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TRAINING OF PROFESSIONALS FOR CREATIVE ECONOMY IN
AGGLOMERATION

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Abstract

Training of professional personnel always takes place on a certain territory. But results of creative personnel's work go beyond the boundaries of a particular city and extend to a considerable space, for example, the space of urban agglomerations or inter-regional agglomerated space. There is a negative trend in the desire of creative people to choose a large city with an atmosphere of creativity and the need of the territory of the metropolitan area for creative personnel as a place of residency and work. Thus, a peculiar creative inequality occurs on a certain territory. The spatial distribution of creative personnel in Russia is manifested in the concentration of elements of the creative economy primarily in the European part of the country. It is emphasized that the accelerated development of creative economy is possible through the creation of a specific creative spatial cluster, which emerges on the basis of nearby agglomerations with different levels of creative appeal. Implementation of creative component of the innovation process imposes certain requirements on the real and potential subject of innovation. Novelty of the research lies in the development of methods for the gradual assessment of an employee's creativity level: the definition of the employee category to be assessed; the definition of a set of indicators reflecting the employee's creativity; the determination of each indicator's weight, based on the method of expert assessment; the integral assessment of creativity level according to the author's method, which was tested and which displayed the possibility of its use.

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1. Introduction

Creative economy is currently one of the fastest growing sectors of global economy and it is highly efficient in terms of income generation, jobs creation and export earnings. Creativity doesn't mean that everyone should be artists and designers. Creativity is manifested through new methods of business and services. The goal of creative economy is to produce a new product and to register its uniqueness. The main subject of creative economy is the creative class. There are a variety of criteria for distinguishing the creative layer of society. R. Florida believes that creative class includes people who work in science and technology, art, media and culture, intellectual workers. Their share in the total labor resources is 30 to 50% in the developed countries of North America, Europe, Asia and other countries of the world (Florida, 2008). Final result of the creative class representatives' work is creation of an intellectual product.

Understanding the essence of creative economy is possible when identifying not only its subject and object, but also determining its place in space. Creative space is created simultaneously with formation of creative economy. At the UNESCO Summit "Creative Cities" in Beijing, creativity was defined as a special kind of renewable human resources and talents based on innovation (Yongqi, 2013). In this context, the word "renewable" is particularly important. It must be emphasized that training of professional personnel always takes place on a certain territory. But results of creative personnel's work go beyond the boundaries of a particular city and extend to a considerable space, for example, the space of urban agglomerations or inter-regional agglomerated space. A new creative quality of agglomerated space is created on the basis of the interweaving of local and global creative and cultural trends. Urban agglomeration is a territory for creative people, but creative people themselves also contribute to the development of agglomerations. In the conditions of creative economy formation, the goal of local governments is to create favorable conditions for the creative class, including those attracted from outside. It is possible to merge the neighboring territories into macroregions and form creative clusters (Tsertseila & Ordova, 2016).

A problem that is yet to be solved is the problem of development of method for describing the qualitative characteristics of the creative class.

2. Problem Statement

For global economy, transition from traditional types and forms of competition to the competition of territories for creative professionals is a consistent pattern. Creative people prefer to live in large cities, which have become the main actors in socio-economic and cultural development (Florida, 2002, 2008; Ostanin, 2017). A synergy effect and a dispersion effect can and should emerge in urban and interregional agglomerations, and it should contribute to the growth of collective creativity and economic wealth.

3. Research Questions

The research needs to answer the following questions:

3.1. On which territory should creative personnel be focused? Special features and advantages of an urban agglomeration for the training of creative economy personnel.

3.2. What qualities should modern creative worker possess?

3.3. How (with use of what methods) can one describe an employee's creativity level?

4. Purpose of the Study

The purpose of the study is to justify the necessity of forming a creative cluster on the basis of inter-regional cooperation in the macroregion of the south of Western Siberia. It is necessary to develop a method for determining an employee's creativity level and to determine the main directions for the formation of professional personnel for creative economy.

