

THE EDUCATIONAL CLUSTER AS A TOOL FOR DEVELOPMENT OF REGIONAL EDUCATIONAL SPACE

Olga A. Chernoyarova¹, Aida V. Kiryakova², Vladimir N. Ivanov³,
Khalimat Khadzhi-M. Batchayeva⁴, Valerij V. Andreev⁵ and Galina V. Kalinina⁶

The relevance of the study is conditioned by the formation and development of the educational environment in the regions in order to ensure balanced socio-economic development of territories. The purpose of the paper is to develop practical advice on the organization of educational clusters in the region. The leading approach to the investigation is the principle of regionalization, which enables to consider regional educational space as a set of institutions which are focused on education; the public involved in solving the problems of education; socio-psychological stereotypes governing the behavior of people in relation to education. The study involved 400 teachers, 700 students, 100 employers who have identified the criteria for the effectiveness of educational clusters for the development of regional educational space (the form motivation to life-long learning; to ensure compliance of educational and professional standards; to achieve a balance of supply and demand in the labor market; to organize advanced vocational training, as a means of improving the competitiveness of specialists in the conditions of the restructuring of economic sectors). The main results of the study are to identify types of educational clusters (integrative and partnership) as a tool for development of regional educational space. The significance of the results obtained is that the integrative kind of educational cluster enhances investment attractiveness of education in the region; the creation of equal opportunities for children to receive education and increase of the access to quality education; continuity of education. Partnership kind of educational cluster enhances the quality of vocational education and its compliance with the requirements of the regional economy; ensures development of professional standards; provides procedure for evaluating of the effectiveness of budget's investment in vocational training of young people; improves in-company training system of the staff; develops vocational guidance of students, increases their motivation to work.

Keywords: regionalization of education, educational cluster, regional educational space.

INTRODUCTION

The relevance of the study is conditioned by the formation and development of the educational environment in the regions in order to ensure balanced socio-economic

¹ PhD, Associate Professor of the Department of Sport Disciplines, Chuvash State Pedagogical University named after I. Y. Yakovlev, Cheboksary, Russia, *E-mail: tanjana1@yandex.ru*.

² Doctor of Education, Professor, Head of the Department of General and Professional Education, Orenburg State University, Orenburg, Russia.

³ Doctor of Education, Professor of the Department of Pedagogy and Psychology, Chuvash State Pedagogical University named after I. Y. Yakovlev, Cheboksary, Russia.

⁴ Doctor of Education, Professor of the Department of Pedagogy and Educational Technologies, Karachay-Cherkess State University named after U.D. Aliev, Karachaevsk, Russia.

⁵ Doctor of History, Professor, Rector of Cheboksary Cooperative Institute (branch) of Russian University of Cooperation, Cheboksary, Russia.

⁶ Doctor of Philosophy, Professor, Vice-Rector on Educational Work of Cheboksary Cooperative Institute (branch) of Russian University of Cooperation, Cheboksary, Russia.

development of territories (Baklanov, 2007; Minimansurovich, 2014; Yashkova & Kalimullin, 2015; Kalimullin, Khodyreva & Koinova-Zoellner, 2016). Development of regional educational space, which is adequate to characteristics of the educational needs and interests of learners and the specifics of the region, represents a step forward in the development of education, its movement in the direction of democratization and modernization. The educational system, which is not focuses on the momentary demand of the labor market, but educational needs of the region's citizens is the most promising. These requirements determine the types and kinds of educational institutions, educational curricula, the ratio of public and private educational institutions and the level of education quality (Bochkarev, 2001). The economic development of the region, its financial position, income level, ethnic and religious composition of the population, cultural traditions and preferences, climatic and geographical conditions largely govern the educational needs of a particular individual (Kuznetsova, 2009; Vlasova, Simonova & Soleymani, 2016). The choice of future profession depends not only on the abilities and interests of the individual, but also on the possibilities of socialization that exist in a particular region. Firstly, organizing component, which forms the institutional infrastructure and implements regulatory control of the regional educational space (Migranyan, 2004). Second, scientific and technical aspect that defines a common scientific basis, the development of science and technology, the content of engineering education (Kolomiychenko & Rokhchin, 2003). Thirdly, the social dimension, including quality of life, a culture, a set of social and psychological attitudes that form ways of viewing the world (mentality) (Mikheeva, 2000). Fourth, the economic aspect - it's assets as cash of the population, which is willing to spend it on education; funds of organizations interested in competitive specialists and who are ready to invest regional education (Polynov, 2010). All of the above enable to consider the educational cluster as a tool for development of regional educational space (Tatarinova, Shevtsova & Lunev, 2012). The purpose of research is to develop practical recommendations on the organization of educational clusters in the region.

