Conceptual Approaches To The Study Of The Phenomenon Of Spatial Inequality on the example of Russian education

Концептуальные подходы к изучению феномена пространственного неравенства на примере российского образования

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Аннотация

Специфической особенностью России является ее географическая протяженность и разнообразие социально-демографических и экономических контекстов, которые уже сами по себе связаны с образовательными результатами и возможностями учащихся. Однако существующие исследования неравенства в образовании часто не учитывают пространственный контекст. Такие серьезные пространственные различия создают риски недооценки их значимости, что ставит ряд вызовов перед исследователями и политиками в сфере образования.

В рамках данной работы были выделены два концептуальных подхода к пониманию пространственного неравенства, которые по-разному отвечают вопрос о том, сводится ли оно к социально-экономическим различиям между территориями. Значительная часть существующих исследований образовательного неравенства выполнена в духе, если не в букве «географии возможностей», в рамках которой пространственное неравенство является географическим измерением социальной сегрегации. Этот подход подразумевает, что в силу исторически сложившегося неравномерного распределения экономического капитала в пространстве география становится значимым фактором, который ограничивает возможности учащихся в плане доступа к образовательным ресурсам, выборе траектории и образовательных достижений. Однако при этом не учитывается более сложная социальная иерархия пространства, которая описана в работах Бурдье и его последователей. Этот второй подход открывает перспективы для изучения символического статуса пространства, а также пространственного капитала индивидов, организаций и самих территорий.

Проанализированные подходы закладывают основу для выявления смещений в оценках неравенства в российском образовании и в принятии политических мер и решений. Также показаны возможности операционализации данных подходов для переноса их в сферу российского образования.

Ключевые слова: пространственные различия, неравенство в образовании, образовательные результаты, образовательные возможности, география возможностей, пространственный капитал.

Annotation

A distinctive feature of Russia is its geographical scale and the diversity of socio-demographic and economic contexts, which in themselves are associated with educational outcomes and student opportunities. However, existing research on educational inequality often does not adequately address the spatial context. Such significant spatial differences create risks of underestimation of their importance, which poses a number of challenges for researchers and policymakers in the field

of education. The purpose of this work is to analyze the existing conceptual approaches to the study of spatial inequality in Russian education.
In this paper there were distinguished two conceptual approaches to understanding spatial inequality, which answer differently the question of whether it comes to socio-economic differences between territories. Much of the existing research on educational inequality in Russia follows the spirit, if not the letter, of "geography of opportunity," in which spatial inequality is the geographic dimension of social segregation. This approach implies that due to the historically uneven distribution of economic capital in space, geography is becoming a significant factor that limits students' opportunities in terms of access to educational resources, choice of trajectory and educational achievement. However, this does not take into account the more complex social hierarchy of space, which is described in the works of Bourdieu and his followers. This second approach opens up prospects for studying the symbolic status of space, as well as the spatial capital of individuals, organizations, and the territories themselves.
The approaches described in this article introduce new opportunities for educational researchers and pose a number of challenges for educational policy in Russia. This paper also shows the possibilities of operationalizing this concepts concept for transferring it to the field of education.
Key words: spatial differences, inequality in education, educational outcomes, educational opportunities, geography of opportunities, spatial capital.

