

On why there is generalisation in research on single cases

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Abstract

The products of educational research of all sorts can appropriately be seen as producing generalisations —from plain statistical generalisation from samples to populations, to grounded theory, local theory, democratic theory, and even thick descriptions and philosophical analysis. This way, descriptive, explanatory and normative accounts of single cases can also be understood as such, inasmuch they relate to general ideas, which are produced, rehearsed, supported, modified, qualified, etc., in the course of a research project. Nevertheless, they vary in their degree of explicitness, their certainty, their complexity, and the substantive dimensions they generalise on. The neglect of this characteristic in educational literature may stem from the assumption that in research, one first finds something about one or more cases or situations, and then generalises (or does not generalise) the results to other contexts. But generalisation, I argue, is there all along the process.

Introduction

For a very long time, received wisdom has been that educational research produces theory as a result of its activities. And a characteristic mark for theory would be that it is constituted by propositions *of the general*, that relate variables in ways that should apply across broad ranges of educational settings. The procedure for constructing theory was one that allowed the researcher to generalise from a sample to a population, and to control —as far as possible— the effect of other variables: experiments in which sampling is randomised or designs which resemble the experimental ones as closely as possible (quasi-experiments).² However, the complex nature of educational situations — or, generally, social situations— has revealed the inadequacy of this as the only model for research. This way, other approaches have concentrated on studying situations more in depth, attempting to grasp their holistic richness and complexity. But then, there appears the issue of whether the end results of that sort of research can be legitimately generalised, so that they are useful for other contexts and situations, or even for policy making on levels that go beyond the local. As will be argued in the paper, the discussions seem to have assumed that a generalisation in research is the product of a purely inductive process. And with this assumption, they have not realised that generalisations are already produced in all sorts of research, *including accounts of single cases*. In this paper I will argue why.

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² Carr (2006) has usefully reminded us that this has not always been the case, as the history of educational theory has shifted from a philosophy-based idea of theory, to a positivistic one, and on to new forms that seem to simultaneously have an influence on society in contradictory ways.

Issues about generalisation in educational research

General propositions that have a universal character – variously called universal laws, or scientific laws – are generally discarded as a possible product in the social realm; or, at least, it is claimed that whichever such laws can be found would be so trivial as to be of no interest or relevance to practitioners (Bassey, 1998). Nevertheless, a more moderate possibility for the research activity would be the pursue of statistical laws; general propositions which do not claim universality, but quantify the degree – usually in percentage terms – to which some relation, causal or otherwise, applies. And randomised control trials would be the mechanism by means of which such laws could be obtained. By looking at a rather large number of cases randomly chosen – either from the entire population, or within the various groups or strata that the population can be divided into – one would presumably get certain confidence in the results obtained. Nevertheless, as Smeyers has argued (2008), such a type of research design is not free of problems, one of the most important being that the richness of the situations studied is ignored in favour of precision and an emphasis on commonalities between cases. By using large samples in randomised control trials only a few factors can be taken into account, and most of what is important will inevitably be excluded. But, furthermore, the holistic complexity of the situation will be missed altogether:

It seems that in educational contexts it is not so much factors or elements that have to be studied as such, but the complex relationships between them. Here the presence or absence of something may change the whole picture and, consequently, the conclusions that can be drawn from a particular setting. (Smeyers, 2008, p.79).

Considerations such as these seem to have been at the basis of the emergence of other research proposals, and especially those that attempt to take both a broader – in terms of the number of aspects considered – and deeper look into the complexity of educational situations. The general framework of ethnography and of qualitative inquiry in general, seems to pick up on the goal of capturing such complexity, although it does not have to preclude the possibility of using quantitative methods in a complementary way (Goetz and LeCompte, 1984; Elliott and Lukes, 2008). Additionally, action or teacher research is seen as a reaction to various failures of traditional forms of research, among which is the fact that “generalisations derived from much educational research based on large samples may be positively misleading, since findings derived from large scale studies are not necessarily reflected in the much smaller numbers that teachers are concerned with” (Foreman-Peck and Murray, 2008, p.145).

One price to pay is, of course, that the effort required for broader and deeper studies of educational situations prevents them from being carried out on large numbers of cases. And then, they attract the criticism about the impossibility of generalisation: How to obtain conclusions about populations when only one or a few cases have been studied?

