

# Reflection as an Applied Problem in Psychology

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The article presents some of the procedures and the results of a detailed study on reflection: analysis of the previous philosophical ideas and views, basic psychological concepts for reflection, classification of its types and species. Through specially selected and developed methodological procedures for the theoretical analysis the author has synthesized a thorough understanding of the nature of reflection as a complex phenomenon manifested in different modes — types and species. Proposed is a comprehensive classification scheme of reflection in which are divided its four types. Specifically addressed are the opportunities, the approaches and some achievements in converting theoretical ideas into practical application-programs, methodologies and technologies based on our knowledge of reflection. Analysis of the theoretical basis for the formation of a new, independent type of reflection — praxeological and its peculiarities. The author presents the basic guidelines and some results from the study of this fascinating human phenomenon — reflection.

**Keywords:** reflection, intellectual, personal, reflection as dialogue, praxeological, reflective approach, technologicalization of theoretical ideas.

Already a prestigious issue in the recent decades, reflection undoubtedly retain its relevance in the future. But crucial for this is its transformation from elitist and abstract humanitarian problem in applied problem of modern psychology. „Elitism“ of reflection consists in the fact that it occurred on the field of philosophy, which makes it complicated and difficult to understand and explored. As a phenomenon, reflection is considered to be an ability of people belonging to the intellectual elite of society. Qualitative reflection is not observed in its early and spontaneous events, and only when it reaches a high level of development in a subject.

But the researchers of reflection must not allow the reflexive problems to develop in a way that distances it from practice, since such a development could send reflection to the periphery of scientific and public interest. Therefore it is very important in theoretical studies of reflection to set the scene and determine the direction of the practical application of theoretical ideas. It is necessary to quickly and successfully connect reflection and practice through technology provision of theoretical reflexive concepts through their preparation for application in different social spheres — education, science and communications.

It is relevant to recall here the interesting pattern called in the science studies „law of Strahov,“ according to which the abstract-theoretical and only verbally formulated ideas are doomed to oblivion if their author-discoverer or his direct disciples do not turn them into

practical programs and implement them as concrete examples to work. On their own, believes N.M. Strahov, methodological ideas have no real impact on further research and the practice, if not reduced to an appropriate level of specification — in models or technologies [37]. The transformation of abstract theoretical ideas for reflection in technological developments is a very important task in the field of reflexive problems.

Since the very research and applied procedure „technology provision“ has hardly been developed in the field of humanity sciences and humanitarian law, later on the author pays particular attention as to its justification as a problem and also at the reflexive awareness of its procedural components.

Prerequisite for successful technology provision of knowledge for reflection is constructing generalized understanding, which should not only contain the most valuable of previous theoretical traditions, but also to maintain full **scientific authenticity of „reflection“** to not turn it into fashion verbal ornament to texts with no significant relationship with the true reflexive problems.

At the same time in the invariant summaries of understanding should be maintained and even highlighted the trend reflection to be investigated as a polymodal phenomenon. I defend the thesis that the detailed, logically sustained and empirically validated classification is the first and very important step towards the creation of technological procedures for practical application of knowledge for reflection. The successful application of

**For citation:**

Vasilev V. Reflection as an Applied Problem in Psychology. *Kul'turno-istoricheskaya psikhologiya = Cultural-historical psychology*, 2016. Vol. 12, no. 3, pp. 208–225. (In Russ., abstr. in Engl.). doi: 10.17759/chp.2016120311

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knowledge for any mental phenomenon in diverse public practice is possible only if it is based on a comprehensive, relatively complete theoretical concept for it. As we summarize the best examples of integrated theoretical concepts for various mental phenomena, we can synthesize the following main components of the concept of reflection:

- **Clearly explicit understanding of the essence of the phenomenon (in this case – on reflection);**
- **Understanding of the function and its role in the mental and practical life of man;**
- **Distinguishing its types and species (or at least differentiating the manifestations and the modes) – possibly to a complete classification;**
- **Beliefs or hypotheses for its spontaneous occurrence and for the active and purposeful formation;**
- **Ideas or practical programs for implementation in diverse human practice [1, p. 13].**

### **“Reflection over reflection”; nature of the phenomenon of reflection**

The theorist-researcher of reflexive problems is facing an interesting phenomenon: many authors interpret reflection too different and describe its various modes (types or species). Almost entirely are missing disputes and discussions on the issue of the nature of reflection: each author of a theoretical or empirical research postulates his understanding, citing authoritative predecessors without challenging and criticizing others opinions and without justify his own.