5. Research Methods

5.1. The purpose of the study can be achieved through the use of Hawkins' (2011) concept of creative economy and creative class concept of Florida (2002, 2008), which emphasize the influence creative people have on the development of individual organizations, cities, regions and countries.

5.2. The concept of creative economy underlies the description of creative clusters and mega-regions, which provides methodological basis for the use of findings of spatial theory (Krugman, 1998; Fujita, 2010) and the theory of urban agglomerations. Urban agglomerations attract creative people, this changes the agglomeration's quality; creative spaces appear. As a result, the individual and cumulative abilities of creative workers increase exponentially, that is, the end result significantly exceeds the sum of its addends (Florida, 2008).

5.3. A method has been developed for determining the creativity level or the level of creative potential of an employee; on this basis databases and data banks on creative workers can be created.

6. Findings

6.1. The advantages of urban agglomeration for the formation of creative space.

Modern urban agglomerations, as a rule, have a capital in the form of creative people. Gathering together, talented and creative people exchange ideas. Consequently, their individual and cumulative abilities increase exponentially, that is, the end result significantly exceeds the sum of its addends. There a specific creative space cluster in which collective creativity and economic wealth grow is formed (Florida, 2008). Urbanization effect (when it is concentrated on one territory and urban agglomeration is formed) and localization effect (neighborhood effect) are distinguished. As a result of the agglomeration process, the economic space is compressed, i.e. population is concentrated in large agglomerations (Zobova & Shabashev, 2016). Creative people want to live on territories characterized by tolerance, social and cultural diversity and favorable conditions for their creative potential realization (Florida, 2008).

The negative trend of agglomeration process is the concentration of creative people in agglomeration center and the impoverishment of the agglomeration periphery. It is possible to partially rectify the situation with the help of new computer technologies (ICT). The Internet and ICT provide information for rural areas. Through digital platforms, it is possible to use local resources of consumers

and entrepreneurs anytime and anywhere based on outsourcing and freelancing (Shabashev & Shcherbakova, 2016).

In the modern world there are cross-border agglomerations, which include agglomerations of neighboring cities along with suburbs and which can become the basis of spatial clusters, including creative clusters.

The world's successful experience provides the basis for its use in the south of Western Siberia. Kuzbass agglomeration occupies a middle position between the Novosibirsk and Tomsk agglomerations, which have significant creative potential. On the one hand, this situation aggravates the struggle for resources, and on the other hand, it can help in solving the problem of qualitative development of each agglomeration's creative space.

In the composite index of creativity and investment attractiveness, the Novosibirsk agglomeration is in the group of leaders, Tomsk agglomeration's creativity level is also significant, Kemerovo and Barnaul agglomerations' level of creativity development lags significantly behind their level of investment potential (Zamyatina & Pilyasov, 2013).

Creation of a cross-border creative cluster in the south of Western Siberia (Barnaul, Kemerovo, Novosibirsk and Tomsk agglomerations) is needed in order to obtain a synergistic effect from the advantages of the neighborhood (Ivanova, Antonov, Shabashev, Zobova, & Nesterov, 2017). The cluster of culture in the Kuzbass agglomeration, which is a concentration of industrial, mainly coal-mining enterprises and highly urbanized territory, is at the development stage. There is an extremely uneven territorial placement of educational institutions for training of creative workers in the Russian Federation. In the agglomerations of the south of Western Siberia, it is necessary to use the full potential of specialized educational institutions.

6.2. Methods and stages of assessing the creativity level of cultural sphere employee.

Creativity becomes innovation in the presence of two components - business and science (Yongqi, 2013). But creativity and innovation are interrelated and complementary phenomena. Art is beneficial to business because it creates the atmosphere necessary for creativity.

The implementation of creative component of innovation process imposes certain requirements on the real and potential subject of innovation.

Vocational training of potential cultural workers is carried out in humanitarian higher educational institutions (institutes of culture, faculties of a number of universities, universities of artistic creativity) and secondary specialized educational institutions (colleges, schools). It is necessary to distinguish the process of a formation of a creative worker in the field of culture, which includes several stages and the process of describing the worker's creativity level. Most of the approaches used are based on the psychological aspects of human creativity and, in our opinion, they are not applicable to the cultural sphere since they do not take its peculiarities into account.