RESEARCH METHODOLOGY

The leading approach to the investigation is the principle of regionalization, which allows to consider regional educational space as a set of (1) scientific, socio-cultural, economic institutions and means of mass communication, oriented on education; (2) the public, involved in solving the problems of education; (3) socio-psychological stereotypes, governing the behavior of people in relation to education. Regionalization is a recognized scientific principle of social and economic development, and is not a reflection of current political environment (Lexin & Shvetsov, 2004). The urgency of the ideas of regionalization is determined by global trends of social and cultural development of mankind, aimed at the

recognition of the intrinsic value, the uniqueness of national and regional cultural variants, their unity, integrity and importance as an integral part of human culture (Pugacheva *et al.*, 2016). The principle of regionalization enable to consider a regional space based on three paradigms. Neoclassical paradigm, according to which the regional space is considered as a set of interacting agents (Lunev, Pugacheva & Stukolova, 2014b; Vlasova, Masalimova & Alamanov, 2016). Institutional, according to which the agent's actions take place in the framework of cooperation with various institutions - organizations, regulations, traditions, etc. (Lunev & Pugacheva, 2013). Evolutionary, which is based on a dynamic view of agents' activities (Lunev & Pugacheva, 2013a). Regionalization of Education integrates the listed paradigms in order to create a regional educational space (Oleshkov & Uvarov, 2006). In turn, the formation of regional educational space can be seen as a natural process of adaptation of the education system to the specific conditions of the region. This process is the result of giving up a single and indivisible, centrally managed, vertically integrated technocratic educational system, and the emergence of the education system which is decentralized, horizontally integrated, oriented on human needs, and adequate to level of development of socio-economic relations in the region (Zamaletdinov *et al.*, 2016). During the research the following methods were used: theoretical (analysis, synthesis, generalization and systematization); sociological (observation, interviews and questionnaires).

RESULTS

The main results of this study are to identify and scientifically justify the types of educational clusters: 1) integrative, 2) partnership.

3.1. Integrative kind of educational clusters. This species is the integration of educational institutions (see Table1).

TABLE 1: VERTICAL EDUCATIONAL CLUSTER

<i>Preschool education</i>	<i>School education</i>	<i>Professional and higher education</i>	<i>Continuous professional Training</i>
home education, kindergartens	municipal and private schools, lyceums, gymnasiums Centers for Continuous Education of children and adolescents	Colleges Universities Center for Continuous Education of adults	In-house training Corporate training Defense of the thesis Universities of the "third age"

Table 1 show that the vertical kind of the educational cluster causes the continuity of education in space and time. In practice, this type of educational cluster is represented by complexes "kindergarten - school", "school - university",

“school-college” and the like. It is found that the vertical kind of the educational cluster ensures the development of regional educational space by: 1) the resources’ use of the family institution (financial, information, human, etc.); 2) the implementation by children’s kindergartens of training functions for school; 3) meeting the educational needs of citizens at the level of the school, vocational, higher education and the level of continuous professional training; 4) competent specialists’ training at the level of vocational and higher education and the level of continuous professional education (Saurenco, 2009; Subetto, 2002). The survey of 400 teachers, 700 students of colleges and universities of the Republic of Tatarstan (Russia), 100 employers of the region enabled to identify the main criterion of the effectiveness of integrative educational cluster: the formation of motivation for life-long learning.

Partnership educational cluster

The second type of educational clusters - partnership - is the relationship of firms operating in a certain area, and educational institutions that train specialists for this area, which allows efficient use of internal resources of all partners for their intensive development (Lunev *et al.*, 2016). A kind of educational partner cluster is shown in Figure 1.

