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ANALOGY. POSSIBILITY OF ANALOGY IN PEDAGOGICAL ACTIVITY

This article is dedicated to the methodological analysis of analogy and possibilities for its use in pedagogical activity. Analogy as a method of cognition and rhetoric fits well in the system of pedagogical discourse and may be effectively used at different levels of building pedagogical knowledge.

The article is focused on the problem of developing the method of analogical reasoning in schoolchildren. The mastery levels of analogy and some techniques developing the ability to create and understand analogies are also analysed herein.

Keywords: *analogy, pedagogical activity, education, communication, metaphor, induction.*

Modern education is in need of a teacher who has high intellectual and communication skills, is able to think critically and to solve his/her tasks creatively. Searching for new ways to improve the efficiency of education encourages the quest for teaching technologies that enable using the teacher's personal potential to which not enough attention has been paid before. The skill to draw analogies, make comparisons, use metaphors is of a pedagogical value. Specialists place the skill to work with analogies in line with other qualities which compose the professional scope of a teacher.

The problem of analogy as a pedagogical problem finds some coverage in the contemporary literature. However, the potential of analogy in pedagogical practice has not been studied sufficiently. Therefore, questions regarding the use of the method of analogy in teaching are still topical, and it is connected with different interpretations of the concept of analogy, plurality of its forms and, as a result, with different approaches to its use in teaching. However, it should not affect the understanding of productivity of analogy and the ability to use its pedagogical reserve. Introducing into the pedagogical armoury the means, methods and techniques based on the knowledge of the methodical potential of analogy is a substantial reserve for increasing the effectiveness of teaching, education and personal development.

The question about the place of analogy in the arsenal of scientific methods touches upon a complex of complicated problems whose prehistory is anything but simple, rather tangled. Topicality of these problems is confirmed by the fact that the phenomenon of analogy continues to be a major focus of interest in different fields of knowledge for more than two millennia. The volume of publications on these problems is adequate to the role which analogy plays in our cognition, language, socio-cultural development of society. Growing theoretical interest in analogy was stimulated by an increase of its presence in different spheres of man's vital

activity. Without doubt, the expansion of analogy into different types of discourse has not gone unnoticed. Fine art experts, philosophers, psychologists and linguists refer to the problem of metaphor with a keen interest.

Analogical reasoning and cognition are historically rooted in the remote antiquity. In the primitive times, analogy and comparison as forms of cognition based on the material activity were used widely enough. For example, choosing material to make an instrument of labour or an arrowhead and comparing the properties of different stones, a primitive man arrived at a conclusion that an item made of flint is more durable and is relatively easy to sharpen. With the help of analogy he searched for such stones with similar properties since they became more effective instruments which the primitive man used. At the same time, many magic beliefs and magic practice depended on the acknowledgement of some similarities in the phenomena of the surrounding world. A. N. Veselovsky noted that a primitive man perceived the external world descriptively based on the parallelism of the man and nature [1]. Natural phenomena were perceived by a primitive man's consciousness as a living organism, that is why 'the sun moves, rises, sets', 'the wind whistles', 'trees moan', etc. A primitive man constantly assigned the features and aspirations characteristic of his personality to the objects of the external world. Such vision of nature as something animated, this passion to analogy contributed to the development of speech and descriptive, metaphorical thinking. E. Cassirer considered that 'The origin of metaphor is connected with the appearance of language or with mythological fantasy. An individual metaphor is born with the help of fantasy, whereas an ancient metaphor is the result of the necessity thereof' [2: 33]. In the course of time, mental activity began to acquire systematic nature, analogy was used more widely as a form of reasoning and as a means of helping to develop the material practice of people from the needs of which it, in the long run, has appeared and continued to be used in the new social environment.

