



Milena Palczewska¹

The essence of interdisciplinary research

Abstract

The categories of interdisciplinarity, as well as the similar categories of multidisciplinary and transdisciplinarity, are relatively young language resources, although in many scientific disciplines are already quite weak (especially in the humanities), in the other, however, (in the social sciences), it seems that is only just emerging. This article will be devoted to this issue, with particular focus on the analysis of interdisciplinarity as a key to broad, multi-faceted research.

The postulate of interdisciplinarity is, in a sense, a response to the challenges arising in the process of the development of science. First, as a response to the internal discourse on science – the crisis expressed in the progressive professionalization, specialization and institutionalisation of research. Secondly, as a response to the challenges faced in learning, in view of the fact that reality, its nature and structure, are becoming more complex and thus more difficult for scientific exploration. Interdisciplinarity means to focus attention on issues that are located at the intersection of the different disciplines. In this way, an attempt is made to break free from the narrow, deep single-discipline approach to complex issues and the many ensuing restrictions.

Generally, interdisciplinarity, as demands reality across scientific disciplines, is, in a sense, added value. This is due to the fact that an overview of the test of reality from the perspective of the various branches of scientific broadens, deepens, modifies and clarifies the research results, which science is certainly beneficial.

Key words: social sciences, methods of research, interdisciplinarity, multidisciplinary.

Introduction

The postulate of interdisciplinarity is, in a sense, a response to the challenges arising from the process of the development of science. First, as a response to the internal discourse on science – the crisis expressed in

¹ Dr Milena Palczewska, Wydział Wojskowy, Akademia Sztuki Wojennej, al. gen. Antoniego Chruściela „Montera” 103, 00-910 Warszawa, e-mail: m.palczewska@akademia.mil.pl

the progressive professionalization, specialization and institutionalisation of research. Secondly, as a response to the challenges faced in learning, in view of the fact that reality, its nature and structure are becoming more complex and thus more difficult for scientific exploration. Interdisciplinarity in this context means to focus attention on issues that are located at the intersection of different disciplines.

The *aim* of this article is to recognize the definition of interdisciplinary approach and characterize elements that can be used to conduct interdisciplinary research. Therefore, the following questions were considered as *research problems*: Should the interdisciplinary approach be used in scientific research? What advantages does an interdisciplinary approach bring to the innovation of scientific research? Therefore, the *hypothesis* that requires resolution is the assumption that interdisciplinarity tried to break free from the narrow, deep approach within a single discipline to complex issues and face up to many limitations. It was thought that interdisciplinarity is a response to the challenges arising from the complexity of the network and links to many important social problems. No single discipline currently has a chance to tackle these problems.

Materials and Methods

The category interdisciplinarity is ambiguous and a split defined. It is opposed by the disciplinary approach, whereby interdisciplinarity is defined as multidisciplinary (integrated) while disciplinarity as monodisciplinarity. Interdisciplinarity is often used as a collective name for the term phenomena research in many scientific disciplines and goes beyond one discipline. This phenomenon occurs in learning in different versions and can be referred to as transdisciplinarity, also encouraging multidisciplinary or pluridisciplinarity. In order to diversify the individual version of the multidisciplinary a note their nomenclature shall be made. There are a variety of related design meanings listed deadlines (postulates of meaning) (Kozłowski 2017). The broadly used term Interdisciplinarity shall be used through the article, although it is not always used as a blanket term for different varieties of multidisciplinary. For the record, interdisciplinarity is often regarded as one of the varieties of multidisciplinary next to its other varieties, as also encouraging pluridisciplinarity or transdisciplinarity (Repko 2008: 13–15).

Quite a common occurrence that does not require persuasion, especially in scientific research, is the fact that one science uses a second, that uses its achievements, or that one discipline is in a function in the

service of another. This situation, in which the first discipline (basic) is the second (as a learning guide), which uses its methods and achieved its results with the aim of a better understanding of subject, without the intent of the handle to the real dialogue and mutual cooperation between disciplines, is the most common in the practice of science. This is the phenomenon of a unidirectional communication between the researchers.

