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Prospects for Rhizomatic Education at USA and Russian Schools

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Abstract

The relevance of rhizomatic learning as a research problem is associated with the increasing role of the postmodernism philosophy. The philosophy of postmodernism, responding to the spirit of the modern era, leaves its imprint on many processes taking place in modern society, including the transformation in the sphere of education. To vividly present the impact of post-modernistic ideas on the formation and development of the rhizomatic model of education, the authors discuss the goals and content of education in alternative schools in the American and Russian schools.

The purpose of the paper is to identify the role and prospects for the development of rhizomatic education in schools in the United States and Russia. The leading approach in this work is a comparative analysis of education systems of the two countries. Rhizomatic learning, in our understanding, is the creation of a polymorphic educational environment based on the principle of network learning, which includes a constant construction, a plurality of interaction subjects, which is characterized by a non-structural and non-linear way of organizing the educational space. The rhizomatic model of learning set a certain coordinate system which began to trace the following characteristics of postmodern education: a multivariate style of learning; multiplicity of choice, connectivity and heterogeneity of parts as a whole; cartography; environment becoming cultural; decentralization of learning; anti-binarism or rejection of binary. The authors' analysis of rhizomatic education in alternative schools in the United States allows us to consider rhizomatic education in Russian schools, its current state and prospects.

Keywords: rhizomatic learning, postmodernism, education, alternative schools.

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Introduction

For more than 30 years, leading scientists and educators in the United States have been studying the manifestation of postmodern ideas in education. Slattery (2013) writes about curriculum development in the Postmodern Era. Jacobs & Kritsonis (2006) describe national strategies for implementing postmodernism in the US education. Kincheloe & Steinberg (1999) dedicate their research to tentative description of post-formal thinking. In Russia, the consideration of education through the postmodernism prism began later and is only understood at the theoretical level. Volkov (2015) pays attention to the narrative problems; Dmitriev (n.d.) states about the theory of school education content in the USA; Ivanova and Bokova (2017) underline that postmodern ideas' influence on education. Ivanova and Elkina (2016) describe postmodernism and the quality of education. This worldview and philosophical phenomenon are not fully taken into account in education and pedagogical science. The category of "rhizomatic learning" is closely related to the concept of rhizome as one of the main concepts of postmodernism, introduced by Deleuze and Guattari (1987).

Rhizomatic learning creates an educational environment based on the principle of network learning, which includes constant construction, multiplicity of interacting subjects, replacing the traditional category of "structure" with a non-structural and non-linear way of organizing the educational space, leaving the possibility for immanent mobility (Cormier, 2008). Taking into account this principle of interaction allows us to see education as a complex dynamic process, the purpose of which is to show the student the way of knowledge, to form an interdisciplinary vision of the world, instead of filling his/her mind with specific knowledge and skills. For Cormier (2008), a rhizome acts as a metaphor for the knowledge that we get in the process of learning. According to this metaphor, any knowledge has no prevailing, mandatory centre or predetermined boundaries. On the contrary, any knowledge (for example, knowledge of mathematics) consists of actually independent parts, each of which can be delved into without reference to other directions of the subject.

The fundamental principle of rhizomatic learning is "community as curriculum". This means that topics for study as well as study formats are chosen spontaneously, based on the experience of people who have gathered to learn together.

Purpose and objectives of the study

The study set to prove the development of the ideas of rhizomatic education as a special educational space and multicomponent system as one of the leading directions in postmodern education in the US and Russian schools.

Literature review

The issue of the influence of various philosophical and pedagogical concepts and views on education in the United States in 20-21st centuries has been constantly studied by American scientists: the role of postmodernism in US education (Jacobs & Kritsonis, 2006); postmodernism as a philosophical trend in the USA (Kincheloe & Steinberg, 1999); the influence of postmodernism ideas on the construction of curricula in US schools (Slattery, 2013); features of rhizomatic education (Cormier, 2008).

