NATIONAL ACADEMY OF SCIENCES OF UKRAINE
Center for Humanitarian of Education of the National Academy of Sciences of Ukraine

01001, мKyiv-1, 4 Tryohsvyatitelska St. ,
tel. (044) 278-30-13, fax 278-87-20

Philosophical education: fostering scientific discourse

ANALYTICAL NOTE
based on the results of work on a research topic
"Scientific discourse:
cognitive and cultural-educational contexts"
(2019-2021)

Kyiv — 2021

FROM THE CONTENT

Introduction part of

Relevance . In modern scientific literature, there is a certain fashion for using the concept of discourse. On the one hand, this is due to the fact that the culture of the modern world is globally communicative, and understanding specific contexts determines the group and stratification boundaries of social interaction . On the other hand, the concept of discourse has a wide range of interpretations from general to congruent with specific theoretical constructs, which complicates its understanding and use in scientific research and allows many authors to define it to their liking. The concept of discourse from Antiquity to the present has gone through a long and controversial path of semantic and philosophical evolution from the usual presentation or story about something to a verbalized way of thinking, representation of a certain ideology or social action. In a certain sense, such evolution represents the cognitive development of world perception, its ontological, epistemological, axiological, hermeneutical , logical-semantic components.

Research complexity The problem is caused by several factors: 1) in the literature, mainly in linguistics and pedagogy, one can often find the use of the concepts "scientific" and "academic" in relation to discourse as synonyms. In a certain sense, this is not quite correct, since "academic" still refers more to the processes of learning, teaching disciplines, and "scientific" - to research and the acquisition of reliable, verified scientific knowledge; 2) one can also find definitions where scientific discourse is "a scientific text as a result of the social action of linguistic and speech, socio-cultural and pragmatic, cognitive and psychological factors" or " a type of discursive activity verbalized in the text in the sphere of communication, speech interaction of representatives of the corresponding social group/institution with the aim of realizing status-role opportunities within the limits set by this social institution, a component of the professional zone of professional discourse itself." In our opinion, such definitions can be satisfactory only in certain contexts, firstly, without narrowing the phenomenon

of scientific discourse to its results (scientific text as a type of specific literary genre), and secondly, to its accompanying constituent features (for example, speech **interaction between scientists).**

achievements of logical positivism, namely the logical analysis of the language of science, are no longer sufficient, although they were productive for their time and retain their significance to this day. It is not enough complete today's there are and such approaches in analysis scientific discourse as linguistic , structural , general-scientific , because they, in separate exceptions , dissolve study scientific discourse and methods its learning in methodology . This conclusion became the basis for the proposed research .

The aim of the study is a comprehensive characterization of scientific discourse. To achieve this aim, the following **tasks** were set :

- characterize different approaches to interpreting the concept of discourse,
- to reveal the main concepts of scientific discourse;
- to distinguish scientific discourse as a special type of discourse, to identify extralinguistic factors of scientific discourse,
- analyze its cognitive dimension and the conditions and possibilities of teaching it,
- to explore the intensional context of scientific discourse,
- outline the prospects for the development of scientific discourse and understand the cultural and educational context of its functioning.

The necessity and novelty of the study are due to the fact that, despite the assurance that discourse should be understood in the unity of its linguistic and extralinguistic factors, it is often analyzed only in the field of linguistic and communicative space. This leads to the fact that *the connection between discourse and thinking disappears from view* , and on the other hand, if we ask the question of how scientific discourse can be taught, then the answer to it will require not only clarification (and explanation) of seemingly understandable and in a certain way interpreted concepts

in the scientific and educational environment (here such as "teaching", "discourse", "scientific discourse", of course, "possibility"), but also an interpretation of the relationship - as factors of discourse - of language and speech to reality.