On the conscious level, the concept of analogy was established in the Ancient Greek culture. Numerous judicial lawsuits and public appearances improved public speaking and sharpened the techniques of eloquence by using analogical inference. In the 5th century B.C. Protagoras wrote 'The Techniques of Eristics' where analogy is regarded as a logical method. However, the first systematic description of logic and understanding of the inductive methods were given by Aristotle. According to Aristotle, induction, in contrast to deduction, deals not with formal reasons but with the material ones. Induction is not a perfect method of cognition. Analysing analogical inferences, Aristotle arrives at a conclusion that this inference is of probabilistic nature. Aristotle connects the study of analogy with the study of metaphor and considers that the difference between them is rather insignificant. Analogy is an extended metaphor, a unique explanation of metaphor. In some cases, the words 'as', 'as if', 'as though' may serve as formal attributes of analogy. Depriving analogy of just one word 'as', we convert it into a metaphor [3: 180]. Besides, metaphor differs from analogy by the fact that observing of the entire sequence of logical procedures is not required for its use. In this sense, metaphor is close to an enthymeme (rhetorical syllogism) which is consciously deprived of the power of logical compulsion. The advantage of metaphor over the discursive means of logical reasoning lies in the fact that we obtain the maximum of information having a minimum of lexico-grammatical means. However, what is acceptable for a speaker or an actor does not satisfy a scientist. This is why Aristotle-logician proceeded from the syllogistical study but Aristotle-rhetoric considered special features of the specific character of artistically visual thinking. Thus, the concept of

analogy is used by Aristotle both in the logico-ontological and semantic sense. In the first case he takes the way of a scientific analysis related to the conformity of ideas to things, and in the second case it is a reality according to the principle 'as if'.

A huge part in understanding the role of analogy was played by medieval thinkers William of Ockham, J. Buridan, J. D. Scotus as well as by the modern age scientists F. Bacon, R. Descartes, G. Leibnitz and others. In the modern age, analogy as a form of scientific thinking and obtaining new knowledge became more widespread among scientists. D. Diderot claimed that 'in physics all knowledge is based only on analogy: what would have become of science if the similarity of consequences did not give us the right to conclude about the identity of their reasons' [4]. In the supremacy period of the mechanical worldview, worshipping of analogy became universal. Analogy actually became the leading form moving the scientific progress in all fields of knowledge.

With the beginning of non-classical period in the development of science analogy started to experience crisis states. Analogy, being capable of giving only logical conclusions from the single compared phenomena and giving actually only plausible, probabilistic knowledge, joined the category of trivial scientific cognition forms and it caused a rather sceptical attitude towards it. In science, an established opinion was even formed that 'analogy is demonstrative, but not evidentiary', 'analogy is not a sufficiently reliable argument in the proof theory'. Within the framework of a traditional paradigm, analogy in a scientific text was frequently perceived as indicating insufficient strictness of thinking and flawed style of presentation. It was believed that a scientist had to know how to manage without metaphors and comparisons. Analogies do not meet the scientific style requirements and can substantially distort reality. Analogies were allowed only within the framework of scientific journalism where they had to fulfil pragmatic and popularising functions.

It continued this way up to the 60's of the 20th century when a new direction was formed in the philosophy of science, i.e. postpositivism. M. Polanyi, K. Popper, T. Kuhn, I. Lakatos, P. Feyerabend advanced new methodological provisions related to the new interpretation of authenticity both of empirical and theoretical knowledge which contributed to the rehabilitation of analogy as a logical form. In the contemporary science, the attitude towards use of analogies has changed considerably. Researchers perceive analogy as a full-fledged method of cognition, categorisation, conceptualisation, estimation, and explaining of the world. Scientists not only express their thoughts with the help of analogies, but also use the aesthetical potential thereof. Analogies help convert the linguistic view of the world existing in the consciousness of an addressee, introduce new categorisation into the idea of the seemingly well-known phenomena and give a new emotional evaluation thereof.

In the contemporary logic, analogy is a form of inference when a conclusion is made on the basis of a single factor and contains an inference of individual nature. By means of analogy information is transferred from one object (or class) which performs the role of a model (analogue) to another (prototype). Premises relate to the model, whereas conclusion – to the prototype.

There are different forms of analogies, i.e. analogy of objects and attitudes, analogy of properties and functions. In addition, in logic analogies are examined with respect to the authenticity of the drawn knowledge. In this context analogies are subdivided into three basic forms:

- 1) strong analogy that gives reliable knowledge;
- 2) weak analogy that gives probabilistic knowledge;
- 3) false analogy that leads to false conclusions in the end.