There has been a lot of discussion of this issue, for a few decades now. There are various differences in the positions, as well as some commonalities. Some authors have

suggested ways in which less pretentious versions of theory can be constructed by means of a rather long-term accumulation of experiences of single cases, but without any attempt at quantification (see Bassey, 1998). Some, like Woods (1992), have even complained about researchers who stop at description, even if it is of the sort that Geertz called "thick description" (see also Lecompte's idea of local theory, in Schensul et al., 1999; and for a critical discussion, see Hammersley, 1992). Theory construction, here, would be about a progressive refinement of the categories that are involved in the hypotheses that explain and/or predict behaviour in educational settings.

For some other authors, however, the irreducibility of singular situations would be a good enough reason to declare that educational theory is simply not possible and that it should be completely rejected as a desired end product of research. This way, for instance, Carr says that the formulation of universal theoretical generalisations about education "can never be achieved because, far from being 'universal' or 'general' such theoretical generalisations are always abstractions from the malleable world of practice and thus always shaped by the very features of practice - its particularity and contingency - educational theory claims to transcend" (2006, p.147; see also Thomas, 1997 and 2002). But what, then, would be the point of doing research? As it seems, there is some convergence of opinion about the way in which some generalisation can take place even if research only tackles single cases or a reduced number of cases. But this generalisation would not be of the same kind as that intended by randomised control trials, and various authors have rushed to assign it an adjective so that it is made clear that there is a distinction: analytic (Yin, 1984), retrospective (Stenhouse, 1980), or naturalistic (Stake and Trumbull, 1982), among others. Other authors have preferred to drop the term "generalisation", and replace it with another one: for instance, relatability (Bassey, 1981), or transferability (Lincoln and Guba, 1985). The general idea is that a rich description of a single case or of a reduced number of cases, if of a good quality, will help other practitioners see their own cases reflected and judge for themselves what is applicable in their own practice. In Stake's words,

To assist the reader in making naturalistic generalisations, case researchers need to provide opportunity for vicarious experience. Our accounts need to be personal, describing the things of our sensory experiences, not failing to attend to the matters that personal curiosity dictates. A narrative account, a story, a chronological presentation, personalistic description, emphasis on time and place provide rich ingredients for vicarious experience. (1995, p.87)

Those generalisations, as Stenhouse remarked, would not be a matter of calculation by the researcher, but of judgement by the practitioners who are part of the audience (1978). Interestingly, the responsibility for the process of generalisation or transfer is effectively displaced, in these accounts, from the researcher to the audience. The word "illumination" has also been frequently used in connection to this process. Concerning the products of action research, Pring has put it in the following way:

By contrast with the conclusion of research, as that is normally conceived, action research focuses on the particular, thereby not justifying generalization, no one situation is unique in every respect and therefore the action research in one classroom or school can *illuminate* or be suggestive of practice elsewhere. (2000, p.131, italics in the original)

The problem that appears now is that the idea of *illumination* has still been left relatively obscure in the literature. What does it mean that some report of an experience, or of a situation in general, can “illuminate practice elsewhere”? And what are the possibilities and limits of that process? It seems to me that these questions have not been explored sufficiently, and this paper attempts to contribute to this matter. Its perspective is philosophical rather than psychological, in that I will not try to provide an explanation of the causal mechanisms by means of which that process occurs. Rather, I will focus on some of the logical conditions that are needed for processes of generalisability (or relatability, or transferability). In particular, I will be arguing that the discussion has assumed that research activities produce some conclusions about the particular cases investigated, which only afterwards will be (or will not be) generalised. This assumption has prevented us from noticing that any conclusions –whether they are thick descriptions or explanatory local theories– are already *constituted by* generalisations, even if they do not appear explicitly as such. This conclusion will in turn suggest that there is an important responsibility concerning the quality of those implicit generalisations, on the part of the researcher. So, research will inevitably be about theory, if those general ideas that are produced as a result of research can so be considered –and I think they should.

Types of end results of research

Before I examine the general character implicit in research results even when they are about single cases, it may be useful to recall the usual distinction between descriptive and explanatory accounts. Although in many cases it may be difficult to tell description from explanation, to put it briefly, a *description* is concerned with what there is, whereas an *explanation* is concerned with why or how that which is, came to be. Now, due to the fact that some of the discussion concerning quantitative and qualitative approaches has hinged on the interpretive nature of the latter –attempting to understand how those involved in a situation make sense of it and what they attribute value to, rather than trying to find relevant factors or variables with causal power over the development of events– it is important to mention that I will not be making use of this distinction in this paper. The reasons for this are basically that, firstly, I follow Davidson in believing that reasons –which are part of the interpretive realm– can be legitimately seen as causes of behaviour (Davidson, 1980), and therefore interpretation is simply a particular kind of explanation; and, secondly, that my arguments will be based on a feature common to both; that is, their ability to help us see what has led or will lead to certain phenomena in the educational domain. Moreover, arguably, research projects in the educational domain that are concerned only with one of them –either pure non-interpretive explanation or pure interpretation– are rare.