It is precisely this understanding which are the most contemporary when we talk about those issues which are of interest to us. However, the described case actually refers to multidisciplinary (also known sometimes transdisciplinarity), and applies to these relationships between disciplines, in which knowledge of one discipline is used by the other, by this the last of its own purposes. Furthermore, that so encouragingly understood multidisciplinary/multidisciplinary nature, is not yet interdisciplinary, although it may be close to its home.

A major role in the ongoing debate over the importance of interdisciplinary research or transdisciplinarity is played by integration. In the context of Interdisciplinarity, integration is a process as a result of which the synthesis, combining ideas, data and information, methods, tools, concepts and/or theory of two or more disciplines occurs. Researchers commonly understand interdisciplinary as any form of dialogue or interaction between two or more disciplines, while minimizing the whole role of the integration (Cresswell 1994).

Interdisciplinarity takes place when two, three, or even more disciplines, come together in a mutual relationship, and it is not sufficient to simply make use of their knowledge (as in the case of multidisciplinary/transdisciplinarity), but when real dialogue between disciplines occurs, or a genuine mutual exchange of information between the various researchers takes place before investigating the problem. This requires bringing and confronting their own, usually different, points of view and the mutual effort of their integration, with – quite importantly – a clear awareness of their own research, and their mutual indispensability in the understanding of a particular issue, or the complexity of the surrounding reality, and it is therefore necessary to adopt an approach, which we can define as a co-existing with other approaches (with approaches other disciplines) within the framework of mutual cooperation, which is truly interdisciplinary (Nowak 2010: 4).

The word *interdisciplinarity* consists of two parts: the prefix *inter-* and adjective, *disciplinary*. The prefix *inter* – in Latin origin means: between, among, while the adjective, *disciplinary* means here: linked to the scientific discipline. The meaning of both words retain their validity in the case of the word interdisciplinary, located between the disci-

plines, at the same site which none of the individual disciplines itself cover, and at the same time creates a common research area of two or more disciplines.

Constitutive elements of interdisciplinary studies are:

- “processed nature of the research,
- the existence of disciplines or specialized areas of knowledge, that represent the disciplinary perspective or way to approach the problem,
- integration of the results obtained in the various disciplines,
- fuller (integrated/integral and targeted) understanding or the development of cognition as the target” (Walczak 2016: 15).

The term *interdisciplinarity*, to briefly sort out historical facts – began to function in a variety of environments starting from the 1960/70s (Lyotard 1997: 145–146). It first appeared as a key word especially in educational projects, and gradually more and more often in scientific and institutional projects. The influence of the idea of interdisciplinarity had such a significant presence in interdisciplinary studies in American comparatistic studies the 1960s that the comparatists begins to be convinced of the existence – paradoxically – of a threat to the future of this kind of research and new educational programs. In the Greene Report from the year 1975 (Bernheimer 1995: 36) indicates a possible danger (also its scale), such as a lack of methodological rigor reflecting laxity.

The situation in the seventies well illustrated the 1973 comments of Georges Gusdorf, who wrote in the *Encyclopaedia Universalis* not only about the fashion for interdisciplinarity (more specifically: the cognition of the cross), but also about the form of the existence of the particular snobbery among researchers (Gusdorf 1973: 1086). In fact the problem was met with various attempts to implement and justify in the perspective of the different research disciplines, hence – according to the conclusion of Julie Thompson Klein, in her book *Interdisciplinarity. History, Theory, and Practice* (1990) – interdisciplinarity is defined at the age of twenty, inter alia as a methodology, concept, process, way of thinking, philosophy. If one gives in to the temptation here for a more general application, one would need simply to conclude that in the context of the possibilities for learning essentially two sources of interdisciplinarity are important, namely cognition of the subject and study of the subject. As the specific action of interpretation, interdisciplinarity should be understood both as a result of the pressure of the investigator (their openness to the thought and creativity of leading in practice to new research solutions), as well as the effect of pressure on the same external reality, with its entire liquidity and the dynamics of cultural phenomena.

