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### Is a Systematic Education Feasible for Educational Research? Some Reflections on the Subject

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#### Abstract

The training of scholars in the field of educational research cannot be based solely on their learning of the so-called “scientific method”; nor should it be reduced to an approach which emphasizes the uniqueness of each object of investigation. To form good scholars, it is first necessary to make a rigorous selection of the candidates applying to graduate programs. Once this has been done, the students must be taught the adequate handling of the fields of knowledge involved in the discipline. They also have to develop the necessary skills and techniques required by their training. The direct contact with more experienced researchers, in order to guide their work, is also mandatory.

*Key words:* Graduate studies, educational research, academic excellence.

#### Introduction

The matter of what education is necessary to make a good researcher in the area of education –just as in other areas of human sciences– is sometimes approached from two radically different points of view, both of which, in my opinion, are equally unsatisfactory.

- a) At one extreme, sometimes the formation of researchers is attempted through training in specific subjects with a technical approach. Beginning with a simplistic academic vision of the strategies of scientific research, the so-called “scientific method”, and the absolutism of a particular approach, typically that of surveys, students are taught such techniques as sampling, preparing questionnaires, and processing data (usually at an elementary level). The expectation is that someone who manages these techniques acceptably will be a good researcher.
- b) At the opposite pole, others maintain that it is impossible to systematize the teaching of research, on the grounds of an assertion which, taken literally, becomes an irrelevant platitude: that of the unique character of each object of study. With a clear preference for case studies and ethnographic approaches, the key notion in this case, also simplistic, is that of creativity: courses are useless; what is necessary is to launch oneself into the work and learn along the way. The only way to learn research is to do it, it is said, just as the only way to learn to swim is to jump into the water.

My position is an equal rejection of both the previous extremes. Believing that the researcher’s ability in analysis and synthesis and, his/her creativity, are indispensable ingredients in an effort of quality, I recognize that research cannot be reduced to one technique nor to a combination of techniques. Rather, I consider research ability to be a complex concept, whose components may be developed in different ways and measures.

Returning to the metaphor of swimming, I contend that while it is possible to learn to swim by simply jumping into the water, this method will never produce an excellent swimmer. The person who wishes to become outstanding in this area must submit him/herself to the discipline of long training during which one will sometimes practice one particular ability –how to move the legs, for instance, or how to breathe correctly– in order to perfect the technique. At other times the aspiring swimmer will combine various specific techniques in the larger business of “swimming”.

Of course, learning how to do research is very different from assimilating psychomotor skills such as swimming. Therefore, one should not exaggerate the comparison. But I consider that the basic idea is important: we should analytically identify the separate components of the general ability to do research, and then we can ask ourselves about the way to develop each existing component.

### **The components of research ability**

With reference not to *institutional* capacity for research, which includes the existence of libraries, laboratories, etc., but to individual ability, I believe that the elements that must come together to make a good researcher can be summed up in the six following points:

- a) Good basic intellectual ability. I accept those modern psychological theories which present a diversity of intelligence types. While none of these should be despised by the researcher, the activity of the latter presents no special need for special or artistic intelligence, or for that of an emotional type. Rather, a researcher needs the kind of intelligence we consider more conventional –that which is manifested in the ability to do analysis and synthesis, or to carry out abstract operations. Although this may seem obvious, there are circumstances which compel persons less capable of intellectually-demanding tasks to carry out research projects. Not only in Mexico, but in the United States and other countries as well, one finds a low enrollment of those majoring in the social sciences. Hence, it is not unusual for all applicants to be accepted, regardless of their ability, in programs supposedly designed for the training of researchers.
- b) Especially, competence in reading, and in written and oral expression. The nature of research presupposes a need to know what others have found in a given field before commencing a new research process, and an ability to produce well-written, well-structured texts, of a literary style suitable for a specialized article, a monograph, or an expository text, so that the research results will be available to others. While such writing benefits others, the author him/herself is the first to be enriched by critiques of the work.
- c) Competency in the specific field of knowledge. I have no wish to deny that the advances of modern science are other than simply lineal; nor do I wish to reduce its history to the simplifications found in textbooks. However, we must recognize that one of the characteristics of modern science is its cumulative nature, a result of the work of growing numbers of persons and groups who dedicate their attention to certain themes. Even with the difficulty implied by the publication of thousands of articles per year, in hundreds of specialized magazines, it is now unthinkable that a good researcher should ignore those important works related to his/her area of interest, whether in a particular discipline or in an interdisciplinary area.
- d) Mastery of a set of related techniques. Although competency in techniques does not in and of itself make a scientist, a good researcher cannot be without it. In those places where research is still in the process of organization, it cannot always count on the support of technicians or assistants to whom it can delegate the multiplicity of field or laboratory work routines. And, when s/he is lucky enough to have this type of support, s/he must be responsible to train its assistants and supervise them as they carry out a particular project. In addition, regarding the analysis of information, one might have the help of someone who specializes in managing certain statistical procedures, *for example*; or what is more frequent today, one might have the latest version of a good package of specialized statistical programs. However, no one who lacks the ability to choose the most appropriate type of analysis for interpreting results can consider him/herself a good researcher.

