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PUBLIC OPINION, IMAGE AND PUBLIC RELATIONS

Abstract

The paper deals with the model opening function of image in the course of formation of the steady relation to activity of organization during management activities of public relation. The model is based on the social psychology model of casual attribution and sociology model of formation of public opinion in reference groups.

Keywords

public relations activity, public opinion, image, public relations

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When people usually speak about public opinion, they seldom remember image. When people speak about public relations, they sometimes remember image, but seldom remember public opinion. In our opinion, these three concepts are closely connected.

Final 'product' of public opinion is a certain public attitude towards some object, about which this public opinion is made. Certain public attitude towards some object is also the result of public relations activities.

Moreover, as we show below, public relations activity is management of process of public opinion formation by means of image. In other words, public relations activity is directed on image formation. The result of public opinion formation is necessary attitude towards the person, which activity is followed by public relations.

Let us consider the mechanism of public opinion.

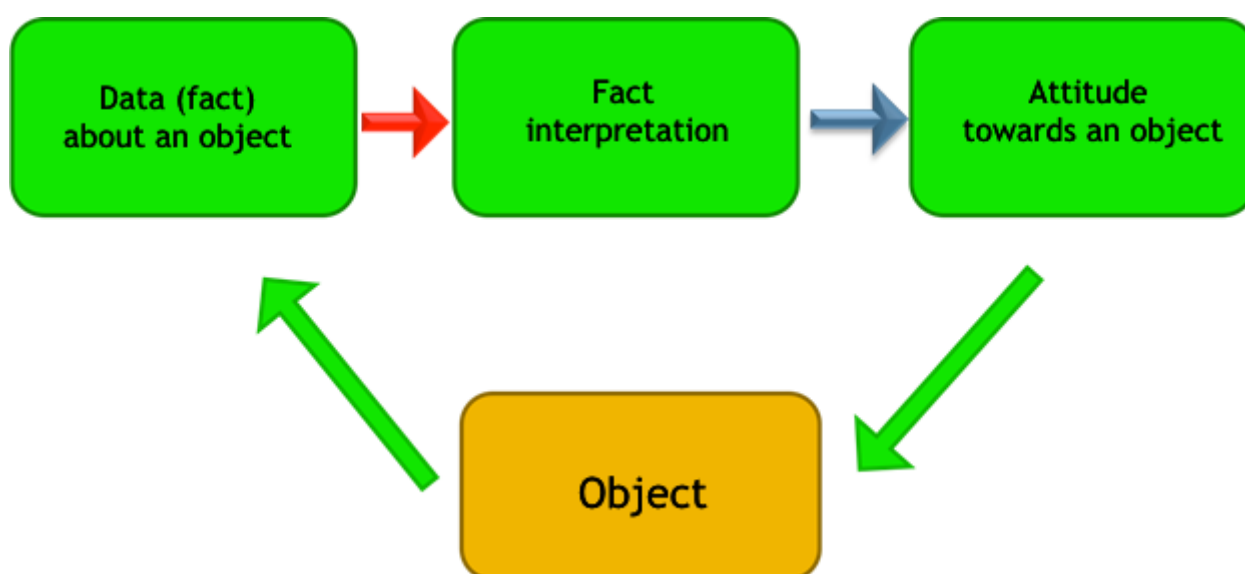


FIGURE 1

To understand the mechanism of public opinion we remember the research conducted by university of the Tartu city in the USSR, i.e. in those days, when there was no advertisement on television and messages of mass media had purely information character. The centralized nature of goods supply of the cities was one the feature of those times, which showed the dependence of consumption of a certain type of goods and of its positive information in mass media. The research was conducted in Tartu, which population was about 100 thousand people.

The local newspaper placed information about aspirin benefit and observed the change of aspirin sales in drugstores. During the first week aspirin sales volume decreased, during the second - came to former level, and during the third - increased in comparison with the previous level and was established on some new value.

Question: Why did sales volume decrease during the first week?

The theory of public opinion says that at this time reference groups¹ (i.e. people which opinion is significant for each other) discussed the benefit of aspirin. Further development of the theory showed that as a rule, small groups have special people - opinion leaders, whose assessment of events becomes the general opinion of group, i.e. the opinion shared by each member. As a rule, opinion leaders have more extensive network of communications and enter into the group, which is conditionally possible to call "group of opinion leaders of the first level" with its own opinion leader. These leaders, in turn, enter the reference group of opinion leaders of the second level. As a result, society has some hundreds of hierarchical reference groups with opinion leaders of large public groups on the top. Today each news is reproduced in mass media at several levels: first, simply as a fact; then as interpretation of the fact by opinion leaders of the lowest level (various local experts and analysts); then as interpretation of the fact by opinion leaders of higher level (experts and analysts of large state and business structures) and then as interpretation of the fact by opinion leaders of the country level.