A set of acquired knowledge, acquired skills and personal qualities of a person can be used as an indicator of a person's creativity level. An integrated indicator of creativity level may include a number of components.

- The indicator of conceptual creativity that reflects the gap in the system of knowledge and skills and their application in practice, suggesting an understanding of theoretical foundations of activity. In organizations this indicator should be evaluated on the basis of results of studies in educational institution (intellectual potential, lifestyle potential, creative potential);
- The indicator of technological creativity shows skills in professional activities. This indicator should be evaluated in the process of workers' certification or on the basis of results of a sociological survey of line managers on the "quality" of the employees' work (this reflects their professional potential);
- The employee's personal creativity indicator can express mobility of professional thinking and activity, ability to overcome stereotypes, ability to think strategically based on the prediction of prospects and ability for innovation. This indicator includes mobility potential and motivation potential.

Employee's creativity has two sides: the outer side, which is represented by showing creativity in work, and the inner side, which is the creative level of a person. Therefore, the first two indicators reflect the employee's creativity level in accordance with the position, that is, they reflect all the requirements necessary for successful performance of work. The third indicator indicates the employee's readiness to perform work of the required level of quality. Requirements for the creativity level of the employee should be drawn up in the form of indicators of effective work in the employment contract. Unifying these indicators for all organizations is almost impossible, but for a separate organization it is feasible. It is suggested to assess the employee's creativity level stage by stage (Table 01). This method will allow one to compare the requirements for a creative worker and his real level of creativity.

On the basis of a certain indicator, it is possible to draw a conclusion about the state of personnel potential of both an employee and the entire organization.

Table 01. Potential and real level of an employee's creativity

Stages	Organizational measures for formation of a creative employee	Evaluation of an employee's creativity level
Stage 1	1.1 Creation of databases on creative employees 1.2 Implementation of a system for medium-term forecasting of staffing needs and training of professionals 1.3 Annual monitoring of staffing and personnel potential based on the assessment of employees' creativity level	Specification of a category of employees who fulfill the creative functions
Stage 2	Creation of organizational and pedagogical conditions for the development of personnel potential: 2.1. providing the educational process with qualified personnel 2.2. development and implementation of an individual trajectory of professional self-development of employees of cultural organizations.	Specification of a set of indicators reflecting the conceptual, technological creativity of the employee and his or her personal culture.

Stage 3		On the basis of the method of expert assessments and depending on the specifics of the organization, determination of specific weight of the indicator of conceptual, technological creativity of the employee and his personal culture.
Stage 4		Integral assessment of the creativity level by the formula: $I = \frac{N_{\text{fact}} - N_{\text{min}}}{N_{\text{max}} - N_{\text{min}}}$ N fact is the indicator reflecting a certain assessment of creativity in points; Nmin is the lower level of the indicator, reflecting a certain assessment of creativity in points (established by experts); Nmax is the upper level of the indicator, reflecting a certain creativity in points (set by expert = 100 points)

In this case, the indicator takes into account the quality of training the specialist got in the educational institution. The results of this indicator should be included in the database of personnel potential by the following structure:

- Indicators of conceptual creativity: level of intellectual creativity; level of lifestyle potential; level of creative potential.
- Indicators of technological creativity: the level of professional potential.
- Indicator of employee’s personal culture: mobility potential indicator; indicator of motivation potential.

The intellectual potential of an employee can be measured using the Eysenck IQ test. These types of tests are used in hiring, and they have been used in Russian practice for a long time. Lifestyle potential can be measured using the “EYDOBIONT” test, which will help an employee find a way to success.

Creative potential is determined by experts. The aggregate indicator based on the results of tests and expert review characterizes the indicator of the employee's conceptual competence.

The indicator of technological competence, that is, of professional capacity, should be assessed by the results of certification, which should be regularly carried out by the organization in accordance with regulatory documents.

