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CONDITIONS OF EFFECTIVE INFLUENCE OF PEDAGOGICAL RESEARCH ON EDUCATION PRACTICES

Vladislav V. Serikov (a)*
*Corresponding author

(a) Dr. Sc. (Education), Professor, Corresponding Member of the Russian Academy of Education, Deputy Director of the Institute for Strategy of Education Development of the Russian Academy of Education, Moscow. E-mail: vladislav.cerikoff@yandex.ru*

Abstract

The article considers methodological aspects of interaction between pedagogical science and education practice, identifies the conditions and mechanisms of the influence of pedagogical science research on education practices. The problems of education whose solution depends crucially on science contribution are determined. They are, first, problems of the philosophy of education that identify the place of education in the development of the global world; second, problems of the content of education, i.e. what is to be taught today now that man has been confronted with phenomena for which there are no analogs in the past. This renders irrelevant traditional assimilation of past experience. Science is also needed to estimate the effectiveness of modern online forms of education in the public domain. The author demonstrates that pedagogical knowledge possesses some specific features. It is marked by dependence on the goals pursued by the researcher, variant interpretations of the same ideas, impossibility of replicating facts and establishing laws recognized by all. For these reasons the findings of pedagogical studies may lead to different results when applied by different teachers. The article shows that the impact of pedagogical research on pedagogical practices is not always positive for two reasons. The first is the shortcomings of the actual research which the author identifies. The second is differences in the way scientists and practical teachers interpret the same concepts. The author concludes the investigation by suggesting ways of bringing closer together the science of education and education practice.

Keywords: Specificity of pedagogical knowledge, education practice.

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1. Introduction

Education practice today needs science, like all other practices. In education, science is a source of innovations, forecasts and development strategy. Scientific knowledge is necessary for training specialists in the sphere of education. The practice of education, in turn, is the main source of the problems tackled by science. Yet it would be wrong to say that science is a servant of practice. Most modern scientific research is investigative, exploratory and anticipatory with regard to practice.

The current problems of modern education can be roughly divided into several groups: the philosophy of education and trends of its development; the content of education; psychological-pedagogical conditions and methods of teaching; assessment of the quality of education and control of its development; specificities of the teachers' activity and training of specialists for the education sphere; conditions for effective influence of science on education practices (Bermus, 2008).

The philosophical problems of education include: the changing role of education in the activities of man and society; continuous and universal character of education; the emergence of education as the decisive factor of individual success in the labor market, progress, the object of competition among states and companies, conditions of change of the methods of acquiring education (digital, distance, networking); education as the main means of producing human capital and a factor of economic and cultural development; effectiveness of the reforms, innovations and financial instruments of controlling education; growing openness and informality of education (Lukackij, 2017).

2. Problem Statement

As regards the content of education, a number of problems stand out. The first problem is that modern education is primarily directed toward the past, i.e. serves to "transmit experience" whereas the problems modern man faces have no analogues in the past. What is needed is education that prepares a young person for life in a changing world in conditions of uncertainty, unpredictability and surfeit of information ("about everything"), the need to make decisions with due account of all the consequences, including global ones. The game-changing features also include: increased competition in the market of occupations; continuous nature of education as the key instrument of changing a person's social status; mobility, implying change of professions and environments – socio-cultural, professional, geographic and linguistic. Professional activity is also changing with the emergence of network virtual manpower. Traditional training for a profession is becoming meaningless. It makes more sense to prepare a person from the start for change of professions (Davydova, Dorozhkin, & Fedorov, 2016; Klarin, 2016).

3. Research Questions

What should be added to education to prepare a person for all these changes? What should be the priority of the science of education? The new objects of study include:

- integration processes in education, i.e. erasure of boundaries between study disciplines, stages of education and areas of professional training;

- possibility of including training activities into other types such as play, research, project activities to make learning more attractive;

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- raising the position of students as the subjects of their own education;

- attention to "non-cognitive" types of student experience – creative, activity-based, personal experience;

- interactive and dialogic teaching as humanitarian technologies that develop personality;

- use of information technologies in education – digital resources, network educational communities, communications, automation of routine operations, expansion of data bases, etc. (Nikitin, 2018);

- activity-based approach to the form of project and imitation-modeling methods of teaching;

- "open education" with no predetermined content, involving real extraction of knowledge (Elkina, 2016);

- learning on the basis of communications, with the use of group and teamwork formats;

- differentiation of students according to ability, achievements, career plans and not only academic performance;

- network forms of projection and implementation of the study process.