We can rise several versions to explain this interesting situation in the field of reflexive problems: the essence of reflection is self-evident and does not need discussonal proof and defense; authors working in the field of reflection stand out with enviable scientific tolerance; the reflexive problems are still in a relatively early stage of development – „the stage of initial postulation and accumulation“ of still unsynchronized theoretical ideas.

Each of these assumptions contained some part of the truth, but closest to it, I think, is the following explanation: Reflection is a complex phenomenon, manifested in a variety of modes, there are several „persons“ even several different entities, so each author easily finds in any of them his own understanding. Therefore still are needed extensive theoretical studies, which compare, systematize, integrate and summarize the various opinions. In an earlier study [1] the author analyzes carefully diverse conceptions of reflection, synthesizing generalized variant that can / the basis of empirical studies of the various manifestations of reflection. The roots of reflexive problems and authentic ideas about its nature should be sought in the philosophical classics. Here we cite only fragments of the analysis of these ideas, and some methodological methods used in its implementation.

G.P. Shtedrovitskiy [40] indicated that the ideas from which grew reflexive problems, emerge as early as in the famous controversy between J. Locke and G. Leibniz in which each of them takes the opposite position on the origin of reflection and its role in human knowledge

(while their views of the reflexive procedures are not so different ) [22; 24].

The concept of Kant (and the epistemological in general but even more the one for reflection in particular) is a synthesis of the concepts of J. Locke and G. Leibniz. I will give an indicative statement of Kant, sounding like a confession confirming this: “Instead of looking at the mind and the senses two completely different sources of ideas, but which could only be **combined** (highlighted by Kant – V.V.) to form objectively valid judgments about things, each of these great philosophers held to only one of the two sources, which in his opinion was concerned immediately to the things, while the other source did nothing more than to get involved or to arrange the images of the first “[15, p. 338]. (These great philosophers are, of course, Locke and Leibniz – V.V.).

The great Kant gives us a very useful lesson in theoretical tolerance and reasonable methodological approach: truth in the knowledge of man is rarely detected by the collision of extreme mutually exclusive positions, and the rejection of one of them; the truth more often is in the constructive synthesis of ideas, initially looking as alternative. Of the many speeches which Kant gave for reflection, I will give you what I think is best representing his understanding of its essence: **Reflection** (reflexio) – writes Kant – has nothing to do with the objects themselves, to get the right concepts for them, but it is a state of mind, in which we primarily prepare to find the subjective conditions under which we can come to concepts. **Reflection** is the consciousness of the attitude of given ideas to our various cognitive sources, only through which consciousness can be defined properly the attitude of those ideas between them “[20, p. 314].

The epistemological system of Kant appear as a first general model of intellectual reflection.

The relationship between Kant’s understanding of reflection and the application of modern knowledge for reflection in general practice certainly exists, but it should specifically be sought and revealed. We can’t expect from Kant to write, “we must teach the student to analyze and realize through what cognitive action he has mastered a concept” – as in our time would say P.Y. Galperin and N.F. Talyzina (and we can’t expect them to write that it was a “transcendental reflection” – as it was expressed by Im. Kant). In either expression is presented the same intellectual skill of the highest class – in epistemological, and psychological, and technological aspects. Even deeply “read” and decoded, Kant’s concept of reflection contains the hidden message that we, through specially focused training, could form in the students a way of thinking with a high degree of autonomy, which is a condition-prerequisite for a creative recreation of the world – in the expression style of, for example, the modern psychologists V.V. Davidov, V.I. Slobodchikov, G.A. Zuckerman and V.T. Kudryavtsev.