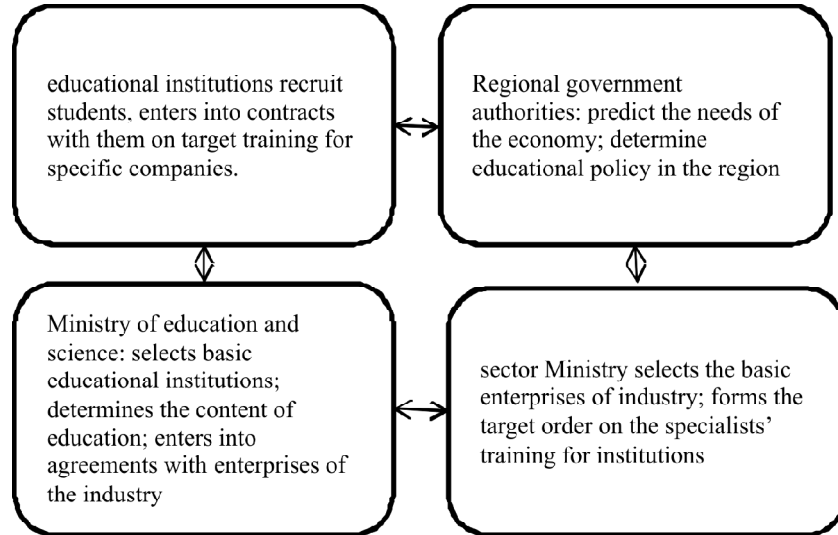


Figure 1: Educational partner cluster

From Figure 1, it follows that the second type of educational clusters is based on the idea of a non-profit, social partnership between business and educational institutions. An important feature of the partnership educational cluster is its

innovative orientation. The most successful partnerships educational clusters are formed where the “breakthrough” in the field of engineering and technology, followed by the coming into new “market niches» is carried out, or is expected (Ivanov *et al.*, 2016). 12 partnerships educational clusters were established in the Republic of Tatarstan (Russian Federation) (see. Table 2).

TABLE 2: EDUCATIONAL PARTNERSHIP CLUSTERS AND THEIR SUPERVISING MINISTRY IN THE REPUBLIC OF TATARSTAN (RUSSIA)

<i>Nº</i>	<i>Partner education cluster</i>	<i>Maintained by the Ministry of</i>
1	Production and transportation of oil and gas. Petrochemicals and Refining	Ministry of Industry and Trade
2	High tech	
3	Energetics	
4	Engineering	
5	Aircraft	
6	agro-industrial complex	Ministry of Agriculture and Food
7	Construction, Architecture	Ministry of Construction, Architecture and Housing and Communal Services
8	Transport and road facilities	Ministry of Road Transport sector
9	Informatization and Communications	The Ministry of Communications and Informatization
10	Education	The Ministry of Education and Science
11	Health	Ministry of Health
12	Culture and art	Ministry of Culture

The initiator of the partnership educational clusters’ creation in the Republic of Tatarstan was the Ministry of Education and Science. It has initiated the creation of educational clusters which are strictly regulated by industrial regional economy. It is found that the type of partnership educational cluster ensures the development of regional educational space by means of, firstly, increase in the volume economic development, introduction of high technologies, formation of new industries; competitive specialists’ training in accordance with international standards and the needs of the regional economy, enhancement of their skills and retraining; attracting investment in education; improvement the assessment of the quality and accessibility of education (Terentyeva *et al.*, 2016; Lunev, Pugacheva & Stukolova 2014). Second, ensuring of students’ successful socialization, improvement of competitiveness of colleges’ and universities’ graduates; organization monitoring of the education market and the labor market; modernization of material-technical base of educational institutions; expanding the range of educational services and meeting the educational needs of the population (Kamasheva *et al.*, 2016). The survey of 400 teachers, 700 students of colleges and universities, 100 employers enabled to identify the criteria for the effectiveness of the partnership educational cluster: compliance of educational with professional standards; achievement of the balance of supply and demand in the labor market; organization of advanced

vocational training, as a means to improve the competitiveness of specialists in the conditions of economic sectors' restructuring.