The simulation method widely used in science is based on a strong analogy. In contrast to a strong analogy, weak analogy does not yield knowledge that is reliable in nature but gives only a probable inference; therefore, it relates to the so-called probabilistic knowledge since it does not emerge with the need, i.e. it can be and cannot be.

False analogies are frequently used with the aim to deliberately deceive an individual as it was done by 'sophists' in their time. As a rule, false analogies among scientists are not intentional, but appear either in view of the lack of sufficient actual knowledge or because of the lack of knowledge about the rules of how analogies are built.

Analogies hold a special position in the artistic creation where observing the rules of strict similarities so necessary in scientific cognition is not compulsory. The freer the artistic compositions are in terms of analogy, the stronger is the artistic impact and the more significant are creative achievements. Art, undoubtedly, gives knowledge about the reality surrounding a man. However, obtaining the objective, true knowledge is not the primary task of art. Analogies in art contribute to the creation of means and to the recreation of artistic truth.

Thus, analogy in scientific cognition is the heuristic method of thinking about the world. Analogical inference makes it possible to establish connections between the studied phenomena requiring explanation on the basis of facts previously studied and explained by science. The transfer of knowledge obtained while studying one object to other objects is the most important task not only in terms of development of science, but also of education.

Thinking of a teacher, as any cognitive activity, is subjected to the specific logical laws and techniques of scientific cognition. In pedagogical activity analogical reasoning is just as widely used as in all other spheres of human vital activity.

Analogy in pedagogy may be considered from different points of view. First of all, analogy may be looked at from an ontological point of view. The ontological dimension of analogy is based on ensuring the existence of the constructed reality expressed by analogy. Analogy serves as a means of developing pedagogical terminology and renovating the language of science. The ontological approach to analogy is not reduced only to the nominative activity. Analogy creates not only new terminology but also contributes to the formation of the world view.

The gnosiological approach indicates that analogy is a necessary tool of cognition. Analogy in pedagogy plays the explanatory and instrumental roles. It is often impossible to explain the fundamental concepts of pedagogy and their interrelation without turning to analogy. J. Ortega y Gasset assumed that analogy is almost the only method that can be used to speak about the processes and objects of the high degree of abstraction [5: 72]. Furthermore, the power of analogy consists in the ability to break the existing ideas and concepts in order to build new concepts on the ruins of the old pedagogical ideas. The demand for analogy especially grows in the transition period or at the junction of change of pedagogical paradigms.

The axiological approach demonstrates the ability of analogy to have an emotional effect on a man. Analogy highlights the key points which make it possible to speak about the system of the teacher's values. The axiological potential of analogy gives a possibility to convert the linguistic view of the world existing in the consciousness of an addressee and give a new emotional evaluation to notions.

The availability of diverse approaches demonstrates the variety and polyfunctionality of analogy as a method of expressing pedagogical ideas. Analogy is capable of expressing both rational constructions and intuitive notions, and barely noticeable game of meanings. In other words, analogy fits well in the system of pedagogical discourse and may be effectively used at different levels of building pedagogical knowledge.

Academic and educational literature is saturated with analogies and metaphors. Moreover, it cannot be said that researchers of pedagogic processes mainly use strong analogies. It goes without saying that educational researches attempt to use precise analogies. But, at the same time, in researches, together with strong analogies, rather approximate adaptations and artistic comparisons may be present. The explanation to this can be found in the variety of tasks solved by a teacher. On the one hand, this is understanding of the role played by analogy in the theory of knowledge, on the other hand, understanding of the fact that education is a complex humanitarian phenomenon for the reflection of the essence of which it is necessary to attract the most diverse public practice. Analogy may be used by a teacher in order to make less understandable things more understandable, to present abstract things in a more accessible, more descriptive form, to define abstract ideas and notions more specifically. Analogy makes it possible to transfer complex and not always understandable scientific concepts which require further explanations to verbal forms that are more specific and more acceptable for the audience.