Some foreign scientists devoted a number of works to the phenomenon of alternative education in the USA (Bifulco & Ladd, 2006; Davis & Raymond, 2012); history, analysis of alternative education in the USA, its main characteristics, content, and methods (Aronson, 1995), (Booker, Sass, Gill, & Zimmer, 2011); the idea of choice in education (Young, 1990; Raywid, 1994; Hoxby & Murarka, 2008; Zimmer & Engberg, 2013).

Methodology

The research methods are the comparative method (used when analyzing the theoretical foundations of American educational strategies); the historical and comparative analysis of secondary education in the United States; the conceptual analysis of postmodern strategies' implementation in mass and alternative schools in the United States, generalization, systematization and classification of information.

Theoretical framework of the research is presented by the following conceptual theories:

- philosophical foundations of postmodernism (Deleuze, & Guattari, 1987);
- reflection of postmodernism ideas in pedagogical science (Doll, 2012);
- analysis of rhizomatic learning (Ivanova & Elkina, 2016; Ivanova & Bokova, 2017);
- conceptual foundations for creating alternative schools in the United States (Young, 1990; Valeeva, Vafina, & Bulatbayeva, 2016).

Results

Based on the author's analysis of postmodernism as a philosophical trend, we have identified key principles that are reflected in the rhizomatic educational model both in alternative schools in the United States and in Russian schools. The American educational system, built primarily on the analytical philosophical tradition, in the second half of the 21st century, accepted the ideas of polycontextuality, de-hierarchization

of reality, and denial of the educational process rationalization quite warily. However, the rejection of rationalism as an outdated model of classical structures organization created a favorable ground for postmodern ideas spread in the American pedagogy on the example of alternative schools or schools of choice. The paper by Valeeva et al. (2016) is dedicated to alternative education in which they conduct comparative study of the American, Russian and Kazakhstan experience. Alternative schools in our work are voucher, charter and magnet schools.

In the context of rhizomatic learning, poly-variance is represented by a number of certain types of programs, forms, time and place of learning. It is important to note that from a didactic point of view, it is possible to "train" thinking at the junction of different language zones – different disciplines – only in conditions of poly-variability. By mastering the content of subjects, the student learns to think discursively, see the context of learning and simultaneously acquire learning skills. In other words, education becomes a structural identification of a person in the society, an indicator of socially significant skills, because they are the result of personal free choice.

The obvious advantage of all types of alternative schools in the United States is that parents have the right to decide which school their children will go to, regardless of their income level. The program demonstrates the content of the knowledge that each student will receive as an opportunity to study subjects that go beyond the state school system. The school voucher system allows parents to find schools that match their personal values in life, so that children could get an education based on the subjects that matter to them. Charter and magnet schools allow parents of low-income families to choose the best school that uses a different curriculum, the latest digital technologies, different teaching staff, and a schedule that is tailored to their needs. Students get this chance through a lottery or a charter (voucher). Poly-variance is also shown in relation to school time. For example, many charter schools have historically used their freedom to set budgets and staff curriculum to increase school hours beyond the 6.5 hours per day and 180 days of the school year traditional for public schools.

In Russian schools, poly-variability is represented by the choice of an individual educational route (in accordance with the transition to the Federal State Educational System). New FSES that school are to accept since 2020/2021 academic year suggests that in the senior school, only some of the subjects will be obligatory: Mathematics, Russian language and literature, Foreign language, History (or "Russia in the world"), Life safety, and Physical education. Students can choose three or four more courses at their own discretion, but in such a way that they can study no more than 37 hours a week at the budget expense (currently the state pays for 36 hours). All subjects are divided into two levels – basic and specialized, for in-depth study. As noted by Asmolov (2013), an academician of the Russian Academy of Education, "the

new standard embodies the idea of variable education, when each student is looking for an individual path of development. Previously, the student had to reproduce the knowledge received at school from memory, now he/she will have to think, and not just remember”.