DISCUSSIONS

Problems of development of regional educational space and definition of the role of the educational cluster are the subject of many studies. The works devoted to regional management, give the characteristics of educational services and define their role in improvement of the quality of life (Akhmetov *et al.*, 2016; Lunev, Pugacheva & Stukolova, 2014c; Lexin & Shvetsov, 2012; Kuznetsov, 2009; Baklanov, 2007; Satarov, 2004; Kolomiychenko & Rokhchin, 2003; Shtulberg & Vvedensky, 2000; Valeeva & Kalimullin, 2016). Publications, which describe the ways of creating and effectiveness of industrial clusters' functioning are of great interest (Lunev, Pugacheva & Stukolova, 2014a; Polynov, 2010; Migranyan, 2004; Tsikhan, 2003; Mikheeva, 2000). An important theoretical and practical significance for the study belongs to works in which the features of management of regional educational systems are revealed (Bochkarev, 2001; Lunev, Pugacheva & Stukolova, 2013; Terentyeva *et al.*, 2016; Kalimullin & Dobrotvorskaya, 2016; Kalimullin & Islamova, 2016; Masalimova & Benin, 2016). Noteworthy are the publications, which reveal the idea of specialists' training on the basis of integrated educational curricula (Lenskaya, 2015; Protas, 2013; Gorin, Nelyudov & Svistunov, 2010; Masalimova & Barinova, 2016). However, all these studies are devoted to the development of a regional educational space or clusters' educational activities. We believe that the Education Cluster is a tool for development of regional educational space. All the stated and actualizes the purpose of the study.

CONCLUSION AND RECOMMENDATIONS

Regional educational space is a kind of complex structural socio-economic system that develops according to its own laws, having both subjective and objective nature. In each region operates educational environment, reflecting its peculiar features: the traditions, culture, national and religious composition of the population, the level of economic development, etc. (Vasyagina & Kalimullin, 2015). The unity of the federal educational space is determined by the common elements that are common to all the educational space of the country, take place in each of the regional educational spaces. One of the tools of development of regional educational space is an educational cluster.

Practical recommendations on the organization of educational clusters in the region consist of the following. Firstly, to develop a system of educational clusters of different types. An integrative and partnership educational clusters are identified by the authors of the paper. Integrative type of the educational cluster enhances investment attractiveness of education in the region; creates equal opportunities for children to receive education and increases access to quality education; ensures

continuity of education. Partnership as kind of educational cluster ensures the enhancement of the quality of vocational education and its compliance with the requirements of the regional economy; development of vocational standards; procedure for evaluating the effectiveness of budget's investment in vocational training of young people; improvement in-company training system of the staff; the development of vocational guidance of school pupils, increases their motivation to labor activity. Second, determine the criteria for the effectiveness of each type of educational cluster, involving, teachers, students and employers. It is found that the criterion of effectiveness of integrative educational cluster is the formation of motivation for lifelong learning. Performance criteria of partnership educational cluster: compliance of educational and professional standards; achievement of a balance of supply and demand in the labor market; organization of advanced vocational training, as a means to improve the specialists' competitiveness in the conditions of the restructuring of economic sectors.

The study results enable to outline prospects for further research of the problems associated with the identification of the tools of development of regional educational space. Paper Submissions may be helpful for leaders and teachers of colleges and universities; Staff of continuous professional development and retraining centers for the selection and structuring of the content of continuous professional development of the teaching staff of universities and vocational training institutions.

References

- Akhmetov, L.G., Khranova, N.A., Sychenkova, A.V., Chudnovskiy, A.D., Pugacheva, N.B., Pavlushin, A.A., Varlamova, M.V. & Khilsher, V.A. (2016). 'Selective Support for the Development of Regional Vocational Education Services: the Russian Experience'. *International Review of Management and Marketing*, 6(2): 127-134.
- Baklanov, P.Y. (2007). *Territorial structures of the economy in the regional management*. Moscow: Nauka.
- Bochkarev, V.I. (2001). 'State-public management of education: what it should be'. *Pedagogy*, 3: 9-13.
- Gorin, Yu.V., Nelyudov, A.D. & Svistunov, B.L. (2010). 'Integrated educational curriculum of specialists' training for innovative activity'. *Integration of education*, 3: 36-41.
- Ivanov, V.G., Barabanova, S.V., Shagieva, R.V., Chikisheva, N.M., Lunev, A.N., Volkova, N.V., Nabiullina, K.R. & Spirina, E.V. (2016). 'The Essence and Content of State Regulation of Services Development in Conditions of Increasing Autonomy of Federal State Entities'. *International Review of Management and Marketing*, 6(2): 149-154.
- Kalimullin, A.M. & Dobrotvorskaya, S.G. (2016). 'Higher Education Marketing Strategies Based on Factors Impacting the Enrollees' Choice of a University and an Academic Program'. *International Journal of Environmental and Science Education*, 11(13): 6025-6040.
- Kalimullin, A.M. & Islamova, Z.I. (2016). 'Formation of Information-Educational Environment in the Partner Universities of University of Shanghai Cooperation Organization'. *IEJME-Mathematics Education*, 11(6): 1879-1890.