Introduction

One of the unique features of Russia is the diversity of its territorial contexts. These are not only natural and geographical differences, but also social, economic, demographic, and cultural contrasts. The magnitude of these differences is such that they exceed cross-country differences. For example, in 2015, in terms of the level of economic development, Russian regions differed by 17 times. According to the World Bank report, in terms of GRP per capita in purchasing power parity, Sakhalin Oblast is comparable to Singapore, Tyumen Oblast and Chukotka - with the UAE and Hong Kong, and Karachay-Cherkessia and Ingushetia - with Myanmar and Honduras [World Bank 2018]. An even more striking contrast is associated with linguistic diversity, as a result of which the share of the Russian-speaking population in Russian regions varies from 1% to 100% [Smirnova, Smirnov 2010].
Significant spatial differences are also present in Russian education. For example, it has been shown that Russian regions differ significantly in educational infrastructure [Zair-Bek, Belikov, Mertsalova 2016] and families' access to preschool and extra-curricular education [Agranovich 2016; Barinov et al. 2015]. In addition, due to regional coefficients, the difference in teachers' salaries and the volume of school per capita funding can reach several times [Derkachev 2014; Abankina et al. 2016]. Finally, spatial inequality is also observed in the students' academic results: for example, in 2015 the average Unified State Exam scores in the Russian language differed by 1.6 times, in profile mathematics - 1.4 times [Zakharov, Adamovich 2020]. And the data of the latest cycle of the international research PISA[1] indicate that regional differences in the reading literacy of students are comparable to 2.4 years of study, in mathematical literacy - with 1.6 years of study [Adamovich et al. 2019].
However, these and many other studies concern only individual manifestations of spatial inequality and are not supported by a theoretical base or a unified conceptual framework. For example, space can be viewed as a factor in access to education - through transport accessibility or distance [Konstantinovsky et al. 2006; Abankina, Filatova 2018], or as a factor in educational achievement - through the level of urbanization of the territory [Yastrebov et al. 2013; Kuzmina, Tyumeneva, 2011]. On the other hand, such works are often carried out in terms of educational inequality and do not consider the spatial nature of the analyzed data [for example, Barinov, Belikov, Polyakova 2016]. Finally, in some works, spatial inequality is reduced to socio-economic - for example, as

[1] https://www.oecd.org/pisa/

differences in the level of urbanization of the territory [Bogdanov, Malik, 2020]. At the same time, sociological theories of inequality have been developed in neighboring branches of science that study spatial differences (geography and urban studies), and this experience may be of particular interest to researchers of inequality in education.

The aim of this paper is to analyze the existing conceptual approaches to the study of spatial inequality and identify directions for their transfer to the field of education research. This paper highlights the following question: does spatial inequality exist as an independent phenomenon, or is space only a geographic dimension of socio-economic inequality?

This work may be of interest to researchers of education not only in Russia, but also in many other countries that are distinguished by a significant geographic extent, a complex administrative-territorial structure and/or territorial variability of the educational system.

Materials and methods

The subject of research in this article is spatial inequality which in sociology is traditionally defined as *an unequal distribution of goods between territories* [Israel, Frenkel 2018]. At the first stage of the study, an aspect analysis of existing theoretical works on spatial inequality was carried out using the documentary research methodology by G. McCulloch [McCulloch 2004]. The aspects of spatial inequality identified at this stage made it possible to single out two key conceptual approaches to defining and studying spatial inequality that are used in educational research.

The first approach is the concept of the geography of opportunity, introduced by the American geographer and urbanist Edward Soja, which was then developed by Ruth López-Turley and Nicholas Hillman. In this approach, spatial inequality is viewed as the geographic dimension of social segregation.

The second approach is the space concept of the French sociologist Pierre Bourdieu, which was further developed in the works of the French school of geographers and urbanists (Jacques Lévy, Michel Lusseault). In the concept of Bourdieu and his followers, spatial inequality is not reduced to socio-economic differences, although it is associated with them, and is considered as an independent phenomenon.

At the second stage, considering the aspects highlighted earlier, empirical studies of spatial inequality which have already tried to transfer these approaches to education were analyzed.

Results

The conceptual approaches described in this paper have been formed in parallel on both sides of the Atlantic. Academic dialogue between representatives from different schools, American and French, has been conducted for several decades. In this article, we will omit historical details and chronology for reasons of brevity, and only present the main positions for which significant differences are observed.

Spatial inequality in education as a geographic dimension of social segregation

A seminal work for this conceptual approach has become the book ‘Explanation in geography’ [Harvey 1969] by geographer David Harvey. In it, Harvey draws attention to the geographical nature of inequality and to the fact that historically, economic capital in the Marxist understanding has always been unequally accumulated in space. Moreover, without geographical expansion, spatial reorganization and uneven geographical development, capitalism, as a political and economic system, could not exist [Harvey, Braun 1996]. Thus, the present unequal distribution of capital in space, Harvey formulates, is a phenomenon that has its own historical and civilizational origins, and which cannot be overcome at the current stage of development. Moreover, it lays the preconditions for the further growth of spatial segregation [Harvey 2001]. In the modern world, where the main global market economy is competition, such an uneven distribution of capital can increase, and lead not only to socio-economic segregation of individuals, but also to further uneven economic development of territories - both countries and regions within countries.