The position of the investigator plays a particularly important role – the criterion of symptoms enables one to extract the interdisciplinarity of the directly-related issues, such as transdisciplinarity. And it is worth indicating that there also appear a variety of alternative concepts of interdisciplinarity which encourage multidisciplinary, transdisciplinarity and a-disciplinarity. Well, in the case of interdisciplinarity, more specifically: interdisciplinary methods, today it would not be a simple summation of the accomplishments of the representatives of the different fields involved, the willful rule of integration and the desire to achieve a synthesis of knowledge, but all individually made to confront its own discipline to another (or others). This type of confrontation leads to new diagnoses, raises new questions and identifies previously unknown research purposes. In other words, interdisciplinarity understood not according to the quantitative criterion, but qualitative is used in current conditions and develops with the self-awareness of the investigator, and – ultimately – leads to the continuous evolution of the discipline.

According to A. Repko interdisciplinarity contains the following elements:

- cross-disciplinary research is of particular importance, because it goes beyond the bounds of the disciplines,
- interdisciplinary studies field extends beyond the one disciplinary perspective,
- a distinctive feature of the interdisciplinary research is focusing on the problem or question,
- interdisciplinary research is characterized by a process or way to study,
- disciplines provide knowledge about a specific, substantive point of view on interdisciplinary studies,
- interdisciplinary studies are aimed at integration,
- the purpose of the interdisciplinary research process is pragmatically: creation of cognitive progress in the form of a new understanding, a new product or a new meaning (Repko 2017).

There are two dominant forms of interdisciplinarity: instrumental interdisciplinarity and critical interdisciplinarity. Instrumental interdisciplinarity is focused on a specific issue. This is a pragmatic approach focused on research, analysis and practical solution of problems in response to the needs of a society. However, the same parsing is not sufficient for instrumental interdisciplinarity, it must be complemented by integration. In the case of the instrumental interdisciplinarity, it is necessary to achieve the greatest possible integration, taking into account the currently available data from a variety of disciplines. In turn, critical

interdisciplinarity is based on the society. Analysis of the dominant structure of the knowledge and education leads to its transformation by raising political and epistemological issues of values and purpose. The distinctions between instrumental and critical interdisciplinarity are not absolute and cannot be inviolable. Research on such systems and complex problems like environmental cleanup or war and armed conflicts often reflect a combination of instrumental and critical approaches.

It should also be stressed that most works within a discipline can readily be classified in terms of phenomena, theory, and method. For example, a book on the sociology of culture could be classified in terms of the particular cultural elements studied and the theories and methods applied (Szostak 2014).

Results

Interdisciplinary research is a type of study in which a single scientist or team of scientists integrates information, data, techniques, tools, perspectives, concepts and/or theories from two or more disciplines or scientific specialties, in order to achieve progress in the basic understanding or solving of problems whose solutions are not covered by a single discipline or area of practice. Interdisciplinarity has become a slogan in scientific debates and has been recognized by many organizations involved in the funding of research in Europe and the United States as an important factor in future research. This happened despite the fact that there is no single accepted definition of interdisciplinarity, and the term is sometimes used interchangeably with multidisciplinary and transdisciplinarity.

The primary difference between these manifestations research, that beyond the discipline is the extent to which scientists strive for integrated or synthetic (disciplinary) observations. Interdisciplinary research literally means the study disciplines relating to the interaction of disciplines with each other. Such interaction may differ from the same communication and compare ideas, through the exchange of data, methods, and procedures for mutual integration, defining the concepts, theories, methodologies and epistemological policy. In multidisciplinary studies, the test subject is also analyzed from different angles, using various disciplinary perspectives. However, they are in this case are not integrated, nor do they have theoretical perspective, or different disciplines. Finally, transdisciplinary studies also include actors from outside the University (e.g. companies, corporations), thus allowing the integration of academic

knowledge and non-academic or experimental. Therefore, in this article the following will be assumed (fig. 1.1):

- multidisciplinary studies are studies involving more than one discipline, but without their inclusion. The results of involved disciplines are compared, and the conclusions drawn are from each of the individual disciplines, but there is no disciplinary integration of applications;
- interdisciplinary research is research in which theories and/or methods from a variety of academic disciplines are integrated into the correct concepts, as well as the results or views on the discipline;
- transdisciplinary research arises when scientists work with stakeholders outside the academic world. Knowledge outside the academic world, as well as the values of the stakeholders are integrated with scientific knowledge. Together, these remarks indicate what the problem is and how it is done and what action has been taken in order to resolve the problem.