4. Purpose of the Study

The huge spread of education ideas and projects prompts teachers, parents and managers to turn to the pedagogical science. Is science ready to answer many of the questions? When it turns out that pedagogical science is unable to provide a definite and impeccable answer to many questions it is naturally accused of being non-scientific. Is that a fair charge? What are the possibilities of pedagogical science, its specific role in addressing pedagogical problems (Serikov, 2018; Kolesnikova, 2014)? In short, how can pedagogical science really help the practical teacher?

5. Research Methods

Methodological analysis of pedagogical research, semantic analysis of pedagogical concepts.

It would be useful to once again clarify the specificities of pedagogical knowledge. First of all, what is it knowledge of? Pedagogical goals and means of achieving them. The goals are very numerous, each pedagogical situation having its own goal. Besides, these goals differ for different students. They should be brought to different kinds of achievements and, what is more, by different routes. Therefore pedagogical knowledge is not a set of algorithms and instructions. Rather, it is a set of benchmarks, an "orientation base" for the search of solutions that will never be exhaustive and final. He who is solving a pedagogical task must formulate it clearly and understand some basic principles of pedagogical thinking (Serikov, 2018).

The subject of this study is the structure of pedagogical images and concepts contained in scientific texts on education.

Pedagogical knowledge is marked by a high degree of generalization which makes it similar to philosophical knowledge in that respect. Pedagogical regularities, principles and rules provide a general description of a pedagogical event. Their proper use implies taking into account the context, the specificity of the situation, the use of additional experience, elaboration of implications, micro-research

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and the author's vision. For example, knowing that education yields the best results in a cohesive and friendly collective of children we face a host of tasks for which there is no ready solution: how to unite such a collective, how to ensure that the collective accepts a particular child?

There are some other specific features of pedagogical knowledge that need to be mentioned. In pedagogy there is no universally recognized final knowledge accepted by all subjects. The same phenomena lend themselves to a multitude of interpretations, so various means can be used to achieve the same goals and, accordingly, the utility one and the same method for various goals is justified (Bolshakova, 2018).

Pedagogy differs from other sciences in that pedagogical facts (events) cannot be reproduced, which prevents a final definition of the conditions in which they arise, i.e. a formulation of the laws and regularities in the universally accepted meaning of these concepts. To pass on from theoretical knowledge to practical actions the teacher must create an image of the action. To this end he supplements the theoretical instructions with his/her subjective experience. Thus, what is implemented is not an objectively given project (a scientifically validated instruction) but the teacher's own project. An attempt to scrupulously comply with the instructions, paradoxical though it may seem, carries the risk that the action would be ineffective.

Pedagogy does not have "deduced knowledge", i.e. one cannot make a particular pedagogic decision by logically deducing it from general provisions. The above suggests that pedagogical knowledge has all the features of humanities.

- prevalence of senses over universal meanings of concepts (Kolesnikova, 2014);
- dependence of the content of knowledge on the goals and attitudes of the subject using it;
- impossibility of conveying this knowledge to another subject without interpretation and without taking into account the context of the situation in which this knowledge will be applied;
- lack of facts that are understood and reproduced in identical ways.

This conclusion warns us against attempts to obtain through pedagogical research a kind of knowledge possessing exactly the same qualities as traditional knowledge existing in the framework of the classical paradigm (Shustova & Demakova, 2017).

However, while not being "classical," pedagogical knowledge is not a hundred percent humanitarian. The science of education contains quite a number of research challenges that can well be tackled by traditional empirical methods, measurements and even mathematical modeling.

On the strength of the above we can attempt to mark the boundaries of the possibilities of pedagogical research: pedagogical research can reveal only the necessary conditions for achieving a pedagogical goal. As for sufficient conditions, it is left to the practical teacher to find them in every specific case (Serikov, 2018).