Therefore, in the study:

For the first time:

- a distinction is made between the concepts of "discourse" and " discursiveness ", understanding the former as a complex linguistic-speech-thought formation transmitted in a manner of speaking, and the latter as a logical-conceptual sequential connection of judgments (statements, reasoning) in their systematicity, validity, and derivation of conclusions (syllogisticity);
- distinguishing between the concepts of "discourse" and " discursiveness ", distinct concepts that describe and explain any discourse (rhetorical, didactic-pedagogical, artistic, religious, philosophical, etc.) such as "order of discourse", "authorship", "addressability", "informativeness", " intertextuality " and, in fact, the concepts of scientific discourse - "problem", "objectivity", " intentionality ", "criticality", "logical consistency", "systematicity", "substantiation", etc.;

Clarified:

- on this basis, the cognitive sphere of scientific discourse as the unity of language, consciousness, and thinking;

- the notion of "concept", "conceptualization", " discourse conceptualization":

Developed by:

- the concept of the " intentional context" of scientific discourse as such, which specifies it as properly scientific and distinguishes it from other types of discourse;
- understanding scientific discourse as an action and event;

- the concepts of discourse practice and discourse formation as paradigmatics of teaching scientific discourse;

- understanding the forms and methods of applying the concepts of scientific discourse - objectivity, problematicity, criticality, intertextuality - in educational practice, primarily in teaching scientific discourse.

The study also traces the historical phases of the formation of theoretical science, which were successively replacing each other cognitive formations: empeiria - technē - epistē mē . Empeiria is experience that is rooted reaches into practice. Under technē understood skill based on knowledge . The purpose of technē is to help do life the best (agriculture , medicine, construction). Special cognitive formation technē does teaching this to art . Historically science-technē becomes a science epistēmē . At the same time, " science-techne " remains *the basis of "* science-epistem ".

Branch application **:** received results can be useful in the following areas: scientific research (primarily social sciences disciplines), educational , social and managerial .

Keywords: discourse, text, context, discursiveness , cognition , rationality, scientific discourse, communication, concepts, methodology, learning, education.

Section I. Cognitive context of scientific discourse

Currently, despite the declaration that discourse should be understood in the unity of its linguistic and extralinguistic factors, it is often analyzed only in the field of linguistic and communicative space. This leads to the fact that, firstly, *the connection between discourse and thinking disappears from reflection* , which already captures one of the meanings of the word " discursus " (Latin) - " *reasoning"* , *"reflection"* , and secondly, the connection between discourse *and the subject of thinking itself is lost* , that is, *its cognitive dimension is significantly narrowed* **.** On the other hand, cognition in the communicative aspect acquires the character sign- symbolic speech acts. These acts appear "from the outside" as the transmission of information (knowledge) from the subject to the addressee (message event), "from the inside" - as speech, hence utterance. In these speech acts, however, the " constancy ", "expressiveness" and "suggestiveness" of judgments are connected, always surpassing each other (M. Popovich). The emphasis in scientific discourse falls on the " constancy " of statements, logically constructed as modus ponens , which is what actually determines its specificity.

Scientific discourse reveals its connection with the text - it is an oral, spoken or written text. In this way, its analysis can be conducted in a communicative-semiotic aspect.

Further in the study attention is drawn to the fact that an essential feature of scientific discourse is *intensional contexts.* In general, it is shown that the context of discourse (Latin contextue - connection, connection) is a situation (event) of a specific reasoning (mental-speech act), an act of communication, when subjects clarify the meaning and objective meaning of terms, statements, speeches, texts. The context of scientific discourse not only determines the specificity of evidential reasoning, but also their deep meaning and connection with the " lifeworld " of a person. This determines such a feature of the development of scientific discourse as its historicity, or its spatio-temporal dimension. Socio-cultural factors change over time and determine the features

of conducting scientific discourse and his teaching methods . Each type of scientific discourse - and in general they are divided according to the modern division of sciences into natural, socio-humanitarian and technical - has the following main properties: *the order of discourse, authorship, addressability , informativeness and intertextuality* .

As for the actual intensional context of scientific discourse, here we must proceed from the fact that before the statement (sentence) in this type of discourse we put the expression: *"X knows that…"*. Such an expression can be considered as *intensional* operator that transforms the meaning of the sub-operator expression into its denotation (M. Popovich). It is also noted that sentences have not only a direct meaning. Considered as speech acts, sentences express not just a literal meaning, but also appear as a certain action, that is, statements about something, questions, orders, warnings, promises, etc. These acts, M. Popovich cites the opinion of J. Austin, have different purposes, therefore it is possible to classify sentences not only from the point of view of truth/falsehood. However, in scientific discourse, sentences (statements) relate to *assertives* or *constatives* - statements of the state of affairs and evaluations of truth/falseness.