I emphasize the “for example”, since I do not suppose that the only form of doing good research lies in using complex statistical procedures (although I am convinced that if a researcher uses these extraordinary tools his/her work will be much

enriched). Still, I do believe that the idea is equally applicable in the case of other focuses: if the person in charge of a project using an ethnographic approach, shall we say, wishes to be a good researcher, s/he cannot be unschooled in the relevant procedures, even if funds are available to pay a specialized assistant.

- a) The interiorization of appropriate attitudes and points of view. As well as aspects of cognitive character such as the preceding, a good researcher must have developed elements of an attitudinal type, such as attitudes of curiosity, self-discipline, diligence, precision, criticism and self-criticism; intense and regular work habits; willingness to participate in teamwork, etc. The ever-increasing clarity of the collective nature of academic work heightens the importance of these features, without which intellectual capacity and theoretical-methodological training can be of little account with regard to productivity.
- b) The ability to unite already-existing elements. An excellent researcher, in my opinion, not only needs the previous components a to e, but also must be able to combine them in a harmonious fashion within the context of each particular labor. Here, as in general, the whole is more than the sum of its parts.

### **The development of the components: education**

Having identified the foregoing components of the ability to do research we can return, with a better prospect of answering it, to the initial question: is it possible to develop these components in an intentional and systematic way? In other words, can one systematize the education of a researcher? The answer is different for each component. Let's see.

- a) Good basic intellectual ability. The cognitive sciences show that it is not impossible to develop the ability for logical thinking, abstract reasoning, etc., abilities which, in an imprecise way, we usually mean when we use the term "intelligence". Nevertheless, these same sciences show that the preceding is not simple, and that ideally it should be done as early as possible. Otherwise, the old saying that "you can't teach an old dog new tricks" suits the case. It seems unreasonable to think that programs focused toward the upper-level education of researchers should have to include among its objectives, remedial chores as complex as those mentioned. Because of this I consider it essential that master's and doctoral programs for the education of researchers employ a rigorous method for selecting their students, taking special care in the admission process to make sure of an adequate level of intellectual ability in all those accepted.
- b) Reading ability; oral and written expression. It seems clear that these abilities may be systematically developed, and that this does not require especially sophisticated focuses. Rather, it needs constant effort and a continual process of correction and feedback, so that the interiorization of these practices become *habits*. In defining this last word, medieval philosophers used to say it was like second nature. This can happen with reading, and with oral and written expression as well.

It is not rare to hear complaints about how little people read in our society, or about the difficulty implied, for children in the latter part of the twentieth century, by the competition between television and a love of reading. Less well-known is something which should greatly worry many educators: various recent studies show the scant amount of time given to the practice of reading and writing at all scholastic levels. This causes one to consider that schools could counter the influence of a medium hostile to reading in a more effective manner than that which is presently employed. Those programs seeking to educate researchers at an upper level should require that their students do a great deal of reading and writing, and should possess the necessary feedback mechanisms to bring the quality of their students' reading and writing up to a level appropriate for those in a postgraduate course.

- c) Competency in one or more fields of knowledge. Given the presence of the previously-mentioned abilities, it seems clear that the third can also be developed in a systematic manner. The reading of key authors; the reasonable comprehension of their ideas; the action of contrasting these ideas with those of other authors; the critical thinking which detects strong and weak points; and finally, the construction of one's own synthesis... all these are essential tasks in the education of a researcher. These tasks can and should be carried out continuously and systematically, bringing together the student's efforts; the orientation of the teacher; and the discussion and dialogue which takes place within the group of persons of different levels of experience which comprises a good seminar.
- d) Mastery of a set of techniques. It seems clear that this is a teachable component. Still, there is a tendency to underrate its importance, giving the impression that one can ignore the laborious task of mastering a variety of techniques. The correct stance does not seem difficult to establish: a good researcher should be able to utilize the major techniques of his/her field on an elementary level, as well as having acquired a mastery of a sufficiently-broad range of these.
- e) Appropriate attitudes and points of view. This component is much less easy to systematize than the previous ones, so that a direct focus is not suitable. Still, we do not face something that happens randomly: the development of attitudes and points of view favorable to research come from a daily interaction between the learner and those who have previously developed these elements and who use them in their daily labors. For this reason it is most desirable that the education of researchers take place in the heart of established groups where this type of *ethos* prevails.
- f) The ability to unite already-existing elements. Like the preceding component, this cannot be the object of special courses but requires a tutorial-type support given the learner by a more-experienced researcher who, through dialogue with the former, can help in clarifying his/her ideas and in arriving at the personal synthesis which represents the culmination of the work.

## Conclusion

The “recipe” which I propose can be summarized, then, by saying that a program can succeed in training good researchers if it carefully selects its students; if it requires them to read and write a great deal, and gives them feedback; if it involves them in dialogue with the great authors of their field, then allows them to arrive at their own synthesis; if teaches its students a good array of research techniques; if, thanks to daily contact with those of their work group, it cultivates in them a research *ethos*; and if the more-experienced researchers in the group consider it their greatest achievement when their students produce works of an excellence that exceeds their own.

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