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### Dialogue of Cultures - Culture of Dialogue: from Conflicting to Understanding

# PROFESSIONAL COMMUNICATION IN THE SPHERE OF ECOLOGY - THE CULTURE OF DIALOGUE

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### *Abstract*

The high social value and an urgent need to find solutions to ecological problems enable us to consider the sphere of ecology as a significant component of social practice which embraces all aspects of social life. Information accumulated over the course of longstanding diverse ecology-related activities and research is re-evaluated, generalised and summarised in the form of knowledge. This is exactly what lets us regard the sphere of ecology as an interdisciplinary field of knowledge being established and developed. To address environmental issues, which are viewed as problems of anthropogenic transformation of the environment, it is crucial to not only to acquire ecological information of high quality internalised in the form of knowledge, but also to take into account the nature of professional communication that prompts information circulation. The main purpose of professional communication is that of ensuring coherence and coordination in the efforts of specialists working in various fields (both scientific and humanitarian) and with different industries. These efforts are aimed at solving ecological problems at different levels, including local, regional and global. The global nature of social practice in the sphere of ecology, which involves the whole humanity, entails special requirements for professional communication, which should be regarded as a factor of and the main means for finding ways to address ecological concerns.

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## **1. Introduction**

Knowledge of interconnectedness (species, populations and communities and the environment), of the impact production (both material and non-material) and consumption have on them, and of the nature-oriented social relations are the results of research in the sphere of ecology and an essential component of social practice (Cherkashin & Titov, 2017; Graham & White, 2016; Patterson, 2015). This knowledge exists in the form of conceptualised phenomena and objects, laws, concepts and theories. This is why the sphere of ecology proves an interdisciplinary field of cognition which determines the direction in which society is developing and serves as a key component of social practice. The sphere of ecology considered as a field of cognition regards professional communication as a factor of principal relevance characterised by certain features.

## **2. Problem Statement**

The introduction of ecological knowledge, approaches and values into various fields of social practice promoted the development of interdisciplinary research. Experts from the fields of both science and the humanities, as well as specialists working in all kinds of production, have already contributed to the search for the solutions to ecological problems. It results in the expansion of the concept of ecology as a field of cognition and has changed the circumstances in which professional communication in the sphere of ecology takes place, which is the problem to be tackled in this research.

## **3. Research Questions**

To assess the sphere of ecology as a field of cognition and to create a model of it consisting of interconnected components. These components can be defined using extraction, analysis and differentiation of the data which makes the subject of ecology and environmental protection.

To describe the sphere of ecology as an area in which experts in various fields of science and production (researchers and those involved in practical application of theoretical knowledge) interact; for this purpose, the term of 'professional communication in the sphere of ecology' must be defined, and the context and significance of professional communication aimed at solving the problem of detrimental changes of the environment must be determined.

## **4. Purpose of the Study**

The purpose of this study is to research into the sphere of ecology as a field of cognition aimed at accumulating, generalising and evaluating the knowledge concerning interaction between living systems and the environment, the impact manufactures have on living beings and the environment. Another issue of prominence is that of the social relations related to environment, and as a field of professional communication involving experts in both science and the humanities, as well as specialists working in both material and non-material production.

## 5. Research Methods

A range of theoretical (analysis of literature on the subject in question, drafting) and empirical (observation, and research into the results of study) methods was applied to realize the research.

## 6. Findings

Knowledge of the connections between living systems and the environment, of the impact production and consumption have on them, and of the social relations related to nature (which are presented in the form of conventional notions, laws, principles and concepts of phenomena and objects) are the results of cognitive efforts in the sphere of ecology and a crucial component of human activity. The product of social practice is material and non-material aspects of culture. Knowledge of nature and the environment are an essential part of non-material culture. The use of this knowledge is necessary for the survival and sustainable development of the human civilisation. Individual and collective experience solidified in the form of knowledge in the sphere of ecology as a field of social practice is a prerequisite for, a means and the ultimate outcome of this practice.

This is why it proves reasonable to regard the sphere of ecology as a field of social practice. The content of the latter features the results of studying the interaction between living systems and the environment, the impact of production on living systems and the environment, and the nature-oriented interpersonal and social relations (Bolt, 2017; Carmi, 2017; Stojanovic et al., 2016; Titov et al., 2018).

The concept of ecology as a field of cognition embraces not only an array of the advanced theoretical and empirical knowledge, but also the facts that will be acquired in the course of future research into interaction between living systems and the environment, the way production affects living systems and the environment, as well as social relations related to ecosystems.

The introduction of ecological knowledge, approaches and values into various fields of social practice promoted interdisciplinary research in both sciences and humanities, which blurred the framework in which ecology is regarded as a field of study. Therefore, what is now referred to as ecology is a cohesive system of interrelations between the man and the environment. The concept of ecology as a science without borders was largely driven by the fact that the effectiveness of intradisciplinary ecological research is now predominantly determined by successful interdisciplinary interaction.

