-analysis is more precise than narrative reviews. It concludes with statements that are clear and precise, in terms of the importance and the size of the effect, the variability of the results and the degree to which this variability is explained at the time.

Objectivity: One of the rules of meta-analysis is to attempt to make all the norms and criteria used explicit.

Replicability: From a methodological point of view, the main advantage of meta-analysis is that its procedures can be replicated, whereas narrative reviews cannot.

These features are simply the natural development of efforts to introduce into reviews the rigour that the meta-analysis has had since its inception and throughout its development. If we invest our efforts into producing rigorous, controlled and systematic reviews, why not do the same with the necessary task of integrating results in different research projects (Wolf, 1986)? The fundamental rationale for carrying out meta-analysis is to "increase power and precision in the estimation of the effects

and risks" (Mulrow, 1995). Meta-analysis has gained great acceptance, as it is necessary to have unifying opinions of what has been researched (that is, one needs to know the state of the issue).

-Among the contributions of meta-analytical reviews to scientific knowledge, those worth highlighting are: Substantive contributions, since these allow the detection of relationships that do not appear in the primary studies because they have not been put to the test. This is achieved by making comparisons between the levels of a variable that are constant in each particular study. Another way to explore theories consists of contrasting the fit of data to causal models. These models are sets of postulated relationships between constructs and/or variables. Applied contributions: evaluation of programmes. The comments provide information about the conditions under which a type of intervention is most efficacious.

Proven scientific practice. The emergence of this methodology has had some very positive effects on knowledge and the way in which, in turn, scientific research is carried out. However, it also has certain limitations that must be taken into account to assess the level of evidence contributed (Giménez, 2012): The first is the quality of the studies. The biases of different studies affect the significance of the results. The variables and statistical analysis of data are therefore evaluated, as is the sample size. The second limitation is publication bias, as a result of which not many studies are published, because the results are contrary to the interests of their sponsors or are not significant. Third, there is a selection bias regarding issues to be included in the meta-analysis. Fourth, the variability or heterogeneity of the studies should be taken into account, whether in terms of the characteristics of the context, the methodology, the different endpoint measures, the differences in the magnitude of the results, and so on. Fifth and finally, there are difficulties with the interpretation of the results obtained.

Among meta-analysis's most important objectives, we would like to highlight (Giménez, 2012; Laporte, 1993):

1. The need to guide decision making through a systematic review with mathematical summaries of its conclusions.
2. Providing a solution to uncertainty that remains unresolved due to the existence of mixed results from existing studies.
3. Estimation of the effect magnitude (by adding the population "n").
4. Evaluation of the heterogeneity of studies.
5. Evaluation of subgroups, if possible.
6. Providing information for application in various scientific fields.

The authors of the meta-analysis must identify the appropriate model employed to bring it about:

a) In general, there are two models that can be used to analyse these variables: fixed-effects models and random-effects models. The difference lies in the design of the study's initial population.
b) Assessing whether there is heterogeneity between the two different studies that were part of the meta-analysis. The null hypothesis that there is no difference between them must be presented.

(c) Evaluation of the existence of publication bias. A graph known as a funnel plot is used for this purpose. A good model is one that produces a symmetrical funnel image. When this is not the case, there is a relationship between the size of the study and the effect of the treatment. Small studies are generally considered of lesser quality and present biases that influence the final result.
d) Finally, a sensitivity study, which evaluates the robustness of the study, should be performed. Once a position in relation to the study has been formulated, it is necessary to determine whether it is feasible to apply it to the population that is normally worked with; there are many options as to how to read a meta-analysis.