Among the philosophers-classics the one who wrote the most for the reflection was G.V.F. Hegel – in “The Science of Logic” and in “Philosophy of Spirit” he has devoted hundreds of pages to the reflection. But the implicit concept of Hegel for this phenomenon is not easy to reconstruct, because in many places the concept

of “reflection” is extended to the semantic scale of the terms “contemplation”, “reasoning”, “repercussion”; this gave me the idea of implementing the special methodological procedure, **comparative discrimination**.

Accordingly reconsidered the following idea of Hegel could serve as a starting point for the analysis of the reflexive ability: “Consciousness as the manifesting spirit that releases itself on the way of its immediacy and outside specificity, becomes pure knowledge, which gives itself for an object those pure essences, as they are by themselves. They are the pure thoughts, the thinking of its nature spirit” [8].

If we try to decipher the design of the famous and prominent philosopher, we can draw the following fundamental idea: in its development, thinking is released from its specific, unimportant – outwardly content of **what we think in thinking** (“foreign concreteness” – in Hegel), and becomes **pure thinking**, which established itself and rises, “gives for subject those clean (own – V.V.) entities as they are by themselves.” Thinking (the mind, the spirit as substance – in Hegel) became able to extract, to disregard the very lively process of thinking, to separate from their external subject content the “pure essences”, the “pure thoughts”, “the thinking of its nature spirit”. I hope that it will be true to the spirit of Hegel my following wording: **reflection is what can be delivered before the brackets when you separate from the objective content of the thought processes**. What can be realized, when we separate thinking from the mental, are the pure forms of thinking. They, according to Hegel are studied by logic; **and the uneasy process of such separation is the process of reflection** – we can add after Hegel (emphasis added. I – V.V.).

From the ideas of Hegel is worth to emphasize the idea of reflection as an exit beyond beyond the boundaries of the existing definiteness: “The reflection is a movement of thought that goes beyond the isolated definiteness and is leading towards attitude and connection with the other determinations” [8, p. 206]. This idea was extended and deployed in an interesting concept by the Russian psychologist L.S. Rubinstein.

Hegel first presented the reflection as a mediation (“mediated or reflected immediacy” [8], and this understanding gives a key to its mediated (instrumental!) formation, which makes it particularly valuable in technical plan.

Finally, Hegel first considered the reflection not as compact, uniquely identified and frozen phenomenon, but as a reflecting movement that exists in different modes (or forms). Hegel distinguishes between “first – setting reflection; second – external (comparing); and third – defining reflection” [8, p. 512]. (V.I. Slobodchikov in his interesting concept “positions” these distinguished from Hegel forms of reflection in ontogenetic plan as peculiar stages in the development of the reflexive ability of man) [35]. So Hegel sets the tradition of reflection being studied as a complex phenomenon manifested in different modes: types and species.

The complex concepts of Kant and Hegel for reflection are containing also technological ideas that must be carefully traced and retrieved and to be patiently processed. From Kant and Hegel start both directions

in the development of reflexive problems: in **Kantian direction** the reflection is interpreted as immanent and essential human ability to analyze “secondary” and to get to know the very cognitive process and its resources and to seek the reasons of our knowledge. This direction is followed by the phenomenologist E. Husserl, the existentialists S. Kierkegaard, M. Heidegger and J.-P. Sartre, also by P. Teilhard de Chardin, in psychology and pedagogy from J. Dewey, G. Piaget, A. Bozeman from the metakognitive school (J. Flavell etc.). **The Hegelian direction** regards reflection as a socio-cultural phenomenon, as a mediation in cognitive and practical activities and self-knowledge. Its followers are philosophers of the hermeneutic (H.-G. Gadamer) and the Frankfurt school (T. Adorno and J. Habermas), psychologist Ed. Spranger, the Russian philosophers and psychologists (L.S. Vygotsky, G.P. Shchedrovitsky, A.P. Ogurtsov, V.V. Davydov, V.I. Slobodchikov and many more).

Only K. Jaspers, S. L. Rubinstein and also V. V. Davydov integrate Kantian and Hegelian ideas into their concepts for reflection. This integrative approach is also followed by the author of this work [1].