In accordance with the current academic paradigm, contemporary ecology can be viewed as an interdisciplinary field of research (cognition), which is only being settled. This stage is characterised by the lack of problem clarity. This is manifested in the quality of scientific problem statements, in their correlation with the structure of scientific knowledge, in possible approaches to research, and in the feasibility evaluation of carrying out such research for the purpose of introducing and developing concepts as part of various fields of study (Mirskij, 1980).

These features typical of an interdisciplinary field of science being developed can be found in the majority of contemporary scientific areas, which emerge in the process of dealing with ecological concerns by interdisciplinary means. These areas can be regarded as fields of science only to some extent. Of all the features of a field of science these areas possess only a kind of an array of new data acquired through interdisciplinary research aimed at highly specific practical tasks.

The wish to incorporate new empirical knowledge, which was received through interdisciplinary research, into the existing scientific paradigm and to form a new field of study out of it leads to attempts to 'devise' new disciplines and 'introduce' new appropriate terms containing the word 'ecology'. The terms 'invented' are designed to define new interdisciplinary fields of study, which at this stage of their development do not possess all of the qualities required of a scientific area.

One of the most striking examples of term confusion is how the mass media use the term 'poor ecology', which functions as a substitute for 'unfavourable environment', 'polluted habitat', 'anthropogenically modified environment', etc.

The development of interdisciplinary research within contemporary science is considered to be one of the most important consequences of the historic change in the social function of science and its direct involvement in addressing the problems that are believed to define the fate of the civilisation. This is very true of ecology, too (Abramo et al., 2018; Leydesdorff et al., 2018; Okamura, 2019; Xuefeng et al., 2017; Zhang et al., 2018).

The sphere of ecology viewed as an interdisciplinary field of research and knowledge is a developing system which consists of interrelated components, which can be identified while differentiating the array of knowledge forming it. The most widely used approach is to contrast research conducted and knowledge accumulated as a result by subject, that is the properties of objects and phenomena of the material and non-material world, at the study of which professional research is aimed. This way, the sphere of ecology can be divided into three interrelated subareas as its components (Hicks et al., 2010).

The subarea of *general ecological research* embraces the results gathered while studying interconnections between living systems (species, populations, communities and the living matter of the biosphere) and their habitat. Knowledge acquired in the course of such research form the theoretical basis for environmental protection, thus providing practical solutions to ecological problems. This area accumulates the results of natural scientific research aimed at the study of the fundamental principles of living systems interconnectedness (species, populations and communities) and their habitat.

The subarea of *applied ecological research* studies the impact of production and consumption on living systems, the environment and human health. Knowledge comprising the subarea reflects the experience in environmental protection, health protection and natural resource management, as well as ensures its development. This subarea represents the results of interdisciplinary research including that of applied areas (military, technical, technological, medical and agricultural) and natural sciences. Such interaction led to the emergence of various types of ecology, such as chemical, industrial and transport, military, urban design, space, medical, island, agricultural and industrial, urban environment, along with videoecology, ecology of protected natural sites, etc.

The subarea of *socioecological research* embraces social relations that are directly or indirectly related to ecology. Knowledge accumulated reflects societal networking that is the prerequisite for acquiring general ecological and applied ecological knowledge. It is gained through the approaches used in social studies and humanities (history, arts, culturology, sociology, psychology, pedagogy, political science, law, economics, etc.).

The bottom line is that the sphere of ecology is a relevant area of social practice, targeted at gaining and interpreting knowledge of interaction between living systems and habitats, of the impact production has on living systems and habitats, and of nature-related personal and social relations.

As a science that is a source of knowledge making up the fundamental basis for interdisciplinary research, contemporary ecology is developing in the context of two processes, namely intradisciplinary differentiation and interdisciplinary integration. These processes also reflect the sphere of ecology developing as a field of study which should be analysed in the context of the interdisciplinary approach (Leigh et al., 2016).

The introduction of ecological knowledge, approaches and values into various fields of social practice promoted the development of concepts in the sphere of ecology as a field of study. Moreover, experts in various fields of science and production involved in the search of solutions to ecological problems advanced interdisciplinary research. Due to this the effectiveness of ecological research is now determined by the breadth and effectiveness of interdisciplinary interaction.

The development of interdisciplinary research in the sphere of ecology has expanded the boundaries of ecology as a field of study and led to the emergence of new applied branches of natural, technical, social sciences and the humanities, and to the reciprocal adoption and development of terminology within various sciences and applied disciplines related to ecological problems.

The driving force and context of these processes is professional communication in the sphere of ecology involving experts in various fields (from both science and the humanities) and both material and non-material production. This communication can be called interdisciplinary.

