

# THEORETICAL APPROACHES. REVISITED AND NEW PERSPECTIVES / APPROCHES THÉORIQUES – RÉÉVALUATIONS ET OUVERTURES

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## ETHICAL FUNDAMENTALS IN SCIENTIFIC RESEARCH

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### **Abstract**

*Conducted in a complex context, the pedagogical research has the moral purpose of improving the quality of education, by capturing certain relationships between the existing variables. Professional ethics in educational research can be understood as a set of values, principles, rights and obligations of the researchers involved in this professional field. The development of ethical and conduct codes of research in the field of education is a necessity on condition that the world of science values academic integrity.*

*The present study is premised by the question "What are the reference points we must ethically refer to in scientific research?". Analyzing research from an ethical point of view, we designed a technological model in order to systematize the knowledge related to the existing codes of conduct and to guide the actions characteristic to educational research, thus identifying the fundamental ethical principles.*

**Keywords:** *Research, Ethics, Deontology, Education.*

### **1. Introduction**

If *academic ethics* refers to the moral values that are recognized and respected by the academic community, *academic integrity* implies respecting the ethical and professional principles, the standards and practices of individuals or institutions in the field of education and research. *Academic integrity* means being honest and fair about every scientific activity, all through the specific endeavor (from the formulation of the aims and the outline of the mission, to evaluations, conclusions and proposals). It includes conducting the research in an ethical manner and refraining from manufacturing and manipulating data. The growth of software products and services designed to ensure respect for the academic integrity has been significant lately.

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From an etymological point of view, the word "integrity" comes from Latin, where it is found in the form of "integritas", meaning "whole, complete". Thus, "integrity" defines the integral character of an individual, the feeling of dignity, justice and conscientiousness, expressing the quality of being or remaining intact, of keeping their qualities unchanged. It is important to understand and value academic integrity as an expression of our beliefs about what is good and right.

*Research ethics* is a set of criteria and norms that guide the research activity and its full exploitation, i.e., the ways of ensuring the human interactions involved in the research. It is a specialized discipline based on the study of ethical values and norms that serve the purposes and objectives of the research. Ethics in research is especially interested in analyzing the ethical issues that are raised when people are involved as participants in it.

It is necessary that the academic policies and practices of the community should send a clear message that data forgery, falsehood, fraud, theft and other dishonest behaviours are unacceptable. University studies and research promote the ability to work independently and in collaboration with others. As the results of evaluation must truly reflect personal learning and performance, it is important to be aware of the limitations of collaboration in certain situations. In our opinion, the values underlying the research objectives can have ethical implications on how people should be treated. Researchers operate under the auspices of several roles that may affect their judgments about what is and what is not ethical. Therefore, the provision of a quality assurance framework for the service of ethics in the field of research is highly required.

Cultures differ in the priority they attach to certain ethical principles and issues (e.g., the importance attached to individual autonomy in relation to loyalty to the group, the perception of power and authority, the ability to deal with uncertain situations). However, at the international level, there are a number of common requirements and measures, standards and principles for the ethical foundation of research, that are valid regardless of the field of knowledge and the topic or type of research.

## **2. Literature review**

### **2.1. Scientific research today**

The word "science" derives from the Latin word "scientia", which means "knowledge". Thus, *science* is a systematic ensemble of knowledge about nature, society and thinking. Most scientists consider that scientific inquiry is that which corresponds to the scientific method, so necessary in the progress of human knowledge. Scientific method allows researchers to independently and impartially test the pre-existing theories and previous findings and to submit them to debates, changes or improvements. Viewed retrospectively, sciences evolved from a pre-scientific, proto-scientific (pre-consensual) phase, characterized by divergent thinking, towards a stable consensus. The world of science always curves upon itself, creating new fields of thought, nurturing knowledge and offering research new problems, themes, topics to investigate. The purpose of science is to create scientific

knowledge, and the purpose of scientific research is to discover laws and theories that can explain natural or social phenomena, or, in other words, to create scientific knowledge.