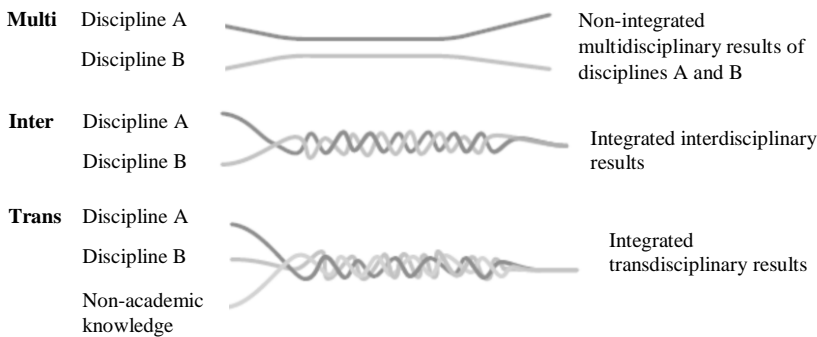


Figure. 1.1. Multidisciplinarity, interdisciplinarity and transdisciplinarity

Wykres 1.1. Multidyscyplinarność, interdyscyplinarność, transdyscyplinarność

Source: own based on: S. Menken, M. Keestra (ed.), *An interdisciplinary research. Theory and practice*, Amsterdam University Press, Amsterdam 2016, p. 32.

One of the main advantages of interdisciplinary studies is that it allows researchers freedom from disciplinary restrictions. Equally, the discipline itself may derive strength from the common perspective that contains many items: a common set of topics that are addressed, the joint, but the limited set of theories and methods that are used (and often a common set of assumptions about what they are), a common set of assumptions about the epistemology of what is known and how often the ethical assumptions as to what is “good” are shared, and often differ in ideological attitudes. “Interdisciplinary scientists” respect the ability of

specialised studies, but are always aware that they have a lot of flaws. A strong motivation to comply with disciplinary preference theory, methods, and objects of research means that “disciplinary scientists” must ignore competing theories or methods, as well as ignore the related phenomena, which could cast doubt upon the important issues raised in their discipline. Similarly, many of the issues that are examined can be arbitrarily limited due to theoretical or methodological preferences.

Interdisciplinarity must therefore include the freedom to study any theory, method or a phenomenon that scientists believe to be appropriate for the research problem. This can be considered a basic, fundamental principle of interdisciplinary research. Because most known research methodologies in university studies are those disciplinary methods that effectively limit the field of freedom of research, some “interdisciplinary scientists”, of course, are concerned that any proposed, interdisciplinary research process will inevitably undermine their freedom. If so, interdisciplinarity may not perform its intended function as an antidote to a strict disciplinary perspective. The idea of interdisciplinary research process naturally should resemble one of the disciplinary methodologies as to whether the common methodology improves the performance of the research or not. As mentioned earlier, they increase (unfortunately limited) communication within the disciplines.

Scientists can easily explain to another investigator with their discipline what innovations they try to incorporate into a common research plan. Disciplinary standards are closely related to disciplinary methods. It is expected that economists use mathematical models and/or statistical analysis. Of course, economists assess their mastery and application of sophisticated mathematical techniques (they are easier to evaluate than the understanding of the economy *per se*). Researchers only within a single discipline, with formal standards (but disciplinized), can too easily disregard the open examples of interdisciplinarity, and then conclude that interdisciplinarity is inherently worse. Furthermore, some interdisciplinary researchers may hesitate to publicize their research standards in detail because they do not want to restrict freedom.

It should also be added that many researchers do not take the risk of combining research in several disciplines due to concerns about the accusation of mixing methodologies, and yet using the achievements of several disciplines determines the adoption of various research methods (Matera 2013: 6).