The presentation of the numerous valuable and fundamental ideas about the nature of reflection and its essential characteristics, functions and specific manifestations (modes) here, of course, is not possible. In their analysis, we applied some particularly distinguished or designed theoretical and methodological methods, which allow various theoretical ideas to be systematized in a way reminiscent the processing of empirical data, rather than subjectively and biased to select those which a researcher considered valuable, necessary or just comfortable [1, p. 74–101].

By **the methodology of comparative discrimination** (comparative cutoff) we’ve distinguished the reflection among a number of concepts that seem similar in content and can be mistakenly considered reflection (but they are not authentic reflection). Such concepts are, for example, reflexivity, repercussion, introspection, empathy, rationalization, self-knowledge, retroreflection (of course, the list is open).

**The methodology of the content-component verification** of the concept and the concept of reflection is a systematization of the understanding for reflection of

the most authoritative and influential authors in this field. Previously are distinguished the substantive components of the concept (they are presented in the introduction of this article) and are tracked and systematized the coincidences or differences in the opinions between the individual authors. In this methodological method I tried to realize the principles of “rational discussion” of Karl Popper, his principle of conventionalism and the softer principle of “verifiability through testimony” of R. Carnap [42].

This fastidious approach in revealing the nature of a phenomenon and the concept of it I feel is necessary for the following reasons. In many cases the insight of the “old masters” –classics in the humanitarian science is amazing! Their valuable insights must not be only admired; but leaving them without application just because they are not expressed in a comfortable modern technological language is an unacceptable waste of ideas.

The number of modern psychologists and pedagogists who study the reflexive problems is much greater than the number of philosophers who laid the foundations of this classic topic. But appeared on the “reflexive scene” much later, we, the modern authors have many fewer opportunities and — **I will emphasize — fewer rights (!) to intervene in the formulation of the nature of reflection and the fundamental ideas in the whole concept of it.** I think that in the humanities, the fundamental classical ideas **must have not only a priority, they should also have special immunity** to protect them from arbitrary interference correction of later authors. So the timing of new ideas classics in the humanities not only provides continuity but also some sort of stability in the knowledge of man.

The analysis and synthesis of the views of dozens of writers, who have contributed most significantly to disclose the nature of the phenomenon reflection and to create a comprehensive plan for it, allowed us to present our complete wording: **Reflection is socio-culturally conditioned, instrumental and intellectual process (a process, a set of conscious and controlled mental actions), directed and meaningful to self-knowledge: knowledge of the own cognitive activity and own personality. Reflection is also a mental dialogue with the other, thereby reproducing the logic and content of thinking of the partner, and the subject is selfknowing itself through control and awareness of the impact of their own behavior on the partner. Reflection is mentally tracking and control over the realization of the knowledge and the qualities of the subject in its practical activity (reflexive control over commodification and the technologizing of the own knowledge and skills).**

At this stage, I think, any shorter and compact definition of reflection will be incomplete and will miss some of its essential features and modes. Because the overview of the main research shows that **reflection is all that is contained in the above formulation**; it is a complex phenomenon deeply characterizing the man that exists in various modes.

Attempting to extract invariant of different concepts leads to the following shorter (and of course — incomplete) understanding and definition: **the reflection is socio-culturally determined intellectual process, consciously directed (and understood) to self-knowledge, which manifests itself in several different modes.**

### **Modes of reflection: types and kinds of reflection.**

#### **The praxeological reflection**

Among the valuable views on reflection, born in the psychological tradition, some of them have particular importance for the conversion of reflection in a subject of application-oriented research. First we will put J. Dewey, who created the first comprehensive concept for reflection, that contained a clear pragmatic orientation and a number of valuable technological ideas — for the purposeful formation and purposeful application of reflexive skills [15].

The famous psychologist, of the twentieth century, Jean Piaget leaves its contribution to the reflexive problems, by introducing the concept of **reflective abstraction**, with which he highlights the most important feature of intelligence of the stage of formal operations. This is the ability of students to separate and realize their cognitive actions to analyze not only the object or the result, but the means by which it is achieved. So the actions themselves are organized and systematized, allowing successful action to be applied to a new similar situation or task. The student becomes able to build hypotheses, derived deductive and to identify (in advance and in a combinatorial way) systems of actions through which to examine them [45]. For the first time in Piaget we meet specific description of reflexive procedures that represent too abstract reflexive ability of the language of the operations, i.e. technologically.