The attribute *scientific* characterizes that form of knowledge that satisfies a series of methodological, general and particular requirements and criteria. Developed and put into operation by cybernetics and general systems theory, the new paradigm of scientific knowledge is far from being a cumulative process, achieved by expanding the old paradigm. Among the features of the scientific spirit there are: respect for the truth, intellectual curiosity, intellectual independence, the belief that there are stable principles of existence, critical thinking, problem solving skills (Rădulescu, 2011, pp. 26-33 – our translation).

*Research* is a rational approach that seeks to discover the answer to the fundamental questions that man poses in relation to the surrounding world. It is carried out in the laboratory, in the archives, on site or in the University, underlying sustained effort, individually or collectively. It can be completed by significant innovations or it can make modest contributions. But it always refers to certain ethical values and principles. The basic element of research is the search for knowledge, that is, the collection of data, information and facts, if necessary, their challenge, decanting and evaluation, in order to increase of knowledge. Research and scientific knowledge involve various options, debates and controversies. There are several types of explanations and strategies regarding the origin of scientific knowledge. Thus, we can access the following types of research strategies (Agabrian, 2004): inductive, deductive, retroductive, abductive and transductive.

The *research functions* include:

a) The descriptive-explanatory function (it determines their causes and effects, expresses the effort to find "statistical representativeness", i.e, a sufficiently large number of cases belonging to the same type that gives credibility to conclusions, it presupposes the call for an initial theory in the interpretation of data, it establishes relationships, priorities, hierarchies, etc.);

b) The praxiological function (it allows for the formulation of some improvement hypotheses in different contexts and concrete situations in order to efficiently intervene, to implement innovations);

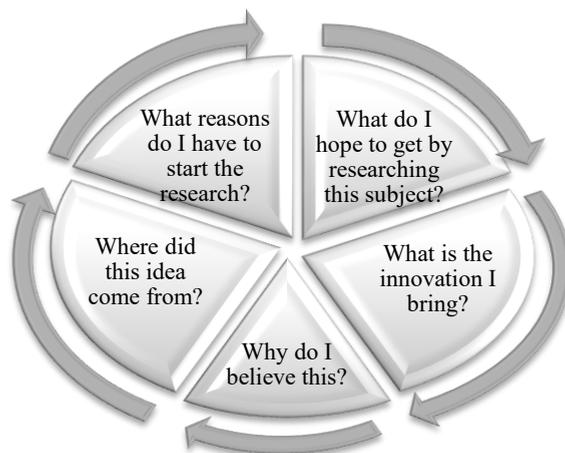
c) The predictive function (it proposes models, solutions for carrying out a process, event, perspective act, it offers confrontation possibilities, it exercises control over the future evolution).

Because the results of the research are fed into the teaching process, and the information and experience gained in the teaching process can often lead to a contribution at the research level, it is difficult to say where the education and training activities end and where the research activities start (OECD, 2002, p. 36). Researchers are specialists who work in the design or creation of new knowledge, products, processes, methods and systems and in the management of the related projects. From an organizational perspective, "the role of the researcher is that of initiating the process of change in groups and organizations" (Chelcea, 2007, p. 203).

On the other hand, we can all benefit from sharing our ideas with other researchers from a wide range of backgrounds and from all over the world. Interacting with others, sharing experiences and building common networks is a central means of learning and research (even beyond the topic itself). Those who work on their own need a certain self-awareness, a way to keep an internal monitor on their approach. In general, it is suggested that "the only constraint under which the scientist would be found, would be the one exercised by data of the controllable intersubjective experience and, possibly, by accepted theories. Kuhn argues, on the contrary, that the critical exercise in mature science will be drastically limited by the very nature of vocational education" (Flonta, 2008, p. 26 – our translation).

More recently, there has been a growing interest in ensuring ethics in research and a number of operational specifications are being made. For example, the recommendations offered by the *APA Scientific Directorate* to help researchers avoid ethical issues are the following (Smith, 2003): honestly discussing intellectual property, raising awareness of multiple roles, observing informal consent and confidentiality rules, using ethical resources.