The main purpose of professional communication is cooperation in the sphere of ecology between experts in various fields of research and production. Moreover, professional communication implies the exchange of ecologically relevant information. The latter includes data collected by professional researchers and specialists who implement theoretical knowledge, which contributes to solution of ecological problems (Davis et al., 2018).

The features of professional communication in the sphere of ecology can be divided into organisational and content-related ones. The source of content diversity of interdisciplinary professional communication in the sphere of ecology is the disciplinary specificity of professional activity and, consequently, professional (disciplinary) disunity of the agents of communication, i.e. those experts in various fields of study and production who contribute to the process of communication. This disunity reflects significant discrepancies of predominantly disciplinary (in science) and industrial (in practice) nature in theoretical principles, concepts, terminology, methodology and, consequently, interpretation of ecologically relevant information.

Content specificity of professional communication in the sphere of ecology is determined by the degree of systematisation of both fundamental and applied knowledge concerning interaction between living systems and the environment, the impact material and non-material production has on living systems and the environment, and finally in regard to social relations related to nature.

A content feature of communication in the sphere of ecology is the conceptual interpretation of ecologically relevant information which is determined by the specific features of professional activity of the agents of communication.

A source of organisational specificity of interdisciplinary professional communication in the sphere of ecology is the special organisational features of science as a branch of non-material production and the organisational features of material one. Organisational specificity of professional communication in the sphere of ecology is determined by the correspondence between the way science and production are organised and the level of technology and social needs.

Organisational features of professional communication in the field of ecology include the following: a) a significant number and diversity of specialists and teams taking part in this communication, that is agents of communication; b) a significant number of levels and nodes of information transfer, all of which put together form a chain, or network, of communication; c) different impact produced by the levels and nodes of information transfer in a chain/network of communication, which is determined by their position in this chain or network between the point of acquisition of initial (primary) information about the state of an ecologically relevant object (event) and the use of this information for the purpose of working towards a particular task after interpretation of this information.

Thus, the transfer of ecologically relevant information in professional communication is affected by: a) organisational features of professional activity realized by the agents of communication; b) disciplinary and industrial features of fundamental and applied knowledge that is used by the agents of communication in their work. Given the high social significance of ecological problems, we can highlight the issue of interpreting ecologically relevant information in the process of professional communication in the sphere of ecology.

A paramount feature of professional communication in the sphere of ecology regardless of disciplinary and industrial orientation of the agents of communication is that this communication must be analysed as a context for the dialogue of cultures and the dialogue of meanings that view the current ecological situation as problematic. It is only this dialogue that adjusts and boosts motivation of the agents of professional communication as agents in the sphere of ecology, which makes this dialogue a key component of professional communication in the field of ecology. Retaining its specificity, professional culture serves as a component of the broader concepts of ethnical, national and universal human culture. This is why the problem of the cultural context in professional communication in the sphere of ecology calls for a thorough research.

Another feature of professional communication in the sphere of ecology, which is just as important, is the dialogic nature of all levels and links in a communication chain/network. This is due to the fact that adding to professional interests, each agent of professional communication in the sphere of ecology has 'universal human values' determined by the high significance and relevance of ecological problems for individual.

## **7. Conclusion**

Ecological knowledge is a prerequisite for survival of humanity and a means of searching for balance between the needs of people and nature, as well as a result of cognition in the sphere of ecology that is of paramount importance. The factor of and the source for the cognitive process is human activity, with its results providing data about the interrelations of living beings (including humans) and elements constituting the environment. To solve an ecological problem, it is important not only to use information about the state

of living beings and the environment acquired in the form of knowledge, but also about its transfer outside the professional community in the process of professional communication. This ensures coherence in the efforts of specialists in science and humanities together with various fields of material and non-material production.

The sphere of ecology as a field of cognition, aimed at research into the properties of living beings and habitats, anthropogenic impact on them, personal and social interactions related to nature, is a system that comprises functionally and structurally interrelated components, namely subareas of research and knowledge accumulated through such research. To differentiate spheres of ecology as fields of cognition we have applied the disciplinary and interdisciplinary approaches. Interdisciplinary approach revealed problematic areas in the sphere of ecology, which were differentiated by their object/phenomenon serving as the subject of interdisciplinary research.

The development of interdisciplinary research in the sphere of ecology has expanded the boundaries of ecology as a field of cognition and, in particular, led to adopting and expanding terminology across various sciences and applied studies related to ecology. The driving force and context for these processes is interdisciplinary professional communication in the sphere of ecology, the main purpose of which is to coordinate professional activity in the sphere of ecology which involves specialists in various fields of science and production, while its content is the result of ecologically relevant information exchange.

The crucial feature of professional communication in the sphere of ecology is that this communication takes place in the context of a dialogue of cultures, which reflects the interpretation of the current ecological situation as personally and socially significant. The dialogic nature of all levels and links in a chain/network of communication is just as important a feature of professional communication in the sphere of ecology, which is determined by the significance and relevance of ecological problems for individual.

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