A third kind of end result of research may be less common in the academic literature, but no less important given the applied nature of knowledge in education. A *normative* account of a situation, refers to the judgement about what ought to be in that situation. In the previous paragraph I just mentioned that certain –especially but not exclusively qualitative– research approaches attempt to interpret the values and principles for action that actors in a situation have. They do in fact address a normative dimension that is usually lacking in other –especially, but not exclusively, quantitative– sorts of research. Nevertheless, the results of those interpretive studies do not fit into the category of what I have termed “a normative account of a situation”. For them to belong to this category, instead of producing a third person report of the beliefs held by the actors of the situation concerning what ought to be, they would have to provide an account of the normative beliefs that the researcher commits to, that she has found, discovered, constructed, reflected on, or whatever we may call it, about the situation. The relevance and necessity of such normative knowledge –if we may so call it– has already been broadly discussed (see for instance Bridges and Watts, 2008, in the context of informing policy and decision making), but perhaps should be continually reminded due to its noticeable absence in practice.

In any of these three kinds of end results of research, there is inevitably generalisation, even if they are descriptive, explanatory –including interpretive–, or normative accounts of a single case or situation. But the form of the generalisations will vary, and the following sections address each one in turn.

Generalisation in descriptive accounts

In the case of descriptions, the kind of generalisation implicit in them might be, in most but surely not all cases, the least problematic one. It is one that we might call *conceptual generalisation*. Evers and Wu (2006) have already argued about its existence, but, curiously, they have called it *empirical generalisation*. According to them, it “arises from the fact that many of the terms used in the description of particular phenomena or events, are general terms” (p.512). Indeed, most of them are. But the important issue here is that whatever concepts are used to describe some situation will be part of general theories that make claims about them. Descriptions of critical thinking, autonomy, motivation, engagement, second language learning, understanding, and so on, in particular educational situations, will inevitably be part of theories that specify what those concepts are and how they relate to other concepts, in a general way; that is, in a way that is relatively independent of the context they are applied in. For instance, if I use *critical thinking* as being, among other things, about thinking with reasons (Norris and Ennis, 1989), then I am claiming, in a general way, that it involves reasons *regardless of the context or particular situation I may be investigating*. Some might try to invoke a distinction between definitional propositions –which would be, among others, *declarative*– and other propositions that do state some claim –which would be *assertive*. Presumably, a definition can only be declared, but can be neither true nor false; and therefore, there would be no generalisation in the stating of a definition. This is nothing

more and nothing less than the old Kantian distinction between analytic and synthetic judgements. However, Quine has already showed why this distinction is inadequate (1953). Those propositions that we take as definitional do claim something that can legitimately be deemed true or false if reasons suggest so. We only tend to treat them as if they did not, because we, presently, cannot imagine any way in which they could be refuted. Based on this, it can be concluded that the distinction between conceptual generalisations –such as “critical thinking always involves reasons”– and other generalisations –such as “most students taking courses based on assignments in which they need to employ critical thinking have high levels of their motivation”– is not of essence, but of degree.

Some research approaches have tended to relativise or contextualise many of the terms that are central to their studies. They do this by means of inquiring about how those persons involved in the situation being studied conceive and stand in relation to those terms. While this move would seem to reduce, or even eliminate, the role of generalisations, and take the responsibility off the researcher, it is necessary to note that contextualisation has to stop at some point, for at least the terms of the interpretation will be some that the researcher has to commit to, and not attribute to the actors involved. And here conceptual generalisations will necessarily appear.

Now, are these conceptual generalisations, end results of research? Or are they only inputs that influence or frame research? The second option is not too controversial. As is relatively widely accepted in the literature, especially in that of the qualitative kind, any interpretations on the data collected –or for some authors even the data themselves– are theory laden. If we accept that these framing theories are, at least partly, conceptual generalisations, then they would constitute the lenses through which the researcher sees social reality. But it is the first option that I am mostly interested in, because it seems to have been largely neglected in the literature; that is, conceptual generalisations that are constructed or refined as a result of the research process. Elsewhere I have argued that in an extended, reflective, form of empirical research, conceptual development is possible (Mejía, 2008). This does not mean, of course, that this kind of inquiry always takes place in any research project that aims to produce a description of a situation. It may occur to a lesser or a greater extent.