Inquisitiveness is specific to humans in general. If, in terms of character, it is necessary to answer questions such as *Am I honest in presenting the results of the research? Do I trust the partners I collaborate with during the research?*, from the level of training point of view (that partially reaches the motivational sphere), the answer to the following questions helps us initiate, as well as to continue and complete the research.



**Figure no. 1. Questions needed in the investigative process**

One of the topics of interest of the regional debate in Timișoara (2016) was ethics, impartiality and scientific rigor, which addressed the need to develop a culture of ethics and institutional ownership, institutional responsibility regarding academic/scientific ethics, as well as the implementation of preventive measures. The preventive measures promoted within it are (The Presidential Administration, The Department of Education and Research, 2016, p. 18 – our translation):

- The introduction of a separate chapter in the Law of Education with explicit provisions for observing scientific rigor, with sanctions and concrete measures (e.g., peer review, anti-plagiarism systems, etc.);
- The elimination of incompatibilities and inconsistencies in the doctoral legislation;
- The alignment of the codes of good practice and research ethics to the international ones;
- The establishment of an independent commission to analyze the conflict of interest of any kind;
- The building of a centralized database for PhD / Master's / Bachelor's degree/articles in the Romanian language;
- The improvement of the software dedicated to identify cases of plagiarism, the obligation to introduce sanctions for all cases of non-compliance with good conduct in research.

From a managerial perspective and in accordance with the ethical principles, moral values and norms, academic institutions should focus on the following directions of action (Fishman, 2014, pp. 30-31):

- To develop and publish clear, accurate academic information, integrity policies, procedures and statements that can be consistently understood and implemented;
- To promote the positive aspects of academic integrity;
- To inform all community members about the standards of academic integrity so that expectations are understood as part of the community culture;
- To practice actions described in the campus policies consistently and correctly;
- To develop, explain and administer transparent systems for judging integrity violations;
- To keep up to date of current developments in technology and educational practices in order to anticipate the increased risks and to address potential problems;
- To periodically evaluate the academic effectiveness, integrity policies, procedures and practices, revise and revitalize them, if necessary.

The proactive approach to reducing academic deviations should be a team effort at the level of academic institutions. Some institutions require students to sign a contract of integrity at the beginning of each academic semester. Other institutions require students who repeat unwanted behaviour (or engage in what is considered a flagrant violation) to participate in an integrity course. This course may or may not be mentioned, at the end of the academic preparation, in the student's transcript of records. Each institution must find its own direction and develop standards that best suit its own mission and goals.

There are a number of reasons for which scientific fraud occurs: career pressure (generated by the obligation to publish periodically a certain number of studies, as results of the research conducted), the competitive environment (the fear that another colleague or group working in the field may publish faster); convenience

(despite the fact that the imagined experiment generates data that are inconsistent with reality, it calls for improvisation), the ease of data manufacture (some experiments may be non-reproducible for objective reasons, and expect for the falsified data to be unobserved).

Permanent reporting on the specific principles of research ethics leads to the avoidance of mistakes, errors and deviations in the academic sphere. The fundamental ethical principles that ensure the moral balance are the following (Jupp, 2010, pp. 192-193):

1) The principle of the relationship between the researcher and the subjects of the research - the research should not harm the respondents, but the long-term consequences of participating in the research are not always easy to calculate;

2) The principle of the informed consent - it respects the rights of people to know that they are being studied and to know the purposes of the research and what is expected of them (it suggests that implicit research is not acceptable, as neither is hiding the real goals of the researcher or any other form of misleading);

3) The principle of respect for the right to privacy – there are problems related to intrusive questions and, in particular, questions about sensitive issues, such as sexual conduct or illegal activities (or certain legal aspects, from the perspective of data protection legislation);

4) The principle of confidentiality –it refers to ensuring that the collected information will be used exclusively for research purposes.