So the main thing: *scientific discourse* is impossible outside of discursiveness - it is primarily objective, consistent, systematic and reasoned thinking, mediated by communicative acts that unfold in the linguistic-speech socio-cultural, institutional-scientific and scientific-disciplinary dimensions, but *aimed at ascertaining* reality in statements that are subject to verification of truth. Therefore, it unfolds in a certain culture, and the condition for its continuation, reproduction, and preservation is institutional consolidation in a particular society, permeated with certain *power* relations. Such institutionalization includes, and therefore presupposes, the transmission of its universal form and content from generation to generation, that is, the transmission and reproduction of the professional and disciplinary code by teaching the basic logical-epistemological and methodological principles, concepts, norms and values of science in its distinction from art, religion, morality, law, and philosophy.

As a rule, scientific discourse develops within the boundaries that are conventionally and institutionally defined by the scientific ethos , the foundation for studying which from the standpoint of the sociology of science was laid by Robert Merton .

One of the characteristic features of scientific discourse, the study emphasizes, is " *intertextuality ", which determines: 1)* its retrospective and prospective connection with other precedent texts (therefore, scientific data and previous results); 2) the saturation of scientific texts with quotations, references, etc. But such specificity is derived from the general principles of scientific thinking and the value of objective truth, the tool for implementing which is the discursive-logical validity, demonstrability and reliability of scientific data.

Scientific discourse, as stated in scientific and theoretical exploration, is significantly different from any other contextual discourse (political, religious, ecological, etc.), because through intertextual The set of statements represents, first of all, epistemological thinking with an inherent logical cause-and-effect structure. Scientific discourse, from these positions, is incorrectly identified with academic discourse, however, “academic” itself cannot but exclude scientific discourse, and in the processes of learning and teaching, they interact, although, in fact, “scientific” refers to research and the acquisition of reliable knowledge.

In this context, the question of scientific ethos is relevant . The study argues that scientific ethos is the result of institutionalization values and norms of scientific ethics in the form of formal and informal imperatives, prescriptions, prohibitions, permissions, guidelines, sanctions, etc. Scientific discourse, like scientific ethos , is the result of consensus, but the first is communicative, and the second is moral. Scientific discourse develops within the limits that are conventionally and institutionally defined by the scientific ethos , while the scientific ethos itself was formed by scientific discourse; and transformations of scientific discourse lead to changes in the ethos of science.

The study substantiates that scientific thinking, as modern cogitology approaches it , is not possible outside of language and speech, which are acts (intentions) of consciousness in the communication of people united by joint research activity. In the latter, in addition to the implementation of a certain scientific goal, there is a transfer of disciplinary and interdisciplinary professional codes, and therefore certain professional skills and abilities to use them. The transfer of accumulated experience is essentially practiced, and therefore the inclusion of subjects of scientific activity in a kind of learning process. In the actual educational context, first of all, there is a programmatic inclusion of a scientist in the disciplinary chain of "knowledge-understanding-skills", where each component is structured in accordance with a certain paradigmatics of research and its norms and values. The discourse formed here thus reveals in a cognitive sense the connection between thinking and language and speech, actualizing the question of the way of its existence, and in the cultural and educational context - represents both the socio-institutional unity of education and upbringing, and, based on speech, the cognitive unity of thinking and learning.

Section II . Cultural and educational context of scientific discourse

The educational process at all levels appears as the implementation of a certain socio-humanitarian technology, the basis of which is discourse-communicative practices, based on certain knowledge complexes and scientific disciplines. In teaching, the disclosure of these knowledge complexes involves practical communication, an important role in which is played by the currently operating information intermediary of the transmission and interpretation of knowledge - a teacher or teacher. Therefore, as a model, laid down as the basis for the direct discourse-communicative activity of teachers, lecturers, educators in general, as the implementation of certain technologies, a dialogical form of learning with a "question-answer" structure should be involved.