Apart from their involvement in conceptual generalisation, we can also see descriptions as related to non-explicit attempts to play a role in explanatory or normative generalisations. Let us, for instance, consider the kind of thick descriptions proposed for reports of single cases. What is to be reported about the situation? Out of all the elements that she can imagine, the researcher will select some that she takes as particularly relevant. But relevant for what? There will be some purpose that will have motivated the research in the first place, and it may involve explaining some aspects of the situation, or judging its normative content. Therefore, the aspects that she will report will be influenced, if not determined, by those purposes. But then, even if the connections have not been made explicit, even if the researcher wants to be cautious and

not make unwarranted generalisations, they are implicit in her choices of what to report and what not to report³. That is, the researcher will include those elements of the situation that she thinks play a role in explaining or determining the value of certain aspects of the situation. This orientation towards a purpose leads us to the examination, in the following two sections of this paper, of the cases of explanatory and normative accounts of a situation that are produced as a result of research.

Generalisation in explanatory accounts

Bassey suggested that the construction of theory from the study of single cases could develop through a gradual accumulation of studies that progressively refined the conceptual categories involved in theoretical hypotheses, expressed as *fuzzy propositions* that do not attempt to quantify the relations. The proposed process was about as follows (Bassey, 1998):

1. Suppose that in a situation $s1$, the carrying out of action x leads to result y .
2. The fuzzy proposition is drawn that in other situations like $s1$ it is possible that x may lead to y .
3. Suppose that a couple of replications are carried out in chosen situations $s2$ and $s3$ and it is found that in both, x leads to y .
4. The fuzzy generalisation is drawn that in other similar situations x is likely to lead to y .
5. Suppose that in a further replication at $s4$ it is found that x does not lead to y .
6. The researchers examine in detail not only what happened in $s4$, but go back through $s1$, $s2$ and $s3$ and try to modify the description of x to find an x' such that in $s1$, $s2$, $s3$ and $s4$, x' leads to y .

This is a proposal for a kind of research that fits into the explanatory category mentioned in the previous section. There are at least two related difficulties in this formulation. One of them concerns the idea of replication of the action x . As Olson (2004) has argued, this proposal rests of the assumption that the concept of *treatment* – which has been borrowed from the medical sciences – can appropriately be applied in the educational domain. A treatment is fairly well defined, and there is a good deal of certainty that the relevant aspects that define its implementation can be controlled so as to guarantee that all the applications of the treatment are the same. But what are the boundaries within which an educational treatment is to be defined? What aspects count as being part of the definition? Of course, it is within the rationale for the process that, by going from x to x' in step 6, that definition is refined; and thus one might think that there is no need to have it well defined from the start. However there is, as a minimum, the requirement to have some specification of what the action x consists of, because otherwise it would not be even possible to claim that the same action has been applied

³ And this is why, in my opinion, Stake's idea that the responsibility for the (naturalistic) generalisations is only the practitioner's, seems to me inadequate. The development of this argument is, however, beyond the scope of this paper.

in a second situation; that is, that it has been *replicated*. But then, any specification of any action that can meaningfully be said to have been replicated would be so simplifying of the actual educational processes, that from the start we would be giving up the possibility of grasping the holistic richness of the situation. This is so because when a certain level of detail and richness is reached in the definition of an action, no two actions can ever be determined to have been the same in educational situations. And the same applies to the specification of result *y*: only at the cost of great simplification of the rich complexity of life in the social domain, it can be said that the same result has been obtained in two different situations.