The following characteristic of rhizomatic learning is the multiplicity of choice, connectivity and heterogeneity of the parts as a whole, which is closely connected with poly-variance. The unique feature of magnet schools in the United States is that they usually have a specialized curriculum. Schools are schools of choice and subjects can be chosen there. Despite the fact that schools may have a general focus, students still study a full range of subjects. Each subject is adjusted according to local, state, or national learning standards (they are uniform), but each subject is taught within the school's theme. More often, schools with in-depth study of subjects resort to practices based on scientific research or research work. Each magnet school makes up a specialized thematic program for the curriculum implementation. Standards complicate the process of differentiating schools, since some schools did not initially accept the unified curriculum standards. The goal of these schools is to maintain their own distinctive features, while offering the same content with high standards. Moreover, magnet schools themselves not only form a poly-variative environment, but they are also located in this environment, so they are closely connected with existing state standards, and with private business communities, as well as actively cooperate with cultural objects (museums, for example). The presence of an extensive variable academic program, which indicates the coherence and heterogeneity of parts into one whole, is evident in charter schools. Currently, a special place is occupied by online learning technology. These approaches can be implemented in charter schools due to the right for free distribution of funds and increased learning time compared to traditional schools.

In addition to the profile education in high schools, in Russian schools, multiplicity of choice, connectivity and heterogeneity are associated with the creation of specialized classes specializing in natural science, engineering, socio-economic, humanitarian, artistic, aesthetic, and other areas. They let the students choose elective courses and classes in economics, psychology, programming, computer graphics, robotics, and etc.; they also provide career specialization: cadet, medical, law classes.

Cartography as another feature is presented by constant changes in the educational process at all alternative schools: curriculum, lesson content, and etc. A lot of freedom in the alternative schools seems to be in the choice of teaching methods, evidence of a postmodern emphasis on event design of the educational process that takes into account the real needs and requests of the student. For example, there are many Montessori schools across the country based on an educational model that admits children's natural curiosity and desire to learn. This model creates a learning environment in which students become active members of the educational process. Such unique approaches to learning are often found in magnet schools, as well as

Paideia method used in them – a method of active learning developed in 1980 by M. Adler. It involves engaging students in "Socratic seminars" to improve their intellectual skills and acquire new information by participating in discussions. A narrow and individualized learning environment in charter schools corresponds to deconstruction that ensures that learning is focused on a specific environment (a group of individuals who are subjects of this environment).

Cartography in Russian schools can be traced, first of all, as the individualization of education, which consists in an individual approach to each student, where there are no strict universal requirements for school projects that can be presented in various forms (Bokova & Malakhova, 2019). Most textbooks contain an excessive amount of material and the teacher, in accordance with his/her goals and preferences, can choose the appropriate educational material to study in each particular class. Homework assignments can be presented in the form of a brochure, presentation, and etc.

The next characteristic of rhizomatic learning is its decentralization, which involves the active inclusion of additional subjects in the educational process. Thus, magnet schools can boast of greater involvement of parents and community organizations, greater individualization through training based on a specific topic and specialized programs, which creates a spirit of unified community and leads to a more favorable atmosphere for the educational process implementation. Teachers are qualified in the areas taught and have a narrow specialization through training based on the subject of learning and professional development. Charter schools indirectly offer a radical approach to decentralizing education management that allows private schools to become self-governing, and also practice interaction between parents, teachers, and students, which creates an environment in which parents become more active, teachers get informed for decision-making, and students receive the most favorable learning environment. This makes it possible for the entire team to adhere to a single goal, which includes improving students' achievement, strengthening school responsibility, and creating a learning environment that is most appropriate for each student.

In Russian schools, decentralization manifests itself as self-government and the active inclusion of additional participants into the educational process: parents, public organizations, business communities, and cultural objects. In addition to these processes, schools are given a certain freedom of choice on a number of organizational issues. For example, in the context of distance education, schools are free to choose educational platforms for the educational process implementation, deadlines for the end of the school year, and deadlines for passing All-Russian Tests.