Education is the creation of wealth (capital) in its symbolic form, which is aimed at the corresponding materialization in culture. This means that education is not only the acquisition of relevant knowledge, but also the formation of skills and abilities as a way of acquiring a certain profession (professionalism), and through them, respectively, a means of implementing scientific knowledge in society. The formation of a professional highly qualified scientist involves, among other components, training in scientific discourse, which plays a key role in the formation of a scientist-intellectual as a person who is responsible to society for his intellectual experience.

Based on the position on the systematicity of discourse in general, in teaching scientific discourse it is necessary to take into account that the scientific type of discourse is a component of the general system of knowledge and has its own constitutive features, which include the goal, means, form of implementation, status equality of participants. Therefore, in order to describe a specific type of discourse, it is necessary to consider such components as participants, chronotope , values, strategies, material, varieties and genres, precedent texts and discursive formulas. Hence, in the training of young scientific personnel and the improvement of the philosophical and methodological culture of scientists, in general, in addition to these, it is necessary to

take into account such related factors of scientific discourse as order, authorship, addressability , informativeness and intertextuality .

presuppositions , depending on the subject . The prerequisite for scientific communication is intentionality , the nature of the impact on the addressee, and the possibility of mastering the semantic continuum of the scientific text by him (the addressee) depends on the author's ability to predict the scope of the addressee's *conceptual sphere* . Hence, the promotion of the teaching of conceptology - conceptual teaching as a critical understanding of scientific concepts, which not only provides informatively, but also discursively problematizes scientific research. On the other hand, the real need for researchers to master the values and norms of communication (conducting polemics, discussions) accepted in the international and domestic scientific community is the key to recognition and successful cooperation, which is impossible without teaching scientific discourse.

The following positions in teaching scientific discourse are distinguished:

- This is conceptual learning – of certain concepts and conceptions in the history of scientific knowledge and in the development of epistemology as a component of philosophy:
- systematic learning in the form of both analysis of philosophical systems and teaching the systematicity of logical thinking;
- rational education as education in scientific reason in its distinction from practical-instrumental, artistic, religious, legal, etc.;
- teaching the art and competencies of reasoning and logical argumentation;
- teaching communicative rationality inherent in scientific discussions, scientific polemics, ethos and ethics of communication within scientific communities;
- teaching scientific discourse in the system of power relations.

In the latter case, the study argues that the concept of discourse practices and discourse formations by M. Foucault is *important* for understanding the specifics of

scientific discourse and teaching it . In the theory of discourse formations, he argued that the tool for mastering the surrounding reality is speech as a speech practice, during which the world is not only mastered, "discussed", but also the rules of this "discussion", the rules of speech itself, and therefore the corresponding mental constructs, are formed.

M. Foucault understood discourse as a set of statements belonging to the same system of formations. At the same time, discourses order reality in a certain way and form a picture of the world. M. Foucault called such specific methods of translating the noumenal into the phenomenal " discursive practices", without distinguishing between discourse and discursivity . For each "discursive practice" its own special methods, ways of expression are developed, the main value categories, prohibitions and permissions, the right of expression are formed. Discursive practice, from the point of view of the thinker, cannot be confused either with empirical operations, with the help of which an individual formulates an idea, image, desire, or with rational activity, which can be performed in a system of conclusions, or with the competence of a linguistic subject when he builds grammatical phrases. This is a set of anonymous historical rules, always defined in time and space, which establish in a certain era and for a certain social, economic, geographical or linguistic space the conditions for the performance of the function of expression .

For M. Foucault, discourse relations are not intrinsic to discourse, they do not connect concepts and words, they do not establish deductive or rhetorical structures between phrases and sentences. But they limit discourse, imposing certain forms on it or forcing it to express certain things in some cases, they are not something external to a given discourse. Such relations characterize not the language used in discourse, not the circumstances in which it unfolds, but the discourse itself, which is understood as "pure practice".