Analogy may be a means of proposing new hypotheses, a unique method of solving problems through their reduction to the previously solved tasks. In the long run, that is the nature of the pedagogical discourse that defines the type of analogy. In case of a pedagogical research a strong analogy is required. Working in the audience, a teacher may find free analogies and artistic metaphors useful. Working with the audience, analogy allows a teacher to roll up the process of argumentation and "say much by saying little". Using analogies, a teacher influences the audience, changes its attitude and emotional state and simultaneously focuses the learners' attention on the necessary issues.

Furthermore, it is necessary to distinguish between analogy as a methodological means of organisation of the learners' cognitive activity which makes it possible to actualise the material and mastery of it as a mental activity technique for its subsequent independent application by the learners. Both aspects are interconnected, and organisation of the process of analogy's mastery has a very strong influence on the possibility of its understanding.

The question regarding how to develop the ability to use analogies requires special consideration. It should be emphasised that from their first steps of discovering the world children use analogy spontaneously, at the subconscious level. However, conscious use of analogies testifies of the personality's creative potential and contributes to the increase of algorithms in productive activity. Developing the capability for thinking by analogy, imagination, analytical abilities, systematic character, flexibility, generality, awareness and many other qualities necessary for a creative personality are developed.

Analogical reasoning involves the whole experience and inner world of a child rather than only its rational side. Analogical reasoning is an invaluable means for linking the rational and emotional elements of content of the questions under discussion. Analogies contribute to updating the children's sensual experience, enrich their culture of experience. A teacher by his/her questions directs the learners towards the establishment of similarity between the known task and the task that is offered for solution. This way the capability to accomplish a mental

transfer of a specific system of knowledge from the known object to the unknown is developed. An analogical inference implies updating of the learner's personal experience in the process of knowledge acquisition which leads to a more durable mastering of the training material. In the long run, analogy makes knowledge flexible and operational, since it contributes to the formation of the learners' ability to independently find new methods of problem solving.

Analogy as a linguistic construction implies combination of things that are incompatible in real life. This particular 'interaction of incompatibilities', or, to be more precise, their characteristics and associative complexes that accompany them, allows analogy to create new volumetric images and generate an increase in knowledge. Analogical inference is a procedure that has a clearly expressed creative nature. Therefore, 'teaching analogy' cannot follow the path of mechanical memorisation. The formation process of the ability to draw analogous inferences must not only be continuous during entire instruction, but it also must be open for the attraction of diverse methods of stimulating consciousness. According to L. Vygotsky, analogies are not mastered and not learned by heart, not memorised; they appear and are built with the help of the utmost strain of the entire activity of one's own thought[6. 396].

Teachers use different tasks as the techniques developing analogous thinking. For example, learners may be offered to imagine an object in an unexpected situation or to establish a semantic relation between this object and any other random object, or to ask as many questions about the object as possible, to put down all the ideas that occur in relation to solving a current problem, etc. William Gordon considers that analogous inference is developed at the expense of techniques as follows: 1) personal adaptation when it is necessary to imagine oneself being the studied process, a component, tool, etc; 2) direct analogy; 3) symbolic or poetic analogy; 4) fantastic analogy which makes it possible to propose a solution as in a fairy tale without considering the laws of nature [7].

Great possibilities for the development of associative thinking and analogy are provided by the involvement of context. Placing an object in a new context, a teacher helps children to see in it properties that previously receded into the background, that seemed to be unessential. Analogy helps to tear customary semantic connections, to destroy long-standing stereotype ideas and to move apart the horizons of vision and understanding of objects and phenomena. Mastery of the method of analogy makes it possible to include the learners in a wider circle of cognitive, training and didactic tasks. Analogy ensures significant latitude of the knowledge transfer from one object to another. Using analogies, the thesis about the unity of the world finds real confirmation, and integral perception of this world is formed in the consciousness of a learner. Analogy inscribed in a wide cultural context helps connect knowledge from different fields into a single whole.