At the moment in the history of science, most scholars who qualify as interdisciplinary researchers just make “interdisciplinarity”. It was not the courses on interdisciplinarity. One may never have read an article or

a book focused on the idea of interdisciplinarity. Importantly, researchers never reflected on this too much on their interdisciplinary research. Most researchers of interdisciplinarity hold doctorates. Even people with doctorates from interdisciplinary programs rarely have experience in training materials about interdisciplinarity: perhaps of a certain theme of interdisciplinarity (e.g. environmental studies, gender studies or cognitive science), but that is not interdisciplinarity in and of itself.

Repko has formulated the process of interdisciplinary research – which can be highlighted in the following steps (Repko 2008):

1. Ask a question or consolidate question.
2. Justify the use of an interdisciplinary approach.
3. Determine the appropriate disciplines.
4. Perform analysis of literature.
5. Justify the appropriateness of the use of each of the disciplines.
6. Analyze the problem and evaluate any changes or new insights.
7. Identify conflicts between the theories of various disciplines and their sources.
8. Create or discover common ground.
9. Integrate insights.
10. Consolidate the interdisciplinary understanding of the problem and formulate proposals.

The above-presented process can be divided into several series of steps, that can be taken during its implementation. The first steps involve determining the interdisciplinary research questions. The second set of steps leads a researcher to identify the relevant phenomena, theories, methods and disciplines. The third step requires an evaluation of disciplinary insights. The fourth set of steps is focused on finding common ground in the disciplinary findings. The final stages require reflection, formulation and testing results.

Repko has formulated a joint interdisciplinary approach check if your will question identifies the appropriate discipline, and then search for the appropriate information. It also points out an alternative approach in which an interdisciplinary researcher first identifies the appropriate types and methods of the theory, and then follows them to determine the appropriate disciplines. These approaches are quite separate, and at the same time lead to an appreciation of different approaches within the framework of their disciplinary contexts. Similarly, various strategies evaluate disciplinary insights, integrate, and then specify a common ground. With regard to evaluation, Repko discusses the assessment of applied theory, methods, deals with the phenomenon, the data used, the epistemological assumptions, the relationship between insight and per-

spective, and the potential prejudice. When it comes to building a common foundation for interdisciplinary, Repko first examines the various critical thinking strategies identified by cognitive scientists, suggesting a few broad techniques to achieve common ground: redefinition (semantic correction of terms or assumptions); extension (the theoretical idea in a new domain); organization (identification of hidden similarities in various fields and specifying their bonds); transformation (noticing the difference type, as well as degree of differences). Each of these strategies can be useful in some circumstances, but not necessarily in others.

Also important is the question of the selection of the interdisciplinary team of investigators who will deal with the problem. The effectiveness of interdisciplinary teams is very diverse. The size of the team depends on a number of factors (although the optimal size ultimately depends on the project): uniformity of team members in various aspects of the social dimension (homogeneity encourages conversation, but restricts innovation); the personality of the leaders in matters relating to the team (though currently there is a lack of conformity in terms of the optimal features); additionally, the personality of the team members (openness, flexibility, methodological and willingness to sacrifice time to listening to seem to be important). When it comes to the actual process of research, there is also a need to develop a common conceptual framework, which integrates and extends beyond the multiple disciplinary perspectives represented among the individual team members (Salter; Hearn 1996).

Interdisciplinary research, carried out by a group of professionals, representing different disciplines, centered on a particular research topic, can produce interesting results. However, one needs to take into account the diversity of methodological approaches – the participants of the research groups should be provided with a basic understanding of the analytical tools of other sciences, represented by other members of the research team. Therefore, it is essential that the interdisciplinary research takes place through the forces of teams consisting of specialists poorly versed in the current state of research of their own discipline and, crucially, open to partner treatment by representatives of other sciences. Equally important is having, however, even basic, reactive knowledge of methods and research workshops.

The organization of interdisciplinary teams' strategies, and its interactions with the public should be developed by the interdisciplinary researchers: some interdisciplinary projects may require one or both of these actions. Identification of research questions, the relevant theory and methods, the problems associated with them, the practices that ap-

pear to be effective, and testing policies and procedures that can be useful at different stages of the process of the research (Bammer 2017) is important. Interdisciplinary research is based not only on the specialized studies of the individual disciplines, but also informs (not just about the questions, but about relevant phenomena, theories and methods). One of the main obstacles to interdisciplinarity is that scientists just don't know where to look for the right information. In the specifics of the project this means that apparently more attention should be paid to search for literature than usual in the case of specialized research. Interdisciplinary researchers should not, however, lose sight of the broader purpose of suggestions as to how the research process can be better organised.