M. Foucault substantiated the idea that in any society the production of discourse is simultaneously controlled, subjected to selection, organized and redistributed with the help of a certain number of procedures, the function of which is to neutralize its power

and the dangers associated with it, to curb the unpredictability of its occurrence, to avoid its so all-powerful, so threatening materiality. The fact that some discourses begin to dominate others is the result of socio-historical processes, some acquire the status of "true", and "truth" is considered as the effect of the action of discursive rules. It is they who act as social controllers and suppress everything that does not correspond to the norms accepted in a certain community. They form evaluative schemes. Therefore, for M. Foucault "Discourse is power that must be seized".

The sphere of scientific activity of a person in society, substantiated in the study, has historically always been perceived as a special sphere, on which the success in the development of human society directly depends. In view of the above, scientific discourse, in general, and scientific text, in particular, as a full-fledged element of this discourse, appear as necessary factors in the formation of the worldview and methodological culture of researchers. The formation of a culture of scientific thinking of researchers in a way that reveals the unity of knowledge, skills and understanding requires the instillation and development of critical thinking skills with reference to the history of philosophy and the history and philosophy of science, logic and methodology of scientific knowledge. Progress in science is impossible without the mastery of scientific and, in general, cultural heritage, without customary (from Latin *usus* - use, application) training, without a kind of training in scientific and research literacy.

It is also necessary to take into account the fact that the effectiveness of teaching scientific discourse largely depends on the general state of education in society, the development of its structures, the availability of highly qualified educational personnel. But to no lesser extent, and perhaps even more, it depends on the state of science and the nature of scientific activity in a particular society, the values and ideals that it professes. *Therefore, it is necessary to clearly realize that both the social institute of science and scientific discourse simply will not be formed in a society whose basic values are incompatible with the specific values of science.* Education and science together form a kind of *educational environment* that should not deviate from the ideals of universal

knowledge, but, laying it as a foundation, contribute to *the personalization* of learning, in particular, by teaching discourses and discourse learning based on concepts and conceptions. And here pedagogical science, psychology, modern cogitology and didactics, and philosophy of education in general face complex problems of a cognitive, value-normative, and communicative nature. Unfortunately, in the conditions of modern Ukraine, the educational environment is a rather amorphous structure with uncertain priorities, the absence of a scientifically sound strategy for the development of education aimed at educating the individual, in particular, *the individual of a scientist* , which is based on a high philosophical and methodological culture of research, and in terms of the ethos and ethics of science - on the understanding of personal responsibility and the need for tolerant discourse in the communication of scientists.

Conclusions and recommendations . Any discourse begins with an unspoken (spoken or written) or stated (spoken or written) *question.* The question in scientific discourse appears as a problem, depends on the context, and ultimately reveals its intertextuality . “ intertextuality ” postulates that any text is always a component of a broad cultural text; it consists in *reproducing* specific other works, earlier ones, through citation, allusion, reminiscence, parody, etc., *imitation* paradigmatic norms and style properties of thinking in problem formulation.

cogitology approaches it , is not possible outside of language and speech, which are acts (intentions) of consciousness in the communication of people united by joint research activity. In the latter, in addition to the implementation of a certain scientific goal, there is a transfer of disciplinary and interdisciplinary professional codes, and therefore certain professional skills and abilities. The transfer of accumulated experience is essentially practiced, and therefore the inclusion of subjects of scientific activity in a kind of learning process. In the actual educational context, first of all, the scientist is programmatically included in the disciplinary chain of "knowledge-understanding-skills", where each component is structured in accordance with a certain paradigmatics of research and its norms and values. The discourse formed here thus reveals in the

cognitive plan the connection of thinking with language and speech, actualizing the question of the way of its existence, and in the cultural-educational one - both the socio-institutional unity of education and upbringing, and the cognitive unity of thinking and learning based on speech.

Based on the position on the systematic nature of discourse as a whole, in teaching scientific discourse it is necessary to take into account that the scientific type of discourse is a component of the general system of knowledge and has its own constitutive features, which include the goal, means, form of implementation, and status equality of participants.

Hence, in the training of young scientific personnel and the improvement of the philosophical and methodological culture of scientists in general, it is necessary to take into account such factors of scientific discourse as the order of discourse, authorship, addressability , informativeness and intertextuality . Scientific communication, carried out through a scientific text, depending on the subject, correlates with the scientific activity of its participants, their scientific knowledge. The prerequisite for scientific communication is intentionality , the nature of the impact on the addressee, and the possibility of mastering the semantic continuum of the scientific text by him (the addressee) depends on the author's ability to foresee the scope of the addressee's conceptual sphere. Hence, the promotion of the teaching of conceptology to the forefront - conceptual learning as a critical understanding of scientific concepts, which not only provides informatively, but also discursively problematizes scientific research.