Mastery of the skills of work with analogies can be subdivided into several stages or levels. The learner's skill to understand figurative meanings of words, read and evaluate texts containing analogies, include constructions using comparisons and analogies in speech should be considered the lowest level. The following level implies the skill to find, understand and interpret analogies, to create analogies or construct them according to the assigned model, to use analogies in speech. The third level is the level of reflexive attitude to analogy, when a learner is capable to demonstrate critical attitude to the selection of linguistic means and analyse the mistakes made, try to eliminate the reason thereof. The highest level of mastery of analogy is much like a skill and demonstrates the creation of original analogies by the learners, the ability

to subject non-standard analogies to analysis and to explain their role in the text, and shows free mastery of different types of analogous inferences when accomplishing creative objectives.

Thus, analogy is not just a logical operation. Analogical reasoning is a method of cognition, categorisation, conceptualisation, evaluation, and explanation of the world. A man not only expresses his thoughts with the help of analogies, but with their help he also gets to know the world in which he lives. This makes it possible to effectively use analogy for the solution of educational and pedagogical tasks. Analogy fits well into the system of pedagogical discourse and may be widely used in different areas of pedagogical activity. Analogy is used by a teacher to make something incomprehensible quite understandable, to represent the abstract in a visual, descriptive form. Making use of analogy, a teacher converts complex scientific concepts into verbal forms that are more specific and more acceptable for the consciousness of children.

Using analogy in pedagogical activity implies the inclusion of a learner in the process of obtaining knowledge and, as a result, more durable and conscious mastering of the training material. Analogy ensures a mental transfer of the specific system of knowledge and skills from the known object to the unknown, thus contributing to the formation of the analytical activity skills in the learners, contributes to the appearance of new associations, develops their creative potential.

With this regard, knowledge of the special features of the method of analogy and the ability to use it both in theory and practice is an indispensable quality of a qualified teacher.

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АНАЛОГІЯ. МОЖЛИВОСТІ ВИКОРИСТАННЯ АНАЛОГІЇ У ПЕДАГОГІЧНІЙ ДІЯЛЬНОСТІ

Стаття присвячена методологічному аналізу аналогії і можливостей її використання у педагогічній діяльності. Аналогія як метод пізнання і риторики добре вписується в систему педагогічного дискурсу і може ефективно використовуватися на різних рівнях побудови педагогічного знання.

У статті зосереджено увагу на проблемі розвитку у школярів методу мислення за аналогією. Проаналізовано рівні освоєння аналогії і деякі прийоми, що розвивають здатність створювати і розуміти аналогії.

Ключові слова: аналогія, педагогічна активність, освіта, спілкування, метафора.

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АНАЛОГИЯ. ВОЗМОЖНОСТИ ИСПОЛЬЗОВАНИЯ АНАЛОГИИ В ПЕДАГОГИЧЕСКОЙ ДЕЯТЕЛЬНОСТИ

Статья посвящена методологическому анализу аналогии и возможностей ее использования в педагогической деятельности. Аналогия как метод познания и риторики хорошо вписывается в систему педагогического дискурса и может эффективно использоваться на разных уровнях построения педагогического знания.

В статье сосредоточено внимание на проблеме развития у школьников метода мышления по аналогии. Проанализированы уровни освоения аналогии и некоторые приемы, развивающие способность создавать и понимать аналогии.

Ключевые слова: аналогия, педагогическая активность, образование, общение, метафора.

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ЛЕКСИКО-ГРАММАТИЧЕСКИЙ АСПЕКТ В ОБУЧЕНИИ ДЕЛОВЫМ ДИСКУРСАМ ИНОСТРАННЫХ УЧАЩИХСЯ

Статья посвящена рассмотрению лексико-грамматического аспекта в обучении иностранных учащихся русскому языку делового общения. Лексика является необходимой базой построения дискурсов разных жанров. В свою очередь, грамматика – это своего рода матрица оформления речевых форм, и, в широком смысле – содержания, которое говорящий желает передать другому. В статье рассматриваются примеры обучения лексическому и грамматическому материалу с точки зрения его функциональности в избранном тематическом блоке на примере одной из тем учебника по русскому языку делового общения. Учебник этот в своих предтекстовых и посттекстовых заданиях включает языковые и речевые формы, которые необходимо ввести и закрепить на уроке, а затем воплотить в непосредственном формате того типа дискурса, которому обучаются студенты.

Ключевые слова: лексика, грамматика, обучение русскому языку делового общения, дискурс, учебник