Nevertheless, there are two basic levels: fact and its interpretation in a reference group.

After the fact interpretation is constructed, each individual transfers it to the attitude towards that object, about which some fact became known. In experiment of Tartu University - towards aspirin.

What is an attitude? An attitude is the personal value of an object for an individual defining his further actions with an object. In a case with aspirin, the attitude is usefulness of aspirin and necessity of its use.

Interpretation of data in aspirin case was the answer to the question: why did the newspaper place this advertisement?

There were two competing versions: the first - aspirin is useful, citizens of Tartu do not understand it and consume aspirin a little; the second - there is too much aspirin in city drugstores, it is necessary to sell it and for this purpose citizens were told that it is useful. While there was a competition of versions, sales decreased. After the version of "true usefulness" won, sales at first returned on former level, and then it exceeded.

Thus, the result of public opinion formation is the general for all the individual attitude of each citizen towards some object, which is defined by interpretation in a reference group of some fact, which became known about this object. Opinion leaders of various level play the key role in interpretations.

Making a start from primary sense of 'public relations', we understand it as management of public relations.

To understand the mechanism of public relations, we address to the mechanism of formation of public opinion since it is managed by public relations, because its result is this or that attitude towards object, in our case, towards any organization (for example,

¹The reference group is people, by which assessment we are guided in the behavior.

towards government body).

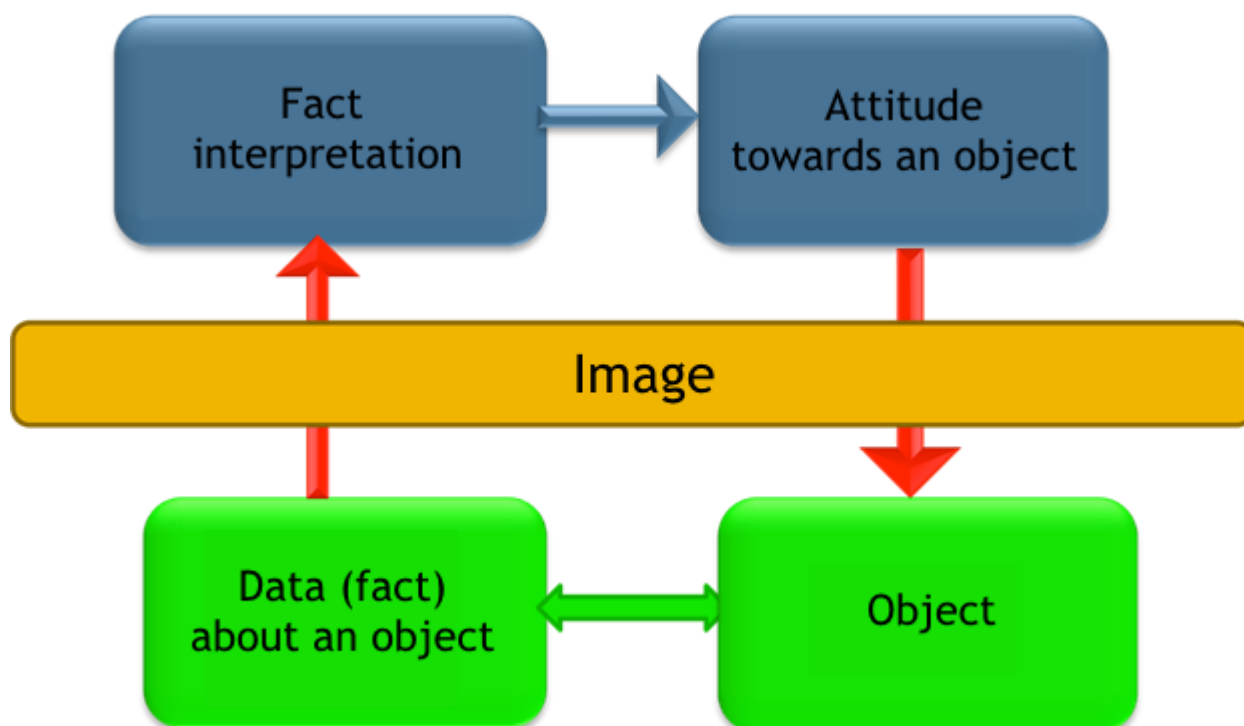


FIGURE 2

The final answer can be given at once: the attitude management mean of such an object as the government body is image. Actually, this or that image is the result of PR activity.