The reflective abstraction of Piaget reminds of the transcendental reflection of Kant, which is no accident. Earlier I called G. Piaget “one of the biggest neokantians of the twentieth century” as he very aptly recodes some fundamental epistemological ideas of Im. Kant to the language of psychology [6, p. 21].

Special view of understanding the reflection contains in the idea of S.L. Rubinstein (manuscript of his “Man and the World”) for the both ways of being a human and, accordingly, two of his attitudes to life. This idea is well known, and therefore I will cite only short fragments: “The first — this is life, not going beyond the boundaries of immediate connections ... Here, the man is fully immersed in life, /.../ can’t take a mental position outside of life, to make a reflection on it. /.../ The second way of being is associated with the occurrence of reflection. It seemed interrupting this continuous process of life and pulls human mentally outside its borders. The man somehow takes a position outside of life. /.../ From here starts or path to spiritual emptiness, nihilism, moral skepticism, cynicism, moral decay ... or the other way — towards constructing a moral life on a new, conscious basis. With the advent of reflection is connected the philosophical understanding of life “[31, p. 347–348]. Since in these thoughts is synthesized the dramatic personal experience of S. L. Rubinstein as we integrate his theoretical views with his dramatic destiny (fate of a high self-actualized personality), we could say on his behalf say that reflection is such understanding and rethinking of one’s own life, which rises (soars!) man over the circumstances and makes him independent of them.

Rubinstein’s ideas, according to which reflection is a major intellectual mechanism of regulation to their activity (and life) according to the conscious goals of the person, are in need of clarification and development — at first an intermediate theory with medium range, and then in specific technologies. Steps in this direction are already done by V.I. Slobodchikov [35].

The methodologist G.P. Shchedrovitsky deeply interpret reflection in its theoretical and applied aspects: the reflexive dialogues are not isolated, they are at the core of unity “thought-activity” and are the technological basis of organizational-activity games in which are fully realized the capabilities of reflexive cooperation [41].

Outstanding is the merit of V.V. Davidov and his followers for turning the reflection from abstract-theoretical in practical problems. Based on the Hegelian socio-cultural mentality and constructivist optimism of L.S. Vigotsky, Davidov postulates that reflection can be intentionally formed and even in earlier age, thus submit it as a typical high intellectual new formation for the young student [11; 12]. And on this promising theoretical and applied basis A.Z. Zack creates specific and very inventive methods-models for the formation of reflexive skills – the artificial reflexive tasks and even “reflexive instrumental gestures” through which “outside – inside” (just in L.S. Vigotsky) is build the reflexive regulatory scheme [17].

Maybe “the training” settlement of artificial reflexive tasks will allow younger students to use reflection when problem solving programmed school material? And it turned out that way, my colleague Sonia Meloyan found that solving special tasks “with reflection” (suggested by A.Z. Zak and modified by V.S. Goncharov), half of the students from second grade master reflexive skills that also successfully apply in solving school problems in mathematics [25].

In the researches of V.V. Rubtsov, reflection manifests itself as an essential component in the structure of the joint (cooperative) learning activities of students in the process of raising the level of their systematic [28; 32].

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What we do know for reflection is actually what we know about the individual acts of reflection – i. e. for its modes, kinds and types. The complete and logically correct (comprehensive) classification is not only an important step in the knowledge of reflexive phenomena, but also an important step in the technologization of this knowledge. The compact, undissected, ideal objects (knowledge) hardly become more technical; and the correctly distinguishing of types and kinds of reflection is already a **technological procedure**.

It is impossible to present and evaluate the numerous and diverse classification schemes. In some of them instead of logically correct distinct kinds and types, are offered lists of specific, even occasionally occurring modes of reflection. Some prominent authors considered for “reflection at all” just this mode, that they explore themselves (e.g. V.A. Lefevre – communicative and G.P. Shchedrovitsky – cooperative reflection).