The indicator of the employee's personal culture can be assessed by the mobility indicator or by expert from the line manager of the employee’s side and by the indicator of motivation level.

In order to confirm the practical significance of the proposed method, the level of personnel potential of cultural workers was determined. During the pilot study, an expert survey was conducted. According to the results of the expert sheets’ evaluation, the respondents were grouped into three groups. The results are presented in the Table 02.

Table 02. The results of determination of the level of cultural sphere employee’s personnel potential level

Indicators / limits of indicators	1st group of respondents		2nd group of respondents		3rd group of respondents	
	Absolute index	Integral index	Absolute index	Integral index	Absolute index	Integral index
1. Indicator of conceptual creativity		0.56		0.6		0.75
Intellectual potential	160	0.8	145	0.6	165	0.86
Lifestyle potential / 20-100	45	0.3	80	0.7	75	0.6
Creative potential / 20-80	60	0.6	50	0.5	70	0.8
2. Indicator of technological creativity (professional potential)		0.8		0.9		0.8
Grade point average / 3-5	4.6	0.8	5	1	4.7	0.8
The average manager's score by the results of certification / 60-100	65	0.8	79	0.9	94	0.8
3. Indicator of individual creativity		0.5		0.4		0.6
Mobility potential (manager's score) / 3-5	3.4	0.2	4	0.5	3.7	0.35
Motivation potential / 0-40	35	0.8	30	0.3	37	0.9
Total average score of personnel potential		0.62		0.63		0.72

The results of the experiment showed that the third group of respondents has the highest level of personnel potential, their score is 0.72 to the norm of 1. This group has a high level of conceptual creativity, technological creativity and a high level of individual creativity. But the highest level of technological creativity (professional potential) was shown by the second group of respondents – 0.9.

These scores demonstrate potential abilities of the employees. Total score of creativity level shows the potential of the employee as a specialist; this will allow to reduce time of real assessment of the employee’s practical skills and will allow heads of structural departments to carry out the career planning, staff rotation, training and retraining process.

6.3. Methods of teaching and training

Successful work with modern students of creative universities requires flexibility and adaptability (Bencsik, 2017). Training of professional staff for creative economy implies improvement of training methods or changing this methods, traditional education algorithms should be changed.

The second objective is training of teachers for the new economy. Often regional universities either lack or do not have enough of their own research; their ties with business are weak. It is possible to solve these interrelated tasks by attracting specialists from a cross-border creative cluster. Modern ICTs make it possible for us to use online courses by leading specialists (Wójcik, 2017). Online courses can have a positive effect on the territory of a cross-border creative cluster that includes creative universities and cultural institutions. There is an opportunity to use digital teaching materials. At the same time, we

believe that in creative institutions of higher education, direct interaction between a teacher and a student is equally important for development of creativity. Teaching methods in which students personally perform creative tasks have the greatest impact.

7. Conclusion

Creative economy objectively requires highly educated and creative people to be concentrated on a certain territory. At the same time, there is the negative trend of agglomeration process which is the concentration of creative people in agglomeration center and the impoverishment of the agglomeration periphery. Based on the global experience of the existence of cross-border agglomerations, the creation of a cross-border creative cluster in the south of Western Siberia has been proposed. The need for such a cluster is justified by the middle position of the Kuzbass agglomeration between the Novosibirsk and Tomsk agglomerations, both of which have significant creative potential. The purpose of the functioning of a cross-border creative cluster is to obtain a synergistic effect from the use of the neighborhood's advantages. At the same time, individual and aggregate abilities of creative employees greatly increase.

To study employees' creative potential level, a method has been developed and tested to determine the potential based on the calculation of indicators of the conceptual, technological, personal creativity of employees. The stages of a creative employee formation were proposed, they are connected with the description of an employee's creative potential and with the role of educational system in the process.

It was clarified that the stage-by-stage implementation of a creative employee formation will change the trajectory of educational sphere development based on the use of ICT through the attraction of specialists of a cross-border creative cluster.

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