Ethics committees represent an institutional response to one or more problem cases. They can change the practice by applying appropriate policies and individual consultation, and indirectly, by educating and stimulating awareness of ethical rules throughout the system. Ethical procedures must be known and understood by all social actors, and accredited higher education institutions, research institutes, units and structures must contribute to ensuring and guaranteeing the ethics of research.

## **2.2. Ethics and deontology in educational research**

*Ethics* (Gr. *Ēthos* - *custom, habit, moral*) is the science that deals with the theoretical study of human values and condition from the perspective of moral principles and their role in social life. Ethics examines desirable human behaviours, following a model crystallized over time through the games of social actors. If ethics is seen as a philosophical discipline that studies morality, a "science" of moral laws and principles, *morality* (as an object of ethics) designates the application of these laws and principles in particular acts of life. Morality has predominantly cognitive and normative functions, and morality makes it possible to adapt, based on values, representing a synthesis between knowledge and sensitivity.

Morality is a quality of consciousness, which we acquire, and moral laws are expressed in the form of imperatives because they always encounter human opposition. The functions of ethics include:

a) The cognitive function: the descriptive phase (the values, the moral facts are highlighted as discovered or discoverable realities), the analytical-synthetic phase (these realities are translated scientifically), the explanatory phase

(corresponding to ethical doctrines) and the phase during which the unity between common and scientific knowledge is achieved;

b) The normative (axiological) function: the role of ethics is that of conceptualization, systematization, communication and rationalization (it discovers norms as consequences of the axiological universe);

c) The persuasive function: persuasion is present in the moral sphere;

d) The projective function: it indicates the desired degree of morality, orienting and offering a certain direction.

The knowledge of the main *ethical theories* represents the foundation on which an ethical code is built, necessary in shaping deontology in the field of educational research.

*The ethics of virtues* appears as a theory-leader in contemporary moral philosophy and it is based on the idea that virtuous people are happier and have better social relationships with the others. Plato believes that the ultimate purpose of education is wisdom, because this is the supreme virtue, through which happiness is acquired. Out of wisdom derive the other virtues (justice, gratitude, courage) that contribute to human happiness. The Greek philosopher pleads for the education of the individual (from the earliest age) in order to acquire the virtues of the citizens, which supposes to be morally good, to obey the commandments of the reason or the law of the State. To them a series of unwritten laws are added, of equally great importance: "My opinion is that, in order to live properly, it is not appropriate to be after pleasure and try to avoid pain at all costs, but to follow a certain middle path (...) "(Platon, 1995, p. 204, our translation). Inviting to concerns with the soul, he knew that inner happiness makes the soul stronger.

Aristotle takes a step forward in relation to Plato's theory and emphasizes the role of moral exercise: "(...) we acquire virtues after having completed an activity, as it happens with arts. For example, by building houses you become an architect and by playing the guitar, you become a guitarist. Likewise, by practicing justice, you become righteous (...)" (Aristotel, 1988, p. 32, our translation). "The Nicomachean ethics" includes: *Eudaimonism* (happiness or flowering), *Arete* (excellence or virtue) and *Phronesis* (practical or moral wisdom). Aristotle recommends that virtues should be accepted not only for the life of the individual, but also for the life of the fortress-state. He argued that virtues are acquired through regular practice, and the excellence of character and intelligence are assumed mutually. With Aristotle, the main purpose of practical wisdom is to cultivate morality or virtue, which allows us to live together. He calls wisdom in action or practice "phronesis" (moral sense). This means the ability to apply ethical reasoning to current situations in order to make wise judgments and do what is right.