- Kalimullin, A.M., Khodyreva, E.A. & Koinova-Zoellner, J. (2016). 'Development of Internal System of Education Quality Assessment at a University'. *International Journal of Environmental and Science Education*, 11(13): 6002-6013.
- Kamasheva, Y.L., Goloshumova, G.S., Goloshumov, A.Y., Kashina, S.G., Pugacheva, N.B., Bolshakova, Z.M., Tulkibaeva, N.N. & Timirov, F.F. (2016). 'Features of vocational education management in the region'. *International Review of Management and Marketing*, 6(1): 155-159.
- Kolomiychenko, O. V. & Rokhchin, V. E. (2003). *Strategic planning of development of Russian regions: methodology, organization*. Saint Petersburg: Nauka.
- Kuznetsova, O. V. (2009). *Economic development of regions: theoretical and practical aspects of state regulation*. Moscow: Komkniga.
- Lenskaya, N. (2015). 'Implementation of models of integrated educational institutions, implementing educational curricula of different levels of education'. *International journal of experimental education*, 12(2): 250-251.
- Lexin, V. N. & Shvetsov, A. N. (2012). *Reforms and the regions: a systematic analysis of the reform processes of the regional economy of federalism and local self-government*. Moscow: URSS.
- Lexin, V. N. & Shvetsov, V. N. (2004). *The state and regions: Theory and practice of state regulation of territorial development*. Moscow: URSS.
- Lunev, A., Pugacheva, N. & Stukolova, L. (2014b). 'The essential characteristic of the regional services market'. *Modern European Researches*, 1: 49-52.
- Lunev, A.N. & Pugacheva, N.B. (2013). 'Selective support for the development of regional areas of professional educational services'. *Journal of Kazan State Technical University Named After A. N. Tupolev*, 2(2): 316-319.
- Lunev, A.N. & Pugacheva, N.B. (2013a). 'Scientific and methodical recommendations on the assessment of the quality and accessibility of public and municipal services'. *Society: Politics, Economics, Law*, 4: 15-27.
- Lunev, A.N., Pugacheva, N.B. & Stukolova, L.Z. (2013). 'The essential characteristic of the regional services market'. *Concept*, 12: 96-100.
- Lunev, A.N., Pugacheva, N.B. & Stukolova, L.Z. (2014). 'Forms of integration of entities of the regional market of vocational education services'. *Concept*, 1: 61-65.
- Lunev, A.N., Pugacheva, N.B. & Stukolova, L.Z. (2014a). 'Development strategies for professional educational services under the increasing autonomy of territories within the federal state'. *Actual Problems of Economics*, 160(1): 215-220.
- Lunev, A.N., Pugachova, N.B. & Stukolova, L.Z. (2014c). 'Socially oriented regional economic space as an instrument in managing the development of service sector'. *Actual Problems of Economics*, 155(5): 247-250.
- Lunev, A.N., Safin, R.S., Korchagin, E.A., Sharafutdinov, D.K., Suchkova, T.V., Kurzaeva, L.V., Nikishina, S.R. & Kuznetsova, N.A. (2016). 'The Mechanism of Industrial Educational Clusters Creation as Managerial Entities of Vocational Education'. *International Review of Management and Marketing*, 6(2): 166-171.
- Masalimova, A.R. & Barinova, N.A. (2016). 'A Structural and Functional Model of Teachers' Monitoring Skills Development'. *International Journal of Environmental and Science Education*, 11(13): 6102-6112.