Let us deal with the way image operates the attitude towards object, and then, we try to understand the concept of image.

When we considered the mechanism of public opinion formation, we distinguished fact and its interpretation. Generally, there are many possible directions of interpretation of any fact. However, social psychology has the phenomenon of so-called 'casual attribution', where the most widespread direction of fact interpretation is the assumption of the reason of its emergence, i.e. questions why?, what for?, to whom it is favorable?, who stands behind it? set the directions to the majority of interpretations to all facts.

Thus at research of the phenomenon of casual attribution, the main question was as follows: when do we (society) attribute the reason of an event (fact) of accident (or to laws of the nature) and when do we attribute the event reason for some subject, for example, for authority. For example, it is visible on the example of the Malaysian Boeing crash in Ukraine. The answers on two main questions (who brought it down and was it brought down incidentally or specially) define interpretation of an event.

The researches on casual attribution contain classical experiment. Imagine a hill, at the top of which a person parked the car slightly on a slope. After a while, the car starts and goes without a driver downhill. Further three situations are offered, in each situation people are asked: who is guilty that the car went downhill.

First situation: the car went downhill and at the foot of a hill crashed into a tree. When people are asked who is guilty, 70% consider that it was accident, perhaps, the emergency brake is not repaired, and 30% consider that the person, who left the car is guilty.

Second situation: the car went downhill, at the foot of a hill crashed, and broke a

fence of someone's household. When in this situation people are asked who is guilty, the picture changes. Already 50% consider that the owner of the car is guilty and 50% consider that it was an accident and nobody is guilty.

Third situation: the car went downhill, and runs down the child, who played at the foot of a hill. In this case, already 70% consider that the car driver has to bear responsibility for child's death, i.e. consider the driver guilty in the incident.

It is such general law: the more catastrophic the consequences are, the more people are inclined to interpret the fact to find responsible for happened. The less catastrophic consequences are, the more people are inclined to interpret the facts as casual, i.e. happened for the reasons, independent from a person.

However, the most interesting and important for understanding the mechanism the public relations begin further.

In the initial version of experiment, the car driver is simple, 'abstract person', i.e. the person without 'image'. Now, he has an image, more precisely, set the social type possessing a certain image. The first type - mother having many children. As soon as it is reported that the driver is a mother with 'loving her children' social image, results of experiment change. People are inclined to acquit mother having many children, i.e. cannot allow her guilt in death of a child. In case the driver is the mother having many children, 70% of people continue to consider that the tragedy has casual character.

The second character is professor of university, i.e. a person with image of slightly absent-minded, but kind, not malicious clever person. In a case with professor it is justified by 50% of people, i.e. 50% of people consider the tragedy with the child accident in case the driver is professor of university.

At last, the third character is a young person without a certain occupation, who is 'living fast', i.e. the person with rather unsuccessful image, image of a person capable of irresponsible, hooligan acts. In this case, people read out from the very first situation that the fault lies on the young man. When the car simply moved down from the mountain 60% blame the driver, but when the driver is the young man 90% of respondents blame him for a tragic situation.

The resulting attitude towards object, data about which are subject to interpretation, depends on the one hand, on 'weight of the facts', and on the other - on image of object, which can both strengthen, and weaken the natural direction of interpretation.

Now, let us try to deal with concept 'image' and its origin.

At first, we try to answer the question: whether there can be an image at inanimate or unconscious objects, for example, whether there can be an image of a chair. Obviously - no. And image of a house? No, until a ghost lives in it, i.e. a conscious being operating behavior of a house.

In law, there is a curious concept - intention, which existence or absence define fault degree. I.e., act and its consequences remain the same, but depending on existence or absence of intention, punishment will be various.

We speak about image to qualify behavior we have to appropriate it this or that value depending on some constant characteristics of object (more precisely, the subject of behavior). Image is possible only at beings, which behavior is ambiguous, i.e. which cannot be understood, without knowing its subjective value for this purpose, a being, who definitely behaves.