A survey of 20 members of the Russian Academy of Education and 15 members of the Higher Attestation Commission's Expert Council warrants the following generalization. First, the experts have complained that the results of pedagogical research have little impact on the practice of education because the practical teachers mistrust the propositions put forward by those who defend dissertations. Second, there are flaws in dissertation research. Let us range the most frequently mentioned shortcomings in accordance with the frequency of their mention by experts.

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The following typical shortcomings of pedagogical dissertations can be noted:

1. lack of an objective expert examination of the results presented;

2. conclusions are not proved;

3. simulation of scientific research instead of actual conduct of research, as expressed in the lack of truly new results;

4. themes do not contain relevant problems;

5. lack of real critical analysis of facts;

6. lack of authentic correct experiments which are often replaced by mere "illustrative" examples;

7. the authors are not conversant with foreign experience;

8. behind a plethora of pseudo-scientific phrases it is impossible to see the new contribution the author purports to make to solving the problem;

9. instead of analyzing the novelty, i.e. comparing one's work with the results obtained by other authors, one finds a mere listing of what the author of the dissertation has done in recent years;

10. declaration of methodological slogans and "approaches" is not backed up by authentic research methods;

11. research procedures are described without formulating the new conclusions the research has led to;

12. commonly known technologies are presented as "innovative" without any justification;

13. the author's position, research style and "hand" are impossible to identify.

Numerous dissertations present systems for instilling certain individual traits, these systems are not interconnected and their isolated, "summary" implementation is practically impossible if only because it does not fit into the time schedule allowed for the teacher and the students.

The discussion of these results with experts prompts the conclusion that it is these shortcomings that impede effective use of the results of scientific research in practice (Ivanova, 2018).

What makes the results of a piece of scientific research useful or, to put it in another way, what are the attractive features of an innovative project?

Let us arrange the factors of the relevance of dissertations according to how frequently these factors were mentioned by experts:

1. assimilation of new content by methods accessible to the teacher;

2. relevant pedagogical goals;

3. new technologies (forms of organizing the study process that teachers and students are interested in);

4. overall enhancement of student interest;

5. accessibility of the methodology for teachers;

6. new content (tasks solved by students) and new methods of organizing teaching that diminish the load on the students;

7. original ways of assessment and self-assessment of achievements;

8. the spread of innovations is accompanied by skilfully organized teaching of teachers;

9. high public assessment of innovation.

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We then tried to identify the barriers that stand in the way of the results of research reaching the practical level 8.

Below are characteristics of scientific "products" that make them unfit for practical use:

-divorcement from practice ("closet theorizing");

-no account is taken of the modern situation in which a child and student develop;

-no statistics to prove the effectiveness of the innovation;

-"unreadable" texts;

-studies are based on imagined and not real problems;

-studies ignore the ideas which have already been proved to be workable;

-studies do not contain a high-profile hypothesis proved experimentally;

-studies do not draw on cutting-edge experience;

-studies do not take into account world experience concerning the problem, and the fact that teachers use the internet;

-low level of enthusiasm and creative potential of those who introduce the innovations;

-the traditions of scientific schools are forgotten.

It is worth noting that one of the reasons why practical teachers ignore the results of research is the unduly complicated obscure texts produced by some scientists. Such texts as a rule abound in ill-defined and vague terms, cumbersome convoluted phrases whose meaning is unclear to the teacher. Few examples and illustrative situations are cited. As a result, a teacher perusing these theoretical works does not find an answer to the questions that really worry him.

At the same time, it has to be noted that one of the reasons why practical teachers do not draw often enough on the achievements of pedagogical science is the low level of academic and methodological training of the teachers themselves. This is borne out by our own study of how the teachers understand the concepts and terms most frequently used in pedagogical science texts. The study has revealed that one of the frequently encountered barriers between science and practice is that scientists and practical teachers interpret scientific texts, concepts and terms in different ways. To use a metaphor, they "speak different languages" (Bolshakova, 2018).

For several years we have offered the teachers and school principals attending refresher classes an assignment which required them to define the most popular pedagogic concepts. Then these definitions were compared against the interpretations given by the scientists and experts working on the problem in question. The study has shown that the majority of concepts well known in pedagogy are interpreted by teachers in the layman's language.