In transdisciplinary research, not only academic researchers from different disciplines are involved but also non-academic participants enter the stage. Transdisciplinary research aims to integrate academic and non-academic knowledge in order to be better able to conduct research on real world problems and to create new knowledge and theories which can be used to improve the present state of affairs (Didde 2014).

Interdisciplinary research are motivated mostly by social problems, scientists typically want to generate both scientific contributions, and practical solutions. These are two completely different types of effects, which require different types of integration. University researchers may be most interested in integration at the level of theory and methods. The creators of the practical solutions will work for the integration of a wide variety of practical proposals. Of course the first stage of integration should support the second. However, very few interdisciplinary research projects manage to achieve in both cases (Szostak 2018).

Davis and Shaw (Davis, Shaw 2011: 31–32) list five types of information which are needed in interdisciplinary studies. The first is procedural (how to do it?). For the interdisciplinary researcher this will include understanding the many theories and methods. The second is a matter of substance. Here interdisciplinary scientists desire to find out what has already been said and researched about specific phenomena and relationships. The third-mixed, where the explorers are not sure what to look for. It is common in interdisciplinary practice, because a researcher cannot in advance know what useful information might exist in other disciplines. The fourth type is the reliability. An interdisciplinary researcher will be especially curious if similar causal arguments have been carried out in different areas and what were the evidence. The fifth issue is education: a researcher might not find comprehensive information and needs further resources to understand the process, phenomenon. One of the key sources of misunderstanding is unclear terminology – its classification can reduce ambiguity.

Discussion

Interdisciplinary research in practice is focused on the issue in question. This means that an interdisciplinary project can solve a complex social issue, such as urban poverty, aimed at the analysis of all the relevant causal links (in isolation and interaction), as well as using all the relevant theories and methods. Of course, no research project may be aimed at an exhaustive justification in all these aspects, and therefore even interdisciplinary analysis may be incomplete. The integration strategy, however, can potentially be used in all of the studies, by combining all available data and specifying the areas in which additional studies are needed. An interdisciplinary approach can therefore give a consistent understanding of how the world works in full: there is often a simple understanding contained within a single, closed theory, but complex understanding occurs where various theories shed light on different (probably overlapping) elements of the problem. Therefore, interdisciplinary research calls for the integration of different theories, as well as the various methods and disciplinary perspectives. In this way, partial observations of different backgrounds of scholars (and insights from outside the university) can connect in a more accurate and comprehensive analysis of all complex issues or topics.

The most commonly discussed aspects of interdisciplinarity and transdisciplinarity include: organizational and institutional, methodological, epistemological, ontological, and educational approach (Michalski 2007: 90–92):

1. Interdisciplinarity and transdisciplinarity in research studies organize compliance. In science there is a division of labour, disciplinary institutionalisation dominates both in research and in teaching. Policy in the field of science and research, creation and liquidation of research and educational institutions, the salaries and institutional factors that materially determine the research practice. The organizational aspect of interdisciplinary research has primarily two variables: the degree of organization and organizational culture, and the conjunction of the cognitive disciplines (the scope and how the integration of the involved disciplines).
2. One of the key questions of the methodology of science is: how to arrive at knowledge and cognition? How locate interdisciplinarity against the background of classic distinctions on empirical and hermeneutic methods, explaining and understanding natural sciences and humanities? Inter- and transdisciplinary approach to research is not only possible, but also highly productive, for example, in learning about the environment, it studies the effects of technology research on sustainable development.