*Deontological ethics* is represented by Kant. Deontology could be described as a system of duties/ rules based on ethical theory. Kant starts from the concept of duty, and the main formulation of Kantian ethics is the categorical imperative. Moral duties are embodied in the so-called categorical imperative (it can be universalized for all rational beings). The moral value of an action is not measured by its consequences (after being successful), but by the intention that animates it and the

principle that guides it. Analyzing the ideal of the sovereign good as a principle that determines the ultimate purpose of pure reason, Kant launches three questions: *What can I know? What should I do? and What am I allowed to hope?* If the first question is purely speculative, the second is purely practical, it belongs to pure reason and it is moral. The third question is both practical and theoretical, therefore, the practical leads only as a guide to solving the theoretical problem and, when it arises, the speculative problem (Kant, [1781], 1994, pp. 573-574, our translation).

Focusing on the Kantian moral system, Călin states that it embeds several components (Călin, 2001, pp. 43-45):

1) The moral content of human behavior: self-respect and respect for the others (these are presented in the form of two kinds of duties, respectively moral actions: duty to oneself and duty to another);

2) Man as a moral subject in relation to the antinomy of the freedom of his actions ("You must, because you can!") and the good or autonomous will;

3) The moral law that is just as important as the sky above it (the phenomenon of consciousness that occurs in the moral subject, the greatness of the intellect that commands our soul universe).

*Utilitarian ethics* is a variant of theological ethics. Contrary to Kant's moral rigour, utilitarianism (represented by Bentham and J. S. Mill) is a moral doctrine underlying the belief that the useful or what can bring us maximum happiness must be the supreme principle of our activity. Being empirically tested, utilitarianism reflects the cause-and-effect reasoning, as in science (but it must be kept in mind that good intentions do not always lead to good results).

*Postmodern ethics* is an applied ethics (eg bioethics - the study of ethical controversies brought about by advances in biology and medicine; geoethics - the combination of earth sciences and ethics; business ethics; pedagogical ethics; research ethics). Looking at the two aspects of ethics (philosophical and scientific) in their interaction, we can situate ethics in a cultural horizon in which the functions that it performs allow and favour the education of character. Applied ethics is made up of an array of disciplines that try to philosophically analyze cases, situations, dilemmas that are relevant to the real world. These disciplines include information technology ethics, animal protection ethics, business ethics, medical ethics, environmental ethics, public policy ethics, media ethics, scientific research ethics.

*Codes of ethics* are based on the mission, principles and values of an organization. They have the role of directing the individual and group human behaviours, regulating the behaviour of the employees so that they comply with the moral standards of the organization. The general code of ethics in scientific research regulates good conduct in the field of development and innovation in the units and institutions that are part of the research-development system, among which are the Universities. The ethical code covers a number of responsibilities: responsibilities towards the research participants; responsibilities towards employers, funders, sponsors; responsibilities towards colleagues. It takes into account international regulations and standards on ethics in scientific research and teaching activity, including *The European Charter for Researchers The Code of Conduct for the*

*Recruitment of Researchers (2005), the Charter of Fundamental Rights of the European Union (2012), Regulation regarding the organization and functioning of the National Council for Scientific Research (CNCS) (2017).*

More detailed and specific than the codes of ethics, *the codes of conduct* explain very clearly how the members of an organization should behave. They contain the procedures to be followed and the sanctions that will be applied for violating their provisions.

A product of the 20<sup>th</sup> century, deontic logic is the logic of normative propositions or rules. *Deontology* (gr. "Deontos" – *necessity, need, what is right, obligation* and "logos" – *science, study, speech*) is a scientific discipline that studies the rules of professional conduct, ethical obligations and general duties to be fulfilled, specific rights, as well as the personality traits necessary to practice a profession. Deontic logic, from the point of view of von Wright, refers to the field of human actions, acts of conduct and behaviour. Specific to it are the concepts of "obligatory", "allowed", "indifferent", "forbidden", to which others like "tolerated" and "strictly controlled" can be added (Surdu, 2003, p. 120, our translation).

In relation to axiology, deontology supports the legitimization of practices through value-based decision-making. *Deontological codes* regulate all forms of professional activity, through norms that provide precise guidelines of behaviour in different situations. In the sphere of research, deontological obligations include: treating with respect the subjects included in the research sample; citing any text / fragment taken from other authors; making available to the evaluators the documents that prove the research results; observing the succession of the research stages.