Anti-binarism or the rejection of binarism implies a change in the perception of the teacher only as an authority. The teacher becomes an active participant in the learning process, a trainee, a creator of his/her

own natural forms of learning. All this is impossible without strict requirements for the teacher's qualification, which are actively set in charter schools. Authorization, subsidies and equipment as well as the staff are important for all types of alternative schools; effective teaching is the key to students' success.

In the modern Russian school, we also observe a refusal from the traditional "subject-object" opposition "teacher-student", where the teacher has the exclusive right for knowledge, and the student is content with the passive role of the perceiving object of knowledge. A modern schoolchild is often as well-informed as a teacher in matters of politics, international relations, psychology, and computer science. He/she has almost unlimited access to information and the time when the teacher had knowledge and was a unique source of information has disappeared forever. With the advent of social networks, the teacher's communication with students has come out beyond the school, the distance between children and the teacher has been almost erased and the perception of the teacher as a "creature of highest order" disappeared. The dialogue is built almost on equal terms, there was a natural transition from monological to dialogical and polylogical forms of communication.

The characteristics of rhizomatic learning also relate to the inclusion of a variety of subjects that make differences and at the same time function as a single whole by the principle of "unity in diversity". Charter schools not only believe in the ability of all students to learn and achieve success, but also prove it. Even disadvantaged children, once in a specialized environment created for them, show impressive results in the educational field. In addition, charter schools have developed special child-rearing programs for the population of disadvantaged areas, thanks to which not only children but also their parents are taught.

It is important to note that to improve the quality of education in charter schools, there is an additional assessment, which gives education a poly-contextual character, increases the objectivity of assessments. In addition to participating in state testing, which is mandatory for all charters, many schools have agreed to introduce additional systems of assessments and measurements that can clearly demonstrate the high level of student's knowledge. Therefore, while being tested, participants could either choose an answer from the proposed ones, or add their own if they did not find a suitable one. This approach reflects a key postmodernism emphasis on the destruction of pre-set, objective, hierarchical structures. In this sense, the teacher should not follow pre-established forms of lesson preparation, since formality objectifies the learning process, turning it into a pre-set, frozen structure. However, learning is a game and language process, to a certain extent, spontaneous, but created and controlled by a teacher who not only educates and gives knowledge, but also learns at the same time.

Home schooling provides a condition for continuous access to education in order to maintain a stable, dynamic educational environment. Alternative (charter, voucher, and magnet) schools cover geographically wide territories and often use distance-learning technology to expand their "attendance zone". Families are home-schooled for various reasons: religious, practical (for example, disability), pedagogical, and/or philosophical, which exclude them from the public school system. Thus, home schooling in charter schools tends to attract a wide range of families from very conservative, "fundamentalist", Christian to more than liberal "Birkenstock and tie-dye", who are more like the hippies of the 1960s. Through self-study programs, many of the charter schools also provide educational services to adult students.

It should be noted that education in Russian schools is more regulated. There are training programs approved by the Russian Ministry of Education, and training is carried out in accordance with Federal State Educational Standards. Mandatory final state certification of students is conducted at the end of basic general and general secondary education.

According to Tareva (2018), in the era of the Internet, digitalization and networking, due to the unlimited expansion of the information space, weak or impossible assessment of its reliability, there are risks of manipulating consciousness through the "soft power" of politics, art, and education. Such risks can be removed by education, which in the period of widespread digitalization must find answers to the new challenges associated with educating a person in a networked society.

However, the situation faced by the Russian society in connection with the COVID-19 pandemic served as the reason for referring to the experience of rhizomatic training. Rhizomatic learning is a view of educational activity, expressed in the metaphor of a rhizome: the cognitive trajectory is like a growing rhizome, which has no beginning, no end, and no centre of any kind. It grows from any point and in any direction. One of the key provisions in the definition of rhizomatic education by D. Cormier is the statement: "Rhizome is a model of learning how to deal with uncertainty".