Such an approach gave impetus to the development of the concept of "geography of opportunities", in which the inhabitants of some territories take advantage of the accumulated capital, get more opportunities for further development and augmentation of this capital than the inhabitants of less advantaged territories. However, the mechanisms of this development and multiplication can be different.

For example, the American geographer Edward Soja continues Harvey's line and views spatial inequality ("spatiality") as a geographic form of class segregation. However, the change in spatial inequality, according to Soja, is associated with political measures and decisions. On the one hand, the current political measures support the existing segregation of space, since they are adopted within the paradigm of control over existing forms of material life ("competitive struggle to control the forces which shape material life" [Soja 2013: 159]). On the other hand, political decisions made without considering spatial inequality only exacerbate it (for example, opening a university campus, which would reduce unemployment and increase the availability of education in a disadvantaged area, usually takes place in a prestigious area, where there are fewer such problems anyway) [Soja 2013].

Geography often becomes a blind spot not only for politicians, but also for researchers, including in the field of education. This gap was highlighted by Ruth López Turley in her research on the educational trajectories of American students [Turley 2009]. She drew attention to the fact that the traditional approach to the study of predictors of educational trajectory choice does not consider place of residence as a significant characteristic, despite the fact that it is which determines the student's access to resources, including educational ones. As such a resource, Turley considers the college proximity to the student's place of residence and identifies two mechanisms by which this can affect the educational opportunities of the student. The first mechanism presumes that college proximity might ease the student's enrollment in college in terms of logistics, finance and even emotions. The second mechanism has to do with educational aspirations. It is assumed that the territorial accessibility of colleges can increase the predisposition to enrollment of school graduates [Turley 2009: 127-130].

The idea of the geography of opportunities is also developed in the works of Nicholas Hillman, where he, using the example of college infrastructure in the United States, shows the inequality of access to education in terms of "deserts" and "oases" [Hillman 2016]. His analysis shows that "educational deserts" are more common in areas where there are more people of ethnic minorities or lower socio-economic status. As a result, the educational opportunities of students from such "educational deserts" are limited not only by their own capabilities and preferences, but also by the infrastructural barriers of the educational environment. Thus, ignoring the spatial dimensions of educational opportunity leads not only to overlooking some of the underlying origins of inequality, but also to the failure of attempts to provide a detailed explanation of how and why students opt for a certain college [Hillman, Boland 2018].

Within the framework of this approach, researchers consider the geographical aspects of not only educational trajectories, but also the academic results of students. For example, the American sociologist Vincent Roscigno examines spatial inequality of performance of US students in terms of the difference in resources of both students' families and schools, between inner cities, suburbs and rural areas. Roscigno and his colleagues distinguish primary and secondary effects from living in more developed territories: firstly, these are direct positive effects of the availability of significant resources, and secondly, these are indirect effects of investment of these resources in children's education [Roscigno, Tomaskovic-Devey, Crowley 2006]. In other words, decisions on investments in children's education depend not only on the available resources, but also on the availability of education, the local labor market, and historically formed ideas about the effectiveness of such investments.

Empirical studies within the framework of this approach were carried out in Russia as well. For example, the type of settlement and differences in the level of urbanization turned out to be significant predictors for the choice of educational trajectories [Bogdanov, Malik 2020; Francesconi, Slonimczyk, Yurko 2019], students' science literacy [Kryst, Kotok, Bodovski 2015],

and the Unified State Exam scores [Zakharov, Adamovich 2020]. However, when reading these and similar studies, the question inevitably arises: how good are the indicators, such as the level of urbanization and proximity (for example, proximity to a regional center, as in the work of Francesconi et al [Francesconi, Slonimczyk, Yurko 2019]), for estimating geographic differences? How valid are these constructs as operands of spatial inequality? The work performed within the framework of a different approach to understanding space will help to answer this question.

Spatial capital and the symbolic status of space

The impetus for the development of this approach to understanding spatial inequality was the work of the French sociologist Pierre Bourdieu, who developed the concept of capital and identified such forms as, for example, cultural and social capital [Bourdieu 1984]. It is worth noting that Bourdieu's contributions to the study of spatial differences unfairly received less attention in this area. This is partly due to the fact that the sociospatial concept occupies a relatively small place in his work compared to other concepts.