We approached it in another way – through the specially constructed methodology – **classification defining**, we analyzed and systematized the understanding of reflection of 120 authors; in their list undoubtedly fall all of the created valuable insights in this area. Beforehand phenomenological we distinguished among four main modes of existence of the reflexive phenomena and for the first three there was no doubt:

– **intellectual** reflection is described and recognized since Locke, Leibniz, Kant, Hegel, Husserl, Dewey and almost all modern writers;

– **personal** reflection occurs in the concepts of Leibniz, Hegel, Teilhard de Chardin, Jaspers, Heidegger, Sartre and many contemporary authors;

– **reflection as dialogue** (this name i chose) is differentiated in the understanding of Husserl, Gadamer, Habermas Bibler, Lefevre, Shchedrovitsky; it is researched under other names from many contemporary authors;

– **praxeological** reflection was established as a separate type by me [4] based on the fundamental ideas occurring in Teilhard de Chardin, Jaspers, Gadamer, Merleau-Ponty, Adorno, Dewey, Rubinshteyn, and also by the comprehensions of many contemporary authors.

In the analyzed works of all these 120 authors we found a total of 197 references of the above modes-types of reflection. Intellectual occurs most frequently – a total of 71 times (thus making 36%); personality appears 52 times (26%); praxeological – sometimes under a different name – is referred to 39 times (20%) and reflection as dialogue – 35 times (18%).

We have a reason to conclude that these four types include and deplete the whole variety of possible manifestations of reflection, i. e. each reflexive phenomenon observed in life and described in theory, can refer to any of these classification. **In the works of the 120 analyzed authors, and also many more, we have not met a single case (mode) of reflection or an understanding of it, for which this classification scheme to be “tight” and could not include it and that proves the scheme’s logical and meaningful correctness.**

On this basis, the overall classification scheme of reflection that I suggest, looks like this: **Intellectual reflection type** can be divided into the following types:

– **intellectual reflection in education** (which manifests itself in the modes formal and content – by V.V. Davidov and A.Z. Zach);

– **intellectual reflection in science** (research reflection).

**Personality type of reflection** is divided into the following types:

– **reflection on the actions and activities;**

– **reflection on the qualities** of the individual.

**The type of reflection as dialogue** is divided into the following types:

– **communicative reflection;**

– **cooperative reflection;**

As of this type applies also **the reflection in conflict situations.**

**Praxeological type of reflection** can be divided into the following types:

– **professional reflection** (it can be divided according to the occupation of the specific subtypes);

– **technological reflection** [1, p. 109].

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**Praxeological reflection** was distinguished by me as an individual, private type in 1989. [3; 4]; This term was required to designate a specific direction and a particular content in the reflexive process. The thinking, through which the subject selects the necessary and the most relevant knowledge to implement in a practical

activity; the mental procedures that prepare, regulate and control the conversion of these knowledge resources into means (tools) to solve professional and life practical tasks (“instrumentation” and “technologization” of knowledge, their preparation for going, for “pouring” into practice); regulating, controlling and understanding the effectiveness of using the pragmatized knowledge and actions (i. e. the imaginary tracking of their technological and applied fate) and all this constant referencing to the peculiarities of the thinking and acting subject — such is in general the complicated psychic phenomenon which needed the new term “praxeological reflection.”

Fundamental ideas to distinguish this type of reflection can be found in Hegel’s concept of alienation of ideas and their commodification in socio-cultural life; in the theory of J. Dewey, according to which the arrangement of thoughts in a special, pragmatic-effective manner, facilitates pragmatic awareness and application of our knowledge; the idea of M. Merleau-Ponty, that reflection is real, if it becomes the basis and mechanism for regulation and changes in the structure of our being; in the distinction, made by H.-G. Gadamer between the classical science and the modern technological knowledge and in his concept of practical philosophy as a reflection on the application of theoretical concepts to the specific conditions of life experience; at the position T. Adorno that only when in the basis of practice we apply enough theoretical reflection, it becomes true, and leads to effective changes in reality; the concept of R. Sternberg for practical intelligence manifested in human skills to accumulate strong attributes and to correct or compensate for their weaknesses. By praxeological reflection “unobvious knowledge” (in Sternberg) may become “obvious” — to be present in the subject’s mind and to develop in interaction with the theoretical experience of society.