Thus, the concept of "content of education" interpreted by modern pedagogy as the range of types of cultural experience specially selected and oriented towards achieving certain educational goals is identified by practical teachers with such didactic phenomena as "syllabus", "standard", "topic of a lesson."

The "goal" of a lesson or an event is interpreted by many teachers not as planned changes in the quality of knowledge, functional literacy or personality of the child, but as material, the topic of a class or an (often formal) declaration of intentions and requirements by the teacher (Juuti, Rattya, & Lehtonen, 2017).

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The concept of "method" and "form" of teaching widely used in pedagogical discourse are interpreted by practical teachers as being identical whereas in reality they refer to entirely different phenomena: method is the way of organizing the activities of students leading to assimilation of a certain type of education content. The form of education is the method of the interaction between the teacher and the learner (individual, group, classroom, etc.).

"Teaching activity" is often identified with "work in class," with "doing homework" whereas teaching activity, strictly speaking, is "activity of mastering some other activity." The motive of learning activity, according to the "classics" of developing education (Jerome Bruner, V.V. Davydov, L.V. Zankov and others), is the need to develop to fulfill one's potential. This interpretation of learning activity implies, among other things, that participating in a lesson or doing homework does not mean inclusion in learning activity if such participation boils down to physical presence and mechanical execution of boring tasks. In other words, one can spend 11 years sitting at a school desk and never become really "involved" in learning activities.

The widespread scientific concept of "activity approach" is treated by many teachers as the use of various types of activity by students during the lesson. The main thing is to have children do something with the material, handle it, and not simply listen and memorize. The scientific definition of the activity approach refers to the key methodological principle of pedagogical thought and action that combines explanation and projecting functions.

In interpreting the concept of "study subject" most teachers identify it with the science of that name or with a study program or texts and exercises from a textbook. The complex structure of a study subject as a didactic structure that comprises knowledge, methods of activity, creative and emotional-value experience connected with the given sphere, is not always understood. One has to explain to teachers that subjects differ in the way they combine these structural elements and that the key to learning the subject is not learning of a corresponding science (after all, the school does not turn out physicists of historians), but the development of aptitudes and cultural competences and the personality of the child (Ivanova, 2018).

Scientists and teachers often interpret the essence of some popular education practices in different ways. For example, the concepts of "project", "project method of teaching" are often used in school vocabulary as trendy terms referring to reports, computer presentations, didactic games, types of group work and what have you whereas scientists see the project method as a method of teaching that includes the student in the process of creating a product and consequently as an instrument of mastering a competence.

Let us note that the teacher's "personality approach" is confused with "individual approach," or rather, with taking into account the individual traits of children although it actually refers to a special education practice which communicates the experience of manifesting a personal attitude in various life situations and use of various technologies that develop personality, whereas taking into account the individual traits of students has to do with a different set of problems.

6. Findings

The list of divergences in the interpretation of pedagogical concepts contained in scientific texts and in the minds of teachers can be extended. However, the main thing is clear: the thinking of the teacher and the logic of scientific texts often differ substantially. The reason is not only that teachers are not familiar with many scientific theories, but also that the mechanism of the teacher's thinking is in some ways different from the traditional conceptual thinking (Serikov, 2017). The practical teacher thinks not in abstract definitions, but in concepts, images and rules derived from his own experience (Kaiser, Busse, Hoth, König, & Blömeke, 2015). Reading a scientific text he conjures up not an abstract "average student" but a diversity of children's images, life stories and trajectories. He mentally tests every "theory" to see if it can be applied to different children and situations. That is why a scientist doing work with "an experimental and control group" finds it hard to convince a teacher of anything because for the teacher every lesson is an experiment.

7. Conclusion

The above said suggests the following conclusion: to overcome the clashes and barriers between developing pedagogical knowledge and developing pedagogical practice it is necessary on the one hand, to improve the quality of pedagogical research and make it more relevant to pedagogical activity, and on the other hand, to upgrade the quality and science-intensity of pedagogical practice, its readiness to accept innovations, to develop the teachers' scientific thinking in the process of their professional training and continuous pedagogical education.

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