3. Epistemologic axis of the interdisciplinary approach is an attempt to answer the question, is there a special type of interdisciplinary knowledge, scientific truth, which differs from the pure disciplinary knowledge types?
4. The ontological problem of interdisciplinary research (subject) is related to the question of the possible existence of objects, areas and structures of reality, which, of necessity, elude the traditional disciplinary research network and require a separate interdisciplinary approach.
5. The educational aspect of interdisciplinarity is the least disputed dimension of the problem. The notion of interdisciplinarity was shaped originally in the context of education research and innovation, led in the early 1970s by the OECD. Interdisciplinarity issues relate primarily to the sphere of education and organizational concepts of teaching.

The primary difficulties to be overcome on the way to interdisciplinarity and transdisciplinarity are:

- the heterogeneity of the concepts – the same terms are understood differently on the basis of different disciplines,
- the development of a conceptual framework in relation to transdisciplinary or multidisciplinary perspectives (there are eligible aspects within a transdisciplinary research, which are not reasonable or superfluous in comparison with the disciplinary research),
- in the majority of interdisciplinary research projects are issues present socially, most such needs are the driving force in the field of research.

Conclusions

Interdisciplinarity and multidisciplinary as a new model of organization and structuring knowledge, now enjoy a very good economic climate. They are a political priority of modern societies in the field of research, and are increasingly skilled in journalism. The Ministry of Science, to financially support research software, has declared their affection for interdisciplinary projects, introducing interdisciplinarity to the evaluation criteria proposals in competitions of grants. Many research institutions found interdisciplinarity for the main feature of their own identity, even special interdisciplinary research centers, for example the Interdisciplinary Research Centre in Cracow.

Generally, interdisciplinarity, as is demanded by the current reality across scientific disciplines, is, in a sense, added value. This is due to the fact that an overview of the test of reality from the perspective of the various branches of scientific broadens, deepens, modifies and

clarifies the research results, which science is certainly beneficial (Klein 1990).

In the way of further research the following aspects are also required:

- whether the goal is to provide interdisciplinary knowledge for the benefit of other sciences, and create resonance in different scientific disciplines (both in the field of research and education)?
- is it possible to form a multidisciplinary language, define the role of the language, concepts, and ensure translations from one discipline to the other?
- when can we say confirm that the issue is interdisciplinary?
- specify the form objects for interdisciplinary studies,
- identify the differences of the interdisciplinary scientific and disciplinary non-scientific knowledge and the ratio of interdisciplinary research to traditional scientific disciplines.

We can discuss interdisciplinarity only in an interdisciplinary way, which means in an interdisciplinary group. However, it requires a good awareness of the methodological disciplinary partners in such a discussion – a strong sense of the identity of the represented disciplines, awareness of their methodological limitations, weaknesses, and constituent suppositions, and high culture, especially openness to the counter and readiness to review its position. Interdisciplinary and transdisciplinary approaches can thrive only on a foundation of strong disciplinary research, otherwise there is a danger that under the guise of interdisciplinarity will be boomed scientific dilettantism and disciplinary erosion.

Reference List

- Bammer G., 2017, *Integration and Implementation Sciences: Building a New Specialization*, <https://www.ecologyandsociety.org/vol10/iss2/art6/> (accessed: 31.07.2017).
- Creswell J., 1994, *Research Design: Qualitative and Quantitative Approaches*, London.
- Davis C., Shaw D., 2011. *Introduction to information science and technology*, ASIST Monograph Series, Medford.
- Didde R., 2014, *Challenges and successes in interdisciplinary and transdisciplinary research and education*, http://www.sense.nl/gfx_content/documents/Wimek%20Experiences.pdf (accessed: 12.05.2018).
- Gusdorf G., 1973, *Interdisciplinaire (connaissance)* [in:] *Encyclopedia Universalis*, vol. 8, Paris.
- Klein J.T., 1990, *Interdisciplinarity*, Wayne State University Press, Detroit.
- Kozłowski J., *Narodziny i rozwój dyscyplin naukowych*, <http://kbn.icm.edu.pl/pub/kbn/sn/archiwum/9601/kozlow.html>, (accessed: 21.06.2017).