Our relationship with science

Both the concept of science and the relationship we have with science are open to debate. Can the results of science be considered a code of conduct for actors in a particular field? Can they be considered as a way to overturn rules or practices? In other words, can and should what they tell us be investigated to achieve a particular objective? The answer clearly seems to be no. Kennedy's (1999) proposal considers that the role of science can be to clarify instrumental and conceptual aspects. We believe that science has a fundamental role, if research is understood as the aim of receiving and accepting a precise answer to a question posed in terms of relations between means and ends—for example, if a particular intervention does or does not produce certain (desired or unexpected) effects upon a given category of people. Science informs us about socially established practice; it does not create or regulate this practice. These last two functions depend on values and norms, and they are irreducible to scientific statements. Medical research is, without doubt, the most evolved form of this type of research, and it is responsible for the medical breakthroughs of the past few years. Extended towards teaching, it should be considered on three levels: a) description; b) verification on a small scale), and (c) on a large scale, with a long-term study. For Bissonnette, Richard and Gauthier (2005), only research at the third level can serve to justify widespread implementation decisions, understood as pedagogical innovation. However, this type of research is inadequate (even naive) in the field of social sciences. Based on a positivist conception of science, teaching models, behaviours and methods are objectified, and given their essence, they may cancel out, with the help of elaborated quantitative methods and large sample sizes, the singular action of the theme, and they act, interpret or translate in a given context. However, the profession (which is supposed to be reflective) and its tools cannot be separated from education or the professional in action.

With regard to the conceptual role, it is worth pointing out that this is a type of function that has a significant advantage over the previous one in terms of its ability to understand the world, since it has more influence on modes of thinking, and less on the provision of orientation for policies or precise practices.Researchers in the sociology of science have for many years called attention to the nature of scientific work and the social contributions that it produces. Science is not a perfect world, and nor is it above the rest. It does not provide incontrovertible truths. On the contrary, the scientific field has been constrained by a diversity of delimiting energies and paradigms, similar to those of other fields.However, scientific

discourse cannot be compared with any other discourse; we must combine a socioconstructivist perspective of science with a realist epistemology, since science is really a product of historical social relations, and it is also capable of producing objective knowledge that transcends history and the social context of its production. There is an extraordinary condition that is found in the academic field, one capable of generating competition and debate among researchers, as well as collective thought, in spite of this being a relative condition, since a struggle that varies in space and time is at play (Bourdieu, 2001). Gibbons *et al.* (1994) offer an analysis of contemporary scientific evolution and distinguish two modes of scientific activity, which they call mode 1 and mode 2.Mode 1 is focused on fundamental research, which could be understood as knowledge for knowledge's sake. It presents a disinterested science and takes place in a stable and autonomous institutional framework. Mode 2 refers to research, not without some difficulty, with different names: for example, research, intervention research, oriented research, contextualized research or sponsored research. It is a heteronomous form of research, determined by the researchers and users or sponsors. It is completed based on social priorities, socio-political delimitations, questions raised as matters outside the scientific sphere, and so on. One might think here from the viewpoint of a double language that is being spoken in terms of what scientists say and what social actors say.

Mode 2 reflects the penetration of science in the whole of social life, which seeks to transform scientific activity itself. It can be seen as the realization of a modern utopia, since scientific knowledge is used to ensure social regulation and development; manage increasingly complex and heterogeneous social classes; fight against ignorance and poverty; overcome disease; predict, control or prevent natural disasters; produce wealth and well-being; ensure human longevity; develop an enlightened culture; and so forth.This scientific activity is not the opposite of fundamental research, but, rather, a parallel activity. For it should not be forgotten that the social sciences have always sought to be relevant, which contributes to the modernization of society and the construction of a more just and equitable society.Marx (1967), Durkheim (1997) and Bourdieu (2001) all wanted their research results to be useful and relevant, not servile or subjected to those in power.

This problem is resolved by Bourdieu (1999) in the work the Weight of the World, which in these eloquent terms states:"What the social world has done, it can, armed with this knowledge, undo. In any event, what is certain is that nothing is less innocent than noninterference. If it is true that it is not easy to eliminate or even modify most of the economic and social factors behind the worst suffering, particularly the mechanisms regulating the labour and educational markets, it is also true that any political programme that fails to take full advantage of the possibilities for action (minimal though they may be) that science can help uncover, can be considered nonassistance to a person in danger."Certainly, the involved science here is full of ambiguities and temptations, given that we express the penetration of knowledge in social life and in the management of social problems. However, common sense and dogmatic thinking that contribute to collective reflection (which may also be required) are questioned, subject to political imperatives or economic profitability, both as a tool of emancipation and control and as one of domination and of empowerment.

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