- Masalimova, A.R. & Benin, V.L. (2016). 'Conflict Humanitarian and Natural Knowledge: the Way to Exit From It'. *International Journal of Environmental and Science Education*, 11(13): 5993-6001.
- Migranyan, A.A. (2004). *Theoretical aspects of formation of competitive clusters in countries with economies in transition*. Moscow: Science.
- Mikheeva, N.N. (2000). *Regional economy and management*. Khabarovsk: RIOTIP.
- Minimansurovich, K.A. (2014). 'Processes of reforming teacher training in modern Russia (Experience of the Kazan Federal University)'. *American Journal of Applied Sciences*, 11(8): 1365-1368.
- Oleshkov, M.Y. & Uvarov, V.M. (2006). *Modern educational process: basic concepts and terms*. Moscow: Sputnik Company.
- Polynov, A.O. (2010). *The competitive capabilities of regions. Research methodology and ways to improve*. Moscow: KRASAND.
- Protas, E.V. (2013). 'Integrated content of the educational curricula and application of innovative technologies in the educational process'. Education. Science. *Scientific staff*, 1: 71-74.
- Pugacheva, A.S., Filippova, V.P., Kon, A.Y., Dorzhieva, L.B., Silchenok, I.S., Pugacheva, N.B., Lunev, A.N. & Mustafina, A.A. (2016). 'Market Regulators of Service Spheres Innovative Development as a Tool of Regional Socio-Economic Policy'. *International Review of Management and Marketing*, 6(2): 294-300.
- Satarov, G.A. (2004). *Regional policy of Russia: adaptation to diversity*. Moscow: INDEM Foundation.
- Saurenco, N.E. (2009). 'Project model of scientific support of the main educational curricula of staff training in the system of continuous professional education. News of southern Federal University'. *Pedagogical Sciences*, 11: 190-199.
- Shtulberg, B.M. & Vvedensky, V.G. (2000). *Regional policy in Russia: theoretical foundations of the objectives and methods of implementation*. Moscow: Helios ARV.
- Subetto, A.I. (2002). *The quality of continuous education in the Russian Federation: state: trends, problems and prospects (experience of monitoring)*. Moscow: Research center of quality problems of specialists training.
- Tatarinova, I.P., Shevtsova, V.V. & Lunev, A.N. (2012). 'Economic mechanisms of creation and effective development of industrial clusters'. *Economic and Humanitarian Research of Regions*, 2: 204-210.
- Terentyeva, I.V., Mukhomorova, I.V., Perezhogina, O.N., Pugacheva, N.B., Lunev, A.N., Akhmetzyanova, G.N., Lezhnin, V.V. & Gainullina, R.R. (2016). 'Development Strategy of Service Sector in Conditions of Federal States Entities Autonomy Increasing'. *International Review of Management and Marketing*, 6(2): 1-5.
- Terentyeva, I.V., Starodubtsev, M.P., Timonin, A.I., Pugacheva, N.B., Zykova, N.N., Lunev, A.N., Ezhov, S.G. & Starikova, L.D. (2016). 'Assessment of state services quality and availability in the socio-cultural sphere'. *International Review of Management and Marketing*, 6(1): 122-127.
- Tsikhan, T.V. (2003). 'The cluster theory of economic development'. *Theory and practice of management*, 5: 40-51.

- Valeeva, R.A. & Kalimullin, A.M. (2016). 'Effects of Parent-Child Relationship on the Primary School Children's Non-Violence Position Formation'. *International Journal of Environmental and Science Education*, 11(13): 6178-6184.
- Vasyagina, N.N. & Kalimullin, A.M. (2015). 'Retrospective analysis of social and cultural meanings of motherhood in Russia'. *Review of European Studies*, 7(5): 61-65.
- Vlasova, V.K., Masalimova, A.R. & Alamanov, S.K. (2016). 'The Technology of Teacher Training Contents Projection and Implementation on the Basis of Information Streams Integration'. *International Journal of Environmental and Science Education*, 11(3): 225-236.
- Vlasova, V.K., Simonova, G.I. & Soleymani, N. (2016). 'Pedagogical Support Components of Students' Social Adaptation'. *International Journal of Environmental and Science Education*, 11(5): 641-653.
- Yashkova, A.N. & Kalimullin, A.M. (2015). 'The features of manifestation of students' subjectness'. *Review of European Studies*, 7(5), 211-216.
- Zamaletdinov, R.R., Yudina, N.P., Lavrentyeva, E.I., Savva, L.I. & Pugacheva, N.B. (2016). 'Practical Recommendations on the Improvement of the Effectiveness of Anti-Corruption Policy in Universities'. *International Review of Management and Marketing*, 6(2): 390-396.