- Lytard J.F., 1997, *Kondycja ponowoczesna. Raport o stanie wiedzy*, Fundacja Aletheia, Warsaw, Foundation Aletheia. p. 145–146.
- Matera R., 2013, *Wybrane argumenty na rzecz interdyscyplinarności badań na styku nauk ekonomicznych i politycznych*, „Polityka i Społeczeństwo”, nr 4(11).
- Michalski K., 2007, *Interdyscyplinarność, transdyscyplinarność, multidyscyplinarność, nowy paradygmat w nauce i badaniach*, „Zeszyty Naukowe Politechniki Rzeszowskiej” 2007, Ekonomia i Nauki Humanistyczne, nr 235.
- Nowak M., 2010, *Dialog interdyscyplinarny i jego modele w uprawianiu pedagogiki*, „Rozprawy Społeczne” 2010, nr I(IV).
- Repko A., 2017, *Defining Interdisciplinary Studies*, https://www.sagepub.com/sites/default/files/upm-binaries/43242_1.pdf (accessed: 08.08.2017.).
- Repko A., 2008, *Interdisciplinary research: process and theory*, University of Texas, Arlington.
- Repko A.F., 2008, *Interdisciplinary research: process and theory*, Sage Publications Inc, Los Angeles.
- Salter L., Hearn A., 1996, *Outside the lines: issues in interdisciplinary research*, McGill-Queen's University Press, Montreal.
- Szostak R., 2014, *Interdisciplinarity and the Classification of Scholarly Documents by Phenomena, Theories, and Methods*, http://www.iskoiberico.org/wp-content/uploads/2014/09/469-478_Szostak.pdf (accessed: 12.05.2018).
- Szostak R., 2018, *The Interdisciplinary Research Process*, <https://pl.scribd.com/document/339670351/Szostak-r-the-Intersdispnarity-Research-Process>, (accessed: 12.03.2018).
- Walczak M., 2016, *Czy możliwa jest wiedza interdyscyplinarna?*, „Zagadnienia Naukoznawstwa” 2016, nr 1(207).
- The Greene Report* [in:] *Comparative Literature in the Age of Multiculturalism*, ed. Ch. Bernheimer, Baltimore–London 1995.

Istota badań interdyscyplinarnych

Streszczenie

Kategoria interdyscyplinarności (znana też w języku polskim jako międzydyscyplinarności), podobnie jak zbliżona do niej kategoria multidyscyplinarności (inaczej też wielodyscyplinarności), jak również transdyscyplinarności, stanowi stosunkowo młody zasób językowy. Chociaż w wielu gałęziach nauki (zwłaszcza w humanistyce) jest już dość utrwalaony, w innych jednakże (w tym w naukach społecznych) wydaje się dopiero wyłaniającym się obszarem. Tej właśnie problematyce poświęcony jest ten artykuł, ze szczególnym ukierunkowaniem na interdyscyplinarność jako „klucz” do wieloaspektowych, szerokich w wymiarze badań naukowych.

Postulat interdyscyplinarności jest, w pewnym sensie, reakcją na wyzwania rodzące się wraz z rozwojem nauki: po pierwsze, jako odpowiedź na dyskurs wewnętrzny o kryzysie nauki – na kryzys wyrażający się w postępującej profesjonalizacji, specjalizacji oraz instytucjonalizacji w zakresie badań naukowych; po drugie, jako odpowiedź na wyzwania stojące przed nauką w związku z tym, że rzeczywistość w swym charakterze i strukturze staje się coraz bardziej złożona i tym samym trudniejsza do naukowej eksploracji. Interdyscyplinarność oznacza skoncentrowanie

uwagi na zagadnieniach, które są zlokalizowane na styku różnych dyscyplin. W ten sposób próbowano uwolnić się od wąskiego, ugruntowanego w ramach jednej dziedziny wiedzy, podejścia do złożonych kwestii oraz wynikających z tego faktu wielu ograniczeń.

Generalnie interdyscyplinarność jako postulat badania rzeczywistości ponad granicami dyscyplin naukowych stanowi w pewnym sensie wartość dodaną, ponieważ ogląd badanej rzeczywistości z perspektywy różnych gałęzi naukowych poszerza, pogłębia, modyfikuje i precyzuje rezultaty badawcze, co dla nauki jest niewątpliwie korzystne.

Słowa kluczowe: nauki społeczne, metody badawcze, interdyscyplinarność, transdyscyplinarność