### **3. Developing a technological model for the ethical foundation of educational research**

In our approach we started from the question "What are the guidelines to which we must ethically refer in scientific research?". Based on the mainstream literature in the field, we set out to identify the fundamental *ethical principles* that direct the activity of the actors involved in a pedagogical research approach: the principle of quality assurance, the principle of intellectual property, the principle of confidentiality, the principle of anonymity, the principle of consent and privacy, the principle of volunteer participation, the principle of responsible participation, the principle of the researchers' independence, the principle of the researchers' impartiality, the principle of collaborative research.

Based on these, *the directions of action* can be outlined, depending on how they answer to the questions that arise in the phases of design, implementation and evaluation of educational research: the implementation of good practices at the level of educational research, motivation and raising the aspirational level through valuable knowledge and enthusiasm, capitalizing and promoting diversity, stimulating creativity for innovation, updating and developing knowledge in the researcher's vocational area, promoting positive behaviour in relation to others, integrating technology to research.

*The ethical foundation of research at the level of each element***Issues/ Themes (topics)**

- Does the content sample cover the researched topic?
- How does the topic influence the choice of the research type?
- What has been researched and published on the chosen topic?
- Does it have practical utility?

**Participants**

- What happens to informal consent if participants' observation is done in secret?
- What risks might the research present for them?
- Can they leave the research sample?
- How does the publication of research results affect them?

**Researchers**

- What risks do they face during the investigation?
- Do they choose their research topic according to professional concerns and interests?
- How fair is the call to a professional position in order to have access to information or people to whom we otherwise would not have access?
- To what extent does it respect the confidentiality initially promised to participants?

**Funders**

- Does it respect the ethical principles in the field of research funding?
- What are the criteria according to which funding is carried out?
- Do they know the long-term benefits and damage?

**Beneficiaries**

- Who are the beneficiaries?
- Are there conflicts of interest (e.g. financial reward?)
- Does it condition the research conduct in any way?
- What facilities or restrictions are connected to them?

**Employers**

- What are the specific requirements regarding ethical approval?
- Are they public or private institutions?
- Are they individuals or institutions?

**Research methods**

- How closely do they meet the research objectives?
- What are their advantages and limitations?
- Do they respect the ability and willingness of the respondents to participate?
- Do they meet the criteria of ethical conduct?

**Space and time resources**

- What are the criteria against which the natural or laboratory conditions are chosen?
- How do they intervene on space?
- What is the correspondence between the time available and the one that the participants are willing to allocate?
- How long are the subjects willing to participate in the research?

**Information resources**

- How do we make sure that we treat the other researchers' activity with accuracy and fairness?
- What does it mean to include research documentation?
- How do we select the sources of documentation (primary or secondary?)
- How do we protect our data (in physical or electronic format?)

**Figure no. 2. The technological model of ethical foundation of research**

This model is based on the ethical principles of research and it generates clear directions to follow in order to observe the code of ethics and the deontological code.

#### 4. Conclusions

The research that involves human subjects raises unique and complex ethical, legal, social and political problems. The success of research depends, to a large extent, on the personality of the researcher. In addition to scientific, methodological and managerial knowledge, there are also other individual moral qualities that provide answers to questions such as: *what is good /bad, how should we behave?* The training for research should be mostly self-training, preferably led by someone with experience in the respective field of activity. In higher education institutions, research and teaching are always closely linked, as most teachers undertake teaching as well as research activities and the equipment serves both purposes.

In order for the society to support and believe in research, researchers must follow ethical standards. Most universities have an ethics committee. It examines all research proposals to ensure that they do not raise ethical issues. On the one hand, we emphasize the importance of protecting the rights of researchers, on the other hand, we consider the safety and well-being of research participants. The questions we asked in the proposed technological model are able to take into account all the research elements and to ethically substantiate scientific research.

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