Thus, Bourdieu describes space not so much through the prism of geography as through its social hierarchy. The position of the individual in this hierarchy is determined not by the social class itself, but by the different capital that an individual possesses. Use of various forms of capital - economic (financial assets and cash income), cultural (education, knowledge, moral and aesthetic values) and social capital (social networks and relationships) - allows a person to receive social benefits [Bourdieu 1984]. Space is also a "field", a kind of social arena in which these forms of capital are played out.

Interpretation of space in Bourdieu's works is also anthropological in nature. He assumes that space is socially structured in such a way that the most valuable or prestigious resources are located in special zones (in the Russian context, for example, this might be the "red corner" where an icon is placed in a peasant hut). In his work "The Weight of the World: Social Suffering in Contemporary Society" [Bourdieu 1999], Bourdieu identifies two interrelated concepts: *site* (physical place, location in space) and *localization* (position, place in the hierarchy):

«Site is the point in physical space where an agent or a thing is situated, "takes place," exists: that is to say, either as a localization or, from a relational viewpoint, as a position, a rank in an order. <…> In the most diverse contexts, the structure of social space shows up as spatial oppositions, with the inhabited (or appropriated) space functioning as a sort of spontaneous symbolization of social space. There is no space in a hierarchized society that is not itself hierarchized and that does not express hierarchies and social distances. <…> The result is a concentration of the rarest goods and their owners in certain sites of physical space». [Bourdieu 1999:123-125].

Like Harvey, Bourdieu assumes the existence of an uneven structure of space, where the most prestigious and demanded resources are concentrated in some areas, while there are shortages in others. People who live in areas where the concentration of demanded resources, prestigious goods and services is higher, can use them to maintain and further improve their social and economic status. Conversely, economically disadvantaged areas tend to further deteriorate the quality of life of their inhabitants. However, Bourdieu develops this idea and says that as a result of these processes, the symbolic status of space is formed - for example, when a decrease in the quality of life of the inhabitants of the area leads to its stigmatization or "pathologizing". Thus, space affects not only the material, but also the symbolic status of individuals - for example, it is the symbolic status of a ghetto resident, a suburbanite, or even specific areas and districts. Moreover, even such a symbolic space in Bourdieu's understanding has material and non-material boundaries, which include some groups of people and exclude others, increasing the inequality between them. At the same time, no one can occupy two opposite positions in the social space at once, just as he cannot simultaneously be in two different geographical points.

Bourdieu's ideas were continued in the works of another French researcher, geographer and urbanist Jacques Lévy. Continuing the Bourdieu tradition, Lévy describes space in terms of capital, and defines spatial capital as "all resources accumulated by an actor enabling him or her to benefit, according to their strategy, from using society's spatial dimension" [Lévy, Lussault 2003]. In other

words, spatial capital is a collection of resources accumulated by an individual, which allow him to interact with place and space and use the spatial structure of society to obtain benefits.
Possession of spatial capital implies the ability to quickly access a particular type of resource (or a certain amount of resources). From this point of view, urban dwellers have large spatial capital, both due to the accumulation of various resources in the urban area, and in terms of the speed of access to them due to the developed infrastructure.
Lévy develops the concepts of site and localization by Bourdieu, highlighting two components of spatial capital: *positional capital* and *situational capital* [Lévy 1994]. Positional capital determines the value of a position, a place that an individual occupies in space (the place where a person's house or office is located). Lévy gives the following example: in the conditions of the geographical limitedness of the city, space can also be a rare commodity and be an object of competition (the “golden mile” in New York, Ostozhenka street in Moscow). Situational capital determines the area of space available to an individual through the distance that he can cover using all types of mobility [Lévy 1994: 95]. Mobility, on the other hand, can be a tool to compensate for the lack of positional capital.
There is much less empirical research in education carried out within the framework of this approach, however, some is available. These papers show that the sociospatial concept of Bourdieu can be extended and not only applied to describe a separate place (dwelling, house), but also to characterize entire territories, without expanding or changing its original interpretation [Soja 2013]. For example, it has been shown that the symbolic status of a space matters in the choice of school by households [Yoon, Lubienski, Lee 2018]. In another work, a visualization of the social space of Helsinki schools was made, and an analysis of educational opportunities and restrictions that the hierarchy of this space imposed on the families of the city, was carried out [Kosunen 2016].
Attempts were also made to operationalize positional and situational capital in education in relation to the students’ opportunities. [Séchet, Veschambre 2006; Barthon, Monfroy 2010]. These papers showed that positional capital, expressed through living in advantaged and disadvantaged areas of the city, is itself associated with access to educational resources and is superimposed on socio-economic differences, exacerbating them. Moreover, the direct effect of the socio-economic context on the students’ school choice turned out to be lower than expected after controlling spatial characteristics.
However, these and some other studies investigate spatial inequality only in terms of educational opportunities, and do not focus on the effects of the social hierarchy of space on student learning outcomes. Also, as far as we know, the sociospatial concept of Bourdieu is practically not considered in Russian studies of education. Perspectives and opportunities for operationalizing this concept will be proposed in the next section.

