

## Ethical aspects in providing a qualitative research in science education

Emil LAZĂR<sup>1</sup>

### Abstract

Every domain of knowledge requires a certain level of perceiving data, knowledge, realities. That's why it differs how areas specific to exact science can be easier investigated with the help of quantitative research methods, while areas of social knowledge (including Education Sciences) need. Educational research has supportive value for practitioners in education and acts as a booster for didactic innovation. There is a logic in the investigating demarche of pedagogical research, the way we can understand the necessity of carrying out some sine-qua-non conditions for performing a research that is at the same time original, ethical and qualitative.

**Keywords:** *educational research;, quality of educational research; plagiarism;*

---

<sup>1</sup> Teacher Training Department, University of Craiova

## **1. The educational context**

In the analysis of scientific domains, the criterion of objectivity or the subjective interpretation of the knowledge domain, represents an aspect which makes the difference in perceiving data, and therefore gives different grades of using them. The acquisitions from the area of exact sciences are comprehended more easier (because they express substantial facts), unlike social sciences (including educational sciences), strongly diffused, automatized sometimes, with a complex and complicated subject: the one who learns. The borders across sciences are difficult to outline, which allows transfers of methodology and experiences.

In the area of educational sciences have gathered theories, ideas, techniques certified in experimental way, constituted in premises of innovating educational processes and in striving to multiply their quality and efficiency.

Research in education is considered a support for innovation and an enlargement for educational-instructive processes. For a teacher, educational research is a gain and an obligation as well. As a benefit, educational research, materializes as the pedagogical culture that a teacher is required to hold.

We speak of a positive fact: pedagogical research has spread and produced a number of remarkable results. But we also speak of obstacles in achieving the impact of educational research in pedagogical practice. We have to understand that there is a relation between researchers in the domain of educational science and the users of the results of pedagogical explorations (materialized in dissemination of conclusions, results and products of research and their application in teaching practice), in order to improve the teaching process and to increase the quality of students' learning outcome.

We may speak of a proximity of pedagogical research to teaching practice, as long as the results of one of them come from teachers' needs and contribute to improve their activity.

## **2. Educational research methodology**

Pedagogical research enjoys an autonomy degree, based on the reflection upon teaching activity and the ideal of its improvement, in the way of achieving an efficient educational system in accordance to the profile of a graduating student (at different school levels). Pedagogical research itself generated a branch of educational science: educational

research methodology. The subject of this branch/ pedagogical discipline is represented by the stages, methodological and instrumental mechanism and the acting plan of a research in educational field. The main problems in educational research are related to:

- Identification and the definition of question/ problem/ thematical interrogation to which an answer is looked for based on documentation/ on theoretical foundation;
- The use of an appropriate methodology leading to explanations;
- The transfer of conclusions/ results to educational practice;
- The possibility to replicate/ multiply the results in other educational contexts;

There is a logic of the investigation of educational research. Each stage is important, represents a logic and a functional step in achieving the research and correlates with the other stages within the context/ complex assembly of the research.

These stages are:

- The demarcation of searched problem;
- The design of the activity of research;
- The organization and displaying of educational research;
- Analysis, processing and interpreting the data;
- The development of final conclusions;
- The valorisation of research results.

Every stage has sub-stages or specific functions which contribute to the progress of the research. Their highlighting takes place within Gantt Diagram of the research project, and within scheme of sequences of activities. Gantt Diagram of the research project has as main objective to establish the necessary period to conducting the investigative project and to determine the order of activities. As steps, there are followed: the identification of logic activities and of significant moments; the encryption of the activity; building a diagram for the investigative project; the approximation of time required for each activity; updating Gantt diagram, as the project has advanced.

Sequences of activities are related to the content elements of the investigative project: the purpose and the objectives of the research; variables, research hypotheses, methods of research (mixed: quantitative and qualitative), gathering data, results of the research, data interpretation (statistics methods, SPSS), drawing conclusions, the identification of the possibility to multiply and transfer them.

The activity sequences of a research where are used quantitative and qualitative methods:

A – Theoretical substantiating

B – Establishing the categories and samples that are to be questioned, selection of the research methods and procedures

C – Survey based on questionnaires

D – Group focus

D – The analysis of curriculum documents

E – The revision of the research project

F – The elaboration ”, (Labăr, 2008, p. 89).

The quality of a research is obtained by finding the answers to the next interrogations: „Is the researched problem significant? Is the approach original? Are the investigation tools enough reliant (true) and solid? Is measuring strongly connected to the variables targeted in the research? Are fully and unambiguously tested in the investigation, the enounced hypothesis? Is the surveyed population representative for people who are used as generalization base? Does research meet ethical standards? Is the research sufficiently advanced to justify results? (Lazăr, 2015, p. 67, Anghel, 2017).

Being original in scientific research of social life (after E.M. Phillips and D. Pugh (1984), quoted by G. Văideanu (1988, p. 299) means: „, to conduct empirical research (on the ground, practical) on issues has have never been addressed yet; to give a new interpretation to old ideas a; to bring new evidence to already known problems; to elaborate new synthesis; to use the knowledge gained for studying socio-cultural realities in other countries; to practice methods and techniques of research in different socio-cultural; to perform interdisciplinary research; to look different from a different theoretical perspective, socio-cultural realities; to present the acquired knowledge in a manner that has never been tested before”.

Among the conditions necessary to ensure the originality of an educational research, there can be listed: theme novelty, novelty of the techniques, procedures and instruments of investigation used, the originality of the conclusions, the stringency of the methods, techniques and procedures of gathering and processing data, the demonstration coherence, the validity of the conclusions, theoretical and practical significance of the results in time and space.

There would be one more thing: finding the most adequate way “to wrap” the content: the success of the final closure may compensate many shortcomings; there are even „specialists in art of closing and writing, who succeed to seduce in as much, that very few manage to see that inside there is, in fact, nothing (this is not, however, an ideal to follow)”, (Țopa, 1996/1998, p. 285).

A “big” problem is plagiarism. To avoid unintentional plagiarism we should: „to put between quotation marks any text that belongs to others; to mention the name, title of the work, place of publishing, the publishing house, year, page; to pay attention to the distinction between common knowledge and information from the field of intellectual property rights; to reproduce in our own words the main ideas of a text, mentioning correctly the author and work that inspired us; to learn to take „intelligent notes”, not by copying phrases and sentences from teachers’; to get used to work with reading cards.” (Chelcea, 2003, p. 40).

### Conclusion

It is useful that aspects to be known, for they confer quality and representative power to any educational research, and are connected not only with the result/ product, but also with ethical problems.

### References

- Anghel, G. A. (2017). *Elemente de metodologie a cercetării în educație. București*: Editura Didactică și Pedagogică
- Chelcea, S. (2007). *Sociological Research Methodology. Quantitative and Qualitative Methods*. Bucharest: University Publishing House.
- Labăr, A.V. (2008). *SPSS for Educational Science: data analysis methodology in pedagogical research*. Iași: Polirom Publishing House.
- Lazăr. E. (2015). *The Qualitative-Appreciative Assessment. A Practical Approach to Religious Education*. Bucharest: University Publishing House.
- Țopa, L. (1998). *Creativity*. Bucharest: Scientific and Encyclopedic Publishing House
- Văideanu, G. (1988). *Education at the Border of the Millennium*. Bucharest: Political Publishing House.