The real need for researchers to master the values and norms of communication accepted in the international and domestic scientific community is the key to recognition and successful cooperation, which is impossible without teaching scientific discourse.

The problem that almost every Ukrainian scholar of the humanities faces is a large number of low-quality, sometimes pseudoscientific articles published in academic collections, university newsletters, and materials of various scientific conferences. Today, thanks to the spread of information technologies, the problem of borrowing and

plagiarism is pervasive, which is exacerbated by the fact that often the sources of such borrowings themselves are plagiarism or even erroneous. Therefore, the level of errors only increases, and the quality progressively decreases. The situation when the author of an article pays for its printing is destructive in our realities, since it is not the quality of scientific information that is significant, but the amount paid for its printing. Therefore, it is proposed to create regulatory and financial conditions under which scientific publications themselves will pay royalties to authors, but will also require high quality scientific material with an appropriate check for borrowing or plagiarism.

The sphere of human scientific activity in society has always been perceived as a special sphere, on which the success in the development of human society directly depends. In view of the above, scientific discourse, in general, and the scientific text, in particular, as a full-fledged element of this discourse, are considered necessary factors in the formation of the worldview and methodological culture of researchers.

The formation of a culture of scientific thinking among researchers in a way that reveals the unity of knowledge, skills and understanding requires the inculcation and development of critical thinking skills with reference to the history of philosophy and the history and philosophy of science, logic and methodology of scientific knowledge. The object of analysis during the project was

The subject of the study was the concept scientific discourse . The analysis carried out allows make such conclusions :

– proven necessity distinction between the concepts of " discourse " and " discursiveness ";

– it is argued that there are concepts that describe and explain any type of discourse (order of discourse , authorship, addressability , informativeness , intertextuality), and concepts that characterize exactly scientific type of discourse (objectivity , problematic nature , criticality , systematicity , intentionality);

– it is shown that cogitological field of scientific discourse formed at the intersection language-literacy - thinking ;

– revealed the concepts of discourse practice and discourse formation as paradigmatics of teaching scientific discourse;

– a well-founded understanding of the forms and methods of applying the concepts of scientific discourse – objectivity, problematicity, criticality, intertextuality – in educational practice, primarily in teaching scientific discourse.

– it is revealed that teaching scientific discourse is teaching its concepts from the standpoint of systematicity, criticality, and problematicity in accordance with the general historical movement of scientific knowledge in the change of epistemes “ empiricism-"techne-episteme ";

The main results of the study are a rethinking of the cogitological and cultural-educational contexts of scientific discourse in accordance with the modern logic and methodology of scientific cognition. The general methodological and theoretical premise is the understanding of scientific discourse as a text in conjunction with extralinguistic - pragmatic, socio-cultural, psychological, etc. factors - taken in *context events* . This is, in fact, speech, which unfolds as a purposeful *social action* and a factor in the interaction of people and the structures of their consciousness. In other words, and briefly, discourse is speech "immersed in life" (N. Arutyunova). Hence, the interpretation of scientific discourse as *a system of logically grounded judgments that state the reality of the studied reality, checking these judgments for truth/falsehood* . And teaching it is actually a prerequisite for the constitution of scientific discourse - its formation in the minds of students, postgraduates, scientists.

According to the results of a planned study came out with print 34 publications (total volume of 47.6 d.a.) in domestic and foreign scientific periodicals , including 3 monographs . Prepared collective monograph " Philosophical education : training scientific discourse " and two special courses " Knowledge . Understanding . Skills " and "Culture of Scientific research ". Results scientific research works approved performers at 14 scientific conferences and round tables.

Scientific topic leader
Doctor of Philosophy , Associate Professor, Head department
research scientific and educational
methodologies and practices of the Central Scientific Committee of the NAS of Ukraine
Yu.A. Ishchenko