Uncertainty is probably the most appropriate definition of the situation faced by educators and students around the world in a pandemic situation. For Russian teachers, one of the most difficult issues was the objective assessment of the work performed by students. The lack of direct control over the performance of homework, the inability to objectively determine the authorship of the completed works has shaken the traditional, centuries-old system of evaluating knowledge. One of the possible ways out, in our opinion, can be found in D. Cormier's main theses on rhizomatic learning – "We need to make students responsible for their own educational activities (as well as the educational activities of others)".

A separate point is the students' motivation in these conditions. From the student's point of view, it is often summarized in the statement "if I am interested in something (important/necessary), I start studying it". Thus, once at home, the child is not constrained by the limits of the lesson, he/she is free to choose the form of studying the material. Most schools have used various Internet platforms in the process of distance learning – RES, MES, UCHI.ru, Yandex-class, Sirius-online and others, while avoiding strict requirements for completing homework.

One of the most popular forms of distance learning is the use of mass open online courses (MOOCs). Museums have started to actively offer virtual tours, and it is now possible to join watching theatre performances, to visit theatres and exhibitions. Restrictions on free tuition on a number of platforms were partially lifted, including the Coursera project, founded by Stanford University professors. However, the mass transition to the distance format is not smooth: due to an unexpectedly large load, the electronic journal crashes, and students periodically encounter technical problems. The removal of quarantine measures will make the education return to its traditional forms, but the active use of distance, electronic and online technologies, tested during the period of self-isolation, will lead to inevitable changes in both general and higher education.

Discussions

Rhizomatic training in its traditional interpretation is actively used during the quarantine period under the coronavirus pandemic, which allowed us to clearly and quickly identify both its advantages and disadvantages. With the constant use of online learning, it is quite difficult to organize the process effectively with the rejection of the traditional education. It is not easy to include all students in the general discussion, organize a dialogue and polylogue. Not all teachers are prepared for this form of work, not only in terms of technical equipment, but also in terms of rational and methodically competent organization of the process. Online courses are not suitable for the education of primary and secondary school students, where the student is required to perform practical work independently. Technical preparation of classes also causes difficulties. Hyperactive children cannot focus their attention long enough to master the material, there is no guarantee of independent work, and there are difficulties in forming a related monologue (a short primitive text prevails in oral speech).

Among the advantages, we note the desire of students to educate themselves, routine mandatory activities disappear, teachers have almost unlimited freedom to choose forms, content and methods of presenting material using Internet resources, including the most comfortable and convenient. Using bright, colorful

demonstration material, video and audio content contributes not only to the retention of attention, but also to the development of clip thinking. Parents can participate with their children in the educational process.

Conclusion

The approach to education as a rhizomorphic phenomenon, parts of which are non-linearly connected, interdependent, and constantly flow into each other, creates a flexible but stable learning system. Such rhizomorphy has qualitatively changed the approach to education, in which each element takes not only an active part in the formation of the entire system, but also deconstructs and deterritorializes the educational environment, making it more multi-faceted, multifunctional, free, and able to independently integrate new opportunities and new subjects. Rhizomatic learning as a flexible, non-linear structure devoid of clear ordering has found its place in modern American and Russian education. This model is most clearly manifested in the functioning of charter, magnetic and voucher alternative schools in the United States, where almost all the ideas of postmodernism that we have identified are traced: decentralization; connectivity and heterogeneity, multiplicity, discreteness; cartography; event-based construction of reality; rejection of binarism; intersubjectivity. New contours of construction, description and explanation of pedagogical reality are set. The processes taking place in the Russian education system also bear the imprint of postmodern educational strategies, which is manifested in the individualization of education, the strengthening of the role of networking, and the creation of educational resource centres. The role of education using Internet platforms and online courses is increasing.

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