There is a Sufi's parable. Sufi rode went on a horseback and saw the sleeping person, in a mouth of whom the venomous snake crept. Sufi understood that it is necessary to work immediately; he woke this person with a lash, drove him to an apple-tree and forced to eat rotten apples under the tree. Then drove him to the river and forced to drink water until the person pulled out. All this time a man damned Sufi or begged to leave him alone. When he pulled out, together with apples there was a snake and the person understood

what Sufi did and began to thank it. Sense of the parable is that there are situations when it is only possible to work and there is no time to explain. But, in this parable it is possible to see that while there was a snake, interpretation of Sufi's actions by the person to whom in a mouth the snake crept, was replaced with the opposite. From the very beginning we understood correctly Sufi's actions and throughout all parable steadily saw in it the wise savior.

And such image a Sufi which imputes to the ordinary person the following relation and behavior will be result of perception of a set of stories about Sufis: anything Sufi would not do as far as his actions seem absurd - it is necessary to trust him as his wisdom is boundless and always useful. The Sufi's image created by parables makes his actions extremely effective concerning consciousness of ordinary people.

From these examples, there is a clear sense of public relations, which consists of constant explanation of this invisible sense of certain actions, allowing to understand their value, and, secondly, of doing that way that the same principles, to which they submit were constantly seen in actions. In this sense image is concepts setting principles, to which behavior of some person submit (person, organization, government body), knowing which, it is possible to understand his behavior. If it is possible to create a stable relation between a set of concepts principles and any person, these concept principles start operating interpretations of the facts, which become known about this person, keeping constant the attitude towards him. It is expressed in a formula: "at first you work for image, then image works for you".

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SUGGESTIONS FOR TEACHING READING IN ENGLISH: PHONICS BASED AND THE WHOLE LANGUAGE APPROACHES

Abstract

The topicality of this work is that the process of learning English begins with learning how to read, and it's not an easy matter to cope with difficult English phonetics. The main aim of this article is to study two main methods of teaching how to read in English: phonics based and the whole language. The problem statement relies on understanding which approach is easier and more effective. Searching for an answer, different sources concerning that problem were observed and main points were reflected in this article. The experiment described here was carried out at one of Russian schools, and the results we have got show how meaningful and useful each method may be. The materials of the article may be helpful for young teachers in teaching reading children and adults.

Keywords

whole language, phonics, holism, learning to read, English,
phonics-based reading, decoding words

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Nowadays there are so many methods and techniques of teaching the English language. But the most important thing in the beginning of learning English is how to teach a person such basic skill like reading? Recently we have been puzzled with a question "What is better: phonics-based reading instruction or whole language reading instruction?". We take into account not only children, but also adults because the importance of English last decade is undebatable and undeniable.

Having made some literature observation we've found out that there is a great number of linguists, scientists and teachers in the USA and in Great Britain who have been interested in this problem since the 20th century.

Since the 1980s there has been a conflict between proponents of phonics-based reading instruction and those who favor the whole-language approach.

First of all we should define what the phonics-based and the whole-reading instructions are and reveal its pros and cons.

Let's begin with the most debatable and criticized approach - phonics. Phonics-based reading instruction is a methodology for teaching young children to read and spell words. The teacher introduces a series of spelling rules and teaches the child to apply phonetics (how the letter combinations sound out loud) to decode words based on their spellings. Phonics attempts to break written language down into small and simple components (Reading Strategies: Phonics vs. Whole Language Reading Instruction, 2015).

Phonics instruction teaches children the relationships between the letters (graphemes) of written language and the individual sounds (phonemes) of spoken

language. It teaches children to use these relationships to write words. The goal of phonics instruction is to help children to learn and use the alphabetic principle - the understanding that there are systematic and predictable relationships between written letters and spoken sounds. The knowledge of these relationships helps an early reader to recognize familiar words accurately and automatically and "decode" new words (Childhood - Teaching Approaches - Phonics Instruction, 2015). In short, knowledge of the alphabetic principle contributes greatly to the ability to read words in isolation and in connected text.

Here are some of the highlights from the evidence-based research on phonics instruction (Childhood - Teaching Approaches - Phonics Instruction, 2015):

1. Systematic and explicit phonics instruction is more effective than non-systematic or no phonics instruction. The hallmark of systematic phonics instruction is the direct teaching of a set of letter-sound relationships in a clearly defined sequence. The set includes the major sound/spelling relationships of both consonants and vowels.

2. Systematic and explicit phonics instruction significantly improves kindergarten and first grade children's word recognition and spelling.

3. Systematic and explicit phonics instruction significantly improves children's reading comprehension.

4. Systematic and explicit phonics instruction is effective for children from various social and economic levels. It helps children from various backgrounds make greater gains in reading than non-systematic or no phonics instruction.

5. Systematic and explicit phonics instruction is particularly beneficial for children who are having difficulty learning to read and who are at risk for developing future reading problems.

6. Systematic and explicit phonics instruction is most effective when introduced early. Instruction should start in kindergarten and the first grade.

7. Phonics instruction is not an entire reading program for beginning readers. Children should also be solidifying their knowledge of the alphabet, engaging in phonemic awareness activities, and listening to stories and informational texts read aloud to them. They should also be reading texts and writing letters, words, messages, and stories.

8. Phonics can be taught effectively to a whole class, small groups, or individual students.

9. Approximately two years of phonics instruction is sufficient for most students. If phonics instruction begins in kindergarten, it should be completed by the end of the first grade. If it begins in the first grade, it should be completed by the end of the second grade.

Phonics instruction may be provided systematically or incidentally. The hallmark of a systematic phonics approach or program is that a sequential set of phonics elements is delineated and these elements are taught along a dimension of explicitness depending on the type of phonics method employed. Conversely, with incidental phonics instruction, the teacher does not follow a planned sequence of phonics elements to guide instruction but highlights particular elements opportunistically when they appear in text (National Reading Panel, 2015).

Phonics instruction can also vary with respect to the explicitness by which the phonic elements are taught and practiced in reading texts. For example, many synthetic phonics approaches use direct instruction in teaching phonics components and provide opportunities for applying these skills in decodable text formats characterized by a controlled vocabulary. On the other hand, embedded phonics approaches are typically less explicit and use decodable text for practice less frequently, although the phonics concepts to be learned can still be presented systematically (Phonics Instruction, 2015).

Here are the main types of phonics (National Reading Panel, 2015):

1. Analogy phonics. Teaching students unfamiliar words by analogy to known words (e.g., recognizing that the rime segment of an unfamiliar word is identical to that of a familiar word, and then blending the known rime with the new word onset, such as reading *brick* by recognizing that *-ick* is contained in the known word *kick*, or reading *stump* by analogy to *jump*).

2. Analytical phonics. Teaching students to analyze letter-sound relations in previously learned words to avoid pronouncing sounds in isolation. For example: dog, dad, ding and day, the /d/ phoneme is the shared sound in these words. The drawback of this method is that it starts with the “whole” and moves into “parts”, and at the same time, the student may not have acquired sufficient phonemic awareness or phoneme knowledge to succeed with the comparison of the sounds within different words.

3. Embedded phonics. Teaching students phonics skills by embedding phonics instruction in text reading, a more implicit approach that relies to some extent on incidental learning. This is probably the least effective way to teach reading of all. Embedded phonics is used together with (as a side branch) the whole language method of learning to read. This is a very implicit approach where limited amounts of letter and sound relationships are taught during reading sessions. This places very little emphasis on phonics, and more focus is placed on reading for meaning first.

4. Phonics through spelling. Teaching students to segment words into phonemes and to select letters for those phonemes (i.e., teaching students to spell words phonemically).

5. Synthetic phonics. Teaching students explicitly to convert letters into sounds (phonemes) and then blend the sounds to form recognizable words.

Despite the fact that there is a lot of scientific research which supports this method for teaching students to read, some teachers, academics and teaching organizations vote against it.

In July 2014, a group of teachers and phonics consultants wrote to the Times Educational Supplement, defending the Year One phonics check - a test given to all five year olds to examine their ability to decode unfamiliar words. This was in a response to an earlier letter from teachers, academics and representatives of teaching unions who had called for its abolition (Aldridge, 2014).

The All-Party Parliamentary Group for Education's *REPORT OF THE INQUIRY INTO OVERCOMING THE BARRIERS TO LITERACY* warned that a mechanical “sticking” to the use of phonics can “switch off” children from a love of books. Fabian Hamilton, the Labour MP and chairman of the cross-party group, insisted on phonics being in danger of turning reading into a “mechanical process”.

One treat phonics as the best solution for the teaching of reading but the others support the whole language which is very contrasted from the above mentioned one.

Although phonics pure sound is often the best way to teach children to read effectively, there are some children with special needs for whom phonics is not successful. Not all children learn to read in the same way and a good teacher needs a variety of methods in order to meet the needs of every child.

Here is another method which is called “Whole Language Approach”. It's always contrasted with phonics-based methods of teaching reading and writing.

In simple words, this is a method of teaching children to read by recognizing words as whole pieces of language. Supporters of the whole language philosophy believe that language should not be broken down into letters and combinations of letters and “decoded.” They support the idea that language is a complete system of making meaning, with words functioning in relation to each other in context.

Whole language practitioners teach to develop a knowledge of language including the graphophonic, syntactic, semantic and pragmatic aspects of language. Within a whole language perspective, language is treated as a complete meaning-making system, the parts of which function in relational ways. It has drawn criticism by those who advocate

"back to basics" pedagogy or reading instruction because whole language is based on a limited body of scientific research (Whole Language, 2015).

So the whole language reading instruction focuses on helping learners to "make meaning" of what they read and to express meaning in what they write. Some important aspects of the whole language philosophy include an emphasis on high quality literature, a focus on cultural diversity, and integration of literacy instruction across the subject areas.

As for the background, the whole language method of teaching children to read began to emerge in the 1970s. It became a very popular method of teaching reading in the 1980s and the 1990s. The approach argues that language should be taught as a "whole". Emphasis on learning to read and write. Focus on real communication.

The idea of "whole" language has its basis in a range of theories of learning related to the epistemologies called "holism". Holism is based upon the belief that it is not possible to understand learning of any kind by analyzing small chunks of the learning system. Holism was very much a response to behaviorism, which emphasized that the world could be understood by experimenting with stimuli and responses. Holists considered this a reductionist perspective that did not recognize that "the whole is greater than the sum of its parts". Analyzing individual behaviors, holists argued, could never tell us how the entire human mind worked. This is - in simplified terms - the theoretical basis for the term "whole language" (Whole Language, 2015).

Whole language learning was designed to provide a better understanding of the full context of the language. This approach emphasizes creativity when applied to learning to read and write rather than rote memorization of concepts that may contribute to some children's opinions of reading and writing as chore-like.

Teachers of the Whole Language believe that students learn to read by writing, and vice versa. They encourage children to read and write for "real purposes," with nonfiction texts and interpretation of what they read forming much of the basis of their assignments. The whole language approach to reading also stresses the love of literature and the use of engaging texts to help children develop that love. Teachers who use this approach exclusively do not place heavy emphasis in the early grades on spelling and grammar, which can make some parents uncomfortable. The whole language philosophy emphasizes children's efforts to make meaning and seek meaning in language; therefore, correcting errors places the focus on technical correctness, which is not where whole language teachers believe it should be. The effective whole language teacher "hears and sees through" the student's errors, using the information gained for formative assessment, then creates experiences that help the child to acquire the correct structure and form (What is the "Whole Language" Approach to Teaching Reading?, 2015).

Taking into consideration teaching principles, in the whole language approach reading should not be taught, but rather acquired through trial and error. The teacher facilitates the learning process, but provides little direct instruction. Students are encouraged to guess unfamiliar words using picture or context clues. Learners are also encouraged to use invented spelling to write their own stories.

Students who learn through whole language learning, however, may not develop as much accuracy in pronunciation, word recognition and spelling skills as one who learned through phonics-based teaching (Whole Language, 2015).

Aside from overlooking spelling and technical mistakes, the whole language approach can also present problems for students with reading difficulties. Students with dyslexia and other language processing disorders **NEED** explicit instruction in phonemic awareness, phonics, and decoding in order to improve their reading skills. With the high prevalence of processing disorders (15-20% of all students), many reformers believe explicit and systematic phonics instruction should be used to teach **EVERY** student how to read - in order to prevent these students from falling behind. The whole language approach works

for many students, but explicit and systematic phonics instruction works for students of all levels (and greatly decreases spelling and pronunciation errors) (What is the “Whole Language” Approach to Teaching Reading?, 2015).

Because of disagreements over the years about which type of reading instruction is best, phonics or whole language, the National Reading Panel began a study in 1997 to settle the debate. In 2000, the Panel released its findings, stating that there are five essential components that must be taught in an effective reading program: phonemic awareness, phonics, reading fluency, vocabulary development, and reading comprehension.

As it was mentioned above, the Whole Language focuses on the idea of real communication. We also analyzed some information concerning it and found out that there is a method