ETHICAL ASPECTS IN PROVIDING A QUALITATIVE RESEARCH IN SCIENCE EDUCATION

Emil LAZĂR[1] Monica MĂRGĂRIT BĂRĂITARU[2]

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.

Key words**:** *Educational Research, Quality of educational research, Plagiarism.*

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

[1] Senior Lecturer PhD, Teacher Training Department, University of Craiova, Romania, e-mail address: lazaremile@gmail.com, corresponding author.

[2] PhDc, Doctoral School of Education Sciences, University of Bucharest, Romania, e-mail address: baraitarumonica@gmail.com.

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.

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/ multiplicate the results in other educational contexts;

It is of interest whether a specific research topic is a cause or an effect of the central theme.

By analogy with the graphical representation of the tree, we can ask ourselves whether a certain problem is one of its roots that leads us to the trunk, or is one of the branches that grows from the trunk?

„The problem tree" is a useful instrument to the activity of **identifying and documenting a central theme, but also to that of defining the purpose, the objectives and the results** expected of the research. This method is based on the idea that **any research theme is caused by the existence and the action of multiple factors and that, in its turn, it represents a cause** for other connected research themes.

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 valorization 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.

The main objective of Gantt chart is establishing the necessary time for carrying out a project and determining the order in which tasks should take place. During a project, Gantt diagrams are useful in monitoring the progress.

As main objectives, here are:

- Clearly illustrates the stage of a project,
- It can often be adjusted, to illustrate the actual stage of the tasks,
- It helps solving temporal interdependency between tasks.

To realize a Gantt diagram, you have to follow these **steps:**

1. Make **a list with all the activities of included in plan**. Show, at each task, when it can start the earliest, the predicted duration and whether is parallel or is after another.

2. Write down on a piece of paper **the days or weeks till the end** of the plan.

3. **Introducing the targets**. Make a basic list of Gantt diagram. Insert each task, showing which is the first date when it can begin.

4. **The distribution of activities**.

Take the Gantt synopsis/draft and use it to plan the activities. Distribute them so that the sequential ones to take place in the required order. Make sure that the activities that depend on others, do not start until the others are over.

5. **Presenting the analysis.** Drawing the last version of Gantt chart: the synopsis analysis, distributing activities and analyzing the resources.

6. When you create a Gantt diagram, limit yourself to a reasonable number of tasks (no more than 15 or 20), so that the diagram may fit in one page.

As steps, there are:

- 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).

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)" (Ţopa, 1996/1998, p. 285).

A "big" problem is plagiarism. Is considered „a trend of the academic environment". 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).

Ethical aspects of a research strongly correlates with the purpose and objectives of achieving it.

The objectives reflect and detail the purpose of the research. Usually, when general objectives are drawn, is used the expression: „the research project contributes to..."

Objectives must be achieved through the implementation of the research project, that's why they must be defined in terms of sustainable benefits.

Usually, when specific objectives are drawn, there are used the next expressions: „increase/ improvement/ development...".

Between the purpose and the objectives of the research there is a close interdependency and a set of mutual relations. A goal has several objectives, and the achievement of the goal depends on the achievement of the objectives.

The operation of gradual transition from the purpose to objectives is called *derivation*, and the progressive transition from the objectives to purpose is called *integration* (Figure no. 1):

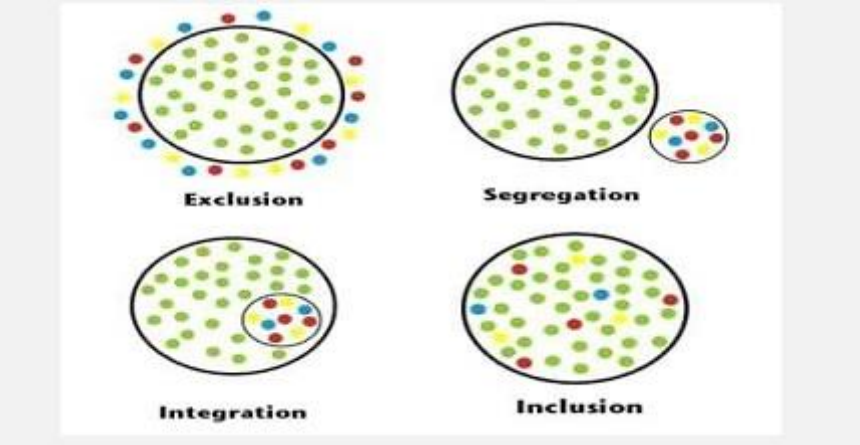

Figure no. 1. Integration and deduction

There are indicators to verify the objectives. Their expression must be done in SMARTER terms:

(S) Specific: provide information about the specific characteristics of a certain objective,

(M) Measurable: they show qualitative and quantitative aspects of an objective, that can be measured by known measurement units,

(A) Accessible: possible to find**,**

(R) Relevant: they are significant for the measured objective,

(**T) Within a time frame:** they refer to a certain period,

(E) Evaluable

(R) Reassessed

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

1. Chelcea, S. (2003). *Sociological Research Methodology. Quantitative and Qualitative Methods*. Bucharest: University Publishing House.
2. Labăr, A.V. (2008). *SPSS for Educational Science: data analysis methodology in pedagogical research.* Iași: Polirom Publishing House.
3. Lazăr. E. (2015). *The Qualitative-Appreciative Assessment. A Practical Approach to Religious Education*. Bucharest: University Publishing House.
4. Țopa, L. (1998). *Creativity*. Bucharest: Scientific and Encyclopaedic Publishing House
5. Văideanu, G. (1988). *Education at the Border of the Millennium*. Bucharest: Political Publishing House.