### **Operationalization and Technologizing of the ideas for reflection. Reflexive approach and reflexive Technologies in Education**

An important step in technologizing of the knowledge of reflection (representing entities, characteristics, relationships, patterns and more in a frozen, as if “crystallized” form) is their **operationalization** — reorganization and rethinking them in processes, events, actions, phenomena in dynamics and occurrence; in this current mode (mode of existence) they are available for control and regulation, and therefore for a focused formation and subsequent effective application in practice. I will give a series of examples for operationalization of ideas for reflection contained in the technology practice in the field of humanities:

1. Praxeological reflection appears as deliberately “estrangement” of the thoughts of the subject; as creations ( “crystallized” already implemented thoughts), and as a description and analysis of subjective actions led to such creations (in the ideas of Hegel);

2. Praxeological reflection is an active mediation of mental action through application of appropriate

tools — schemes, records, operating models and models. Outsourcing of operations externally facilitates both self-regulation and control on them as well as their autonomous processing (ideas of Hegel, Vygotsky, Davidov, Zack);

3. Any theoretical knowledge, Dewey believes, need to be seen not only in the abstract cognitive plan (“what?” and “why?”), but in practical-application term (“for what?” and “how to use?”). The mere asking of these questions already forms praxeological style of thinking and behavior (also on ideas of Gadamer and Adorno);

4. If cognitive tasks and thinking in general are organized in advance according to the structure of practical tasks, this thinking will be formed as praxeological reflection at the start (according to the ideas of Dewey, Merleau-Ponty, Pribram, Galantar and Miller).

5. Purposeful self — regulation through the design and implementation of programs and resources for self-control and behavior management — manifests as praxeological reflection (on the ideas of Vygotsky and Jaspers).

6. In academic activities when learning reproduces the pattern of its discovery, or the process of their practical application, praxeological reflection is built (on ideas of Dewey, Galperin, Davidov).

7. When the subject recognizes the individually-personal features of his partner (graduate, colleague, rival), and according to his probable reactions selects the most appropriate actions and effects for his or the combined overall success, then the dialog reflection grows in praxeological (in ideas of Shchedrovitsky, Lefevre, Habermas).

New directions and procedures for the operationalization of abstract theoretical reflexive ideas, of course, can still be added. The transformation of abstract ideas and theories in humanitarian technologies must pass, I think, through the creation of the so called intermediate theories with medium range. These theoretical ideas are presented in formulations that allow their empirical verification, as considered by I. Lakatos himself [44]. But they are intended also to preserve the authenticity of the scientific and theoretical ideas (preserve them from deformation) in the course of their practical realization.

As an example of an intermediate theory that very successfully implemented the above role I will point out the **concept of reflexive approach**, the idea of which was raised back in 1985 by Bulgarian psychologist P. Nikolov. Reflexive awareness, planning, self-regulation and control of the own learning activity (these are the components and the principles of the reflexive approach) convert the schoolboy and the student in self-learning entity [26].

Later on her own original version created J. Dimova who enriched the reflexive approach with humanistic ideas from the acmeology the theory of self-actualization [14; 43]. The book, in which she presented her concept received a favorable assessment from V.A. Lefevr [23].

In the creating of my concept of reflexive approach in training, I applied the two-way analysis: in one direc-

tion the analysis follows the **arguments of the theory** – selected are the strongest and most valuable achievements of the reflexive theory worthy to be applied in general educational practice; they are derived from the content characteristics of all individual types of reflection and thus has realized the postulate that the classification is a necessary first step in the more technical (it reminds the idea of I. Lakatos a positive heuristics); in the other direction the analysis is based on the **arguments of the practice**, taking into account what are the most vulnerable to criticism and inefficient units in the education that can be improved by the application of ideas available to the reflexive theory (this way negative heuristics are made – by Lakatos ). In the “zone” of overlapping of two vectors can be formulated the following key features and positions of the **reflexive approach** in learning:

- dialogic model and style of training (implements the theoretical ideas for personal reflection and reflection as dialogue);

- maximum consideration of the cognitive abilities and interests of students and a strive to develop these opportunities and interests through training (intellectual and personal reflection);

- referencing and linking of the acquired knowledge with the model and logic of the cognitive activities and a strive to the awareness and purposeful formation of these actions as a key task of training (intellectual reflection);

- clear practical trend and rationalization of the knowledge and training in general (praxeological and personal reflection);

- the creation of each teacher’s own professional style, which combines harmoniously his strongest individual (personal) features with the main functions and tasks of the profession (personal and praxeological reflection) [1].

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Thirty years ago in the University of Plovdiv “Paisii Hilendarski” emerged an interest in the reflexive problems, which gradually evolved into a research activity and a research program. At first, the initiators – V. Vassilev, A. Dzhaldeti, R. Stamatov – were developing theoretical and methodological aspects [3; 4; 36]. With the expansion of the circle of followers and with the valuable support of V.V. Davidov and V.I. Slobodchikov [13; 33; 34], the problems extended in the direction of the applied aspects of reflection – in educational, methodical and culturological term [5; 29; 30]. A distinctive Bulgarian tradition was shaped that some colleagues called “the Plovdiv School of reflection”; its originality is manifested in the cooperation with specialists in teaching methodology and in the developing of training technologies “with reflection” (reflexive technologies) in the upper grades.

While the previously applied reflexive technological maneuvers were more universal, neutral in terms of content – could be applied to all subjects and usually in elementary school, exactly in the Bulgarian research tra-

dition were made successful and encouraging attempts to develop a comprehensive **learning technologies with reflexive character. on a particular subject in a class**, that organize and rationalize reflexively the specific training material.

In a in-depth study on reflection over chemical knowledge Y. Dimova constructed a special didactic phenomenon – special educational tasks for reflection, whose solution requires students (in VII grade) to realize their activities in two positions – the position to understand the changes in the studied object and the position to understand their own knowledge on this subject and between the two positions is carried out a special reflexive dialogue. The author combines features of the intellectual, personal and the reflection as dialog [7; 14; 43].

M. Georgieva creates a technological model for teaching geometry in V – VI grades in which reflection occurs as an intellectual procedure which helps rationalization and control of the own actions in a team activity and as a focused improvement of personal skills [9].

T. Kolarova develops technologies for the development of intellectual reflection in biology teaching in IX grade by synchronizing series of didactic variables: group organization through an active reflexive dialogue, reflexive goal formation, intellectual procedures (for reflexive summarizing and reflexive organizing of the actions and thoughts – by J. Dewey), for reflexive control and selfcontrol [7; 21; 46].

I. Hadzhiali develops interesting reflexive technologies applied to the educational content in molecular genetics (in IX grade) that combine the intellectual, personal and praxeological reflection. The reflexive analysis on the moral dilemmas arising from the modern genetics on its own values, motives, actions and qualities (all this – in a specially created problem-conflict situations), activates and stimulates the own potential of the student for intellectual and personal development [39; 46].

D. Zhelezova-Mindizova examines empirical pedagogical reflection having considered it as a mechanism of professional development of teachers [16]. For one year (2015) three dissertations were made on the “reflexive methodological” problems. E. Todorova developed theoretical and applied didactic model for the formation of reflexive skills IT education [38]. K. Kamarska created specific reflexive research methodology for studying the chemical objects in the initial stage of chemistry education. [19] N. Ivanova developed the reflexive and synergistic aspects of heuristic activity of students (7–8 grades) in teaching geometry [18].

At the end of 2015 in Plovdiv was held international scientific conference dedicated to the reflection of which over 50 participants (including our Moscow colleagues psychologists V.A. Guruzhapo. and V.L. Sokolov) presented theoretical and empirical work with the applying of reflective technologies in the teaching of different subjects in different classes (see .: [2; 10]).

Reflection remains an extremely interesting field of science of man in which the abstract-theoretical and applied-practical research should go together.

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