Discussion

This paper shows how important it is to take into account the spatial component in research on educational opportunities and student outcomes. This is consistent with Hillman’s thesis that geography shapes educational opportunities of students [Hillman 2016; Hillman, Boland 2018], including Russian ones. The effects of the spatial component can overlap and exacerbate existing socio-economic differences. However, existing studies often ignore the space or take it into account insufficiently - for example, only through the level of urbanization. At the same time, the social hierarchy of space remains outside the focus of research. Further empirical research is needed to show the magnitude of the corresponding bias in the estimates.
The conceptual approaches analyzed in this paper open up new opportunities for studying and understanding the mechanisms of spatial inequality. Thus, we could argue that Bourdieu's ideas about the symbolic status of space are of most importance for understanding the educational trajectories of Russian students - how the choice of school, college or university is made [Bourdieu 1984; Bourdieu 1999]. As we have mentioned above, the concept of Lévy's spatial capital can be used in the analysis of educational mobility of students, where, for example, living near the source

of educational resources (educational organization) can be regarded as positional capital, and physical mobility and transport accessibility can be considered as situational capital. Prospects are also opening up for research on spatial capital not only of students and their families, but also the educational organizations themselves, as well as the relationship between them. Of particular interest are studies of student learning outcomes and the contribution of spatial capital and the symbolic status of space to their explanation.

Considering the results of aspect analysis of existing research, recommendations for further research were formulated. In the case of small countries, where spatial differences are not so significant, it may be appropriate to use the first approach by Harvey, Soja and Hillman, where socio-economic segregation comes to the fore. Many empirical works, including those on Russian data, were carried out in line with this approach. However, in large and contrasting countries, underestimating the spatial component can have more serious consequences. In such situations, Bourdieu's sociospatial concept appears to be a more appropriate conceptual framework, since it allows one to consider the social hierarchy of space, which is superimposed on existing differences in capitals.

The results obtained are important for educational policymaking. Here we could agree with Soja that "decisions made without taking spatial inequality into account only exacerbate it" [Soja 2013]. Thus, it should be retained that the symbolic status of a space can introduce biases in the resource allocation, decision-making on the opening of new educational organizations, making recommendations, choosing territories for innovations' approbation, as well as determining objects of targeted support, etc. On the other hand, spatial effects can manifest themselves indirectly. For example, the spatial capital of a university can determine its availability for certain types of applicants, which, in turn, affects the numbers and quality of admission - and these indicators are an important component for decisions on measures of state support and regulation of universities.

Thus, future empirical studies carried out in line with the described conceptual approaches seems to be especially relevant in the context of Russia as a large multi-component country, as well as other countries differing in geographic scale and variety of contexts.

Conclusion

These results of aspect analysis provide two alternative conceptual approaches for research and policy-making in Russian education.

In the first approach, the concept of the geography of opportunity, introduced by the Edward Soja, socio-economic segregation overlaps existing spatial differences. The aspect analysis of existing papers shows that is approach is more suitable for research in small countries where internal socio-economic differences are not so large, due to the risk of estimation biases. Most of research in education in Russia are done under this approach, and it's hard to estimate the effect of spatial component there because of its limited operationalization.

The second approach is the sociospatial concept of the French sociologist Pierre Bourdieu, where spatial inequality is not reduced to socio-economic differences, and both these types of inequality could interact with each other. Our analysis demonstrate that this approach is a more appropriate conceptual framework for analysis of large and contrasting countries, providing new possibilities of operationalizing space in education context. Future research is required to estimate the exact sizes of spatial effects underestimated.

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