The second difficulty concerns the implications of formulating the very first element in the process, which involves a causal relation: “in a situation *s1*, the carrying out of action *x* leads to result *y*”. Because the discussion on generalisation in Bassey’s proposal focuses on moving from postulating a causal relation in one situation to doing it in other similar situations, *it takes the determination of the original causal relation for granted*, as something that is independent of the generalisation, and that takes place (or does not) before the latter. However, I am claiming that the very expression “lead to”, which is not correlational but causal, already carries with it the generalisation that in Bassey’s formulation was only drawn in a subsequent step. In other words, the fuzzy proposition in step 2 (“in other situations like *s* it is possible that *x* may lead to *y*”) cannot be false if simultaneously the finding in step 1 (“in a situation *s1*, the carrying out of action *x* leads to result *y*”) is true.⁴ We can see why this is so by considering the possible objections that there could be for the assertion that in a particular situation *s*, *x* led to *y*. And here we can broaden the limits of *x*, so that it is not necessarily an action, and can be any event in general. What possible objections could there be for this causal assertion? Suppose that it has been determined that events *x* and *y* did take place. In a first objection, it could be thought that *x*, generally, and according to our understanding of reality, both social and otherwise, cannot be causally connected to *y*. This, we may think of as an *intrinsic* objection. A second one is that *x* can be causally connected to *y*, but the explanation may be insufficient, because *x*, on its own, does not have the capacity to produce *y* under normal circumstances. This might be termed an *extrinsic* objection. When confronted with this reply, the researcher may have to modify –enrich, or completely replace with a new one– her description of the event *x*, thus constructing *x*.⁵ Let us notice that both the intrinsic and the extrinsic objections have been based on a questioning of the generalisations about the capacity of *x* for producing *y* in some or all the possible situations. To conclude, for it to be meaningful, the claim that in *s*, *x* led to *y*, must be taken as constituted by generalisations that combine in a singular case or situation.

⁴ I am not using any radical notion of causality, such as that specified by both necessity and sufficiency, but a moderate one (see Smeyers, 2008).

⁵ Here we are coming back to the elements in Bassey’s formulation of the process. But it should be noted that there is a difference in that my account does not rely on the establishment of the relation between the same action *x* and the same result *y* in a variety of situations.

Generalisation in normative accounts

As regards the normative, the structure of the argument is very similar to that just presented for explanations. But this time, instead of the postulation of events as causes, here it is reasons that justify a certain judgment about what ought to be or ought to have been in a situation.

Bridges and Watts have argued (2008, pp.48-49) that there are various different sorts of things that we may refer to when talking about educational policy. From their list, I now draw two that are, perhaps, more appropriate for this discussion, and transform them into direct normative claims. Their basic structure, when referring to a single case or situation, might be something like this:

- In the situation s , actor a ought to perform action x , because of reason r .
- In the situation s , result y ought to be pursued, because of reason r .

The argument in the previous section is mirrored here. Without repeating it, let me remark that when a reason r is specified –and it should be– for justifying either an action x or a result y , we understand that a general quality in r has a justificatory power in relation to x , or y , *in a general way*; for otherwise we could not understand it as a reason.

In this case of the normative, the idea that there are generalisations –in the form of principles or values– may seem less controversial, because we are used to thinking that in this dimension knowledge construction takes place in a deductive way, from the general to the singular. And, correspondingly, it has usually been associated with the work of philosophers who are not necessarily in direct contact with the educational situations that normative conclusions apply in. This would suggest that normative theoretical beliefs enter research studies in the form of a framework. But, this doesn't have to be so, for about the same reasons presented in the section about descriptive accounts in research. In this case, it is worth recalling Elliott's idea of the teacher as a practical philosopher, which is a good departure point that brings this task of establishing what ought to be done, back to the practitioner (see Bridges, 2003; and Elliott, 2007). Additionally, I have argued about the feasibility of the construction of normative knowledge, as a possible feature of an extended notion of empirical research (Mejía, 2008). Furthermore, as Bridges has claimed,

We probably do not even fully understand our educational values until we have seen them implemented or seen the conflicts which arise in practice between different principles to which we ascribe in general abstract terms. We can come to understand our philosophical principles differently by seeing them realised in practice, and hence experience can come to change the principles we hold as well as being informed by them. We can evaluate our experience by reference to our principles: and we can re-evaluate our principles by reference to our experience of their realisation in practice (Bridges, 2003, p.190).

That is, research into the normative in a single case does not have to be the establishment of the values of certain parameters of a particular situation, which are then inserted into our general principles – as if they were equations – in order to determine what ought to be done there. Research into a single case can produce or refine, rather than just use, normative generalisations.

Concluding remarks

I have tried to show the extent to which generalisations are already present in research, even that which focuses on single cases. I have also argued that those generalisations should not be seen only as constituting a frame within which research takes place, but that they are its legitimate possible products. And this is so, in similar but not exactly the same ways, in descriptive, explanatory and normative accounts of the situations investigated that are produced as a result of research.

The difficulty so far may have emerged, in my opinion, from the assumption that one first constructs some knowledge about a situation, and then generalises it – or not – to other contexts and situations. And this assumption, in turn, may be the result of the attempt to have neat rational processes of knowledge construction that fit well into simple and therefore attractive logical processes – such as induction and deduction – that we can try to reproduce, as if in a method. But knowledge construction processes may occur in ways that will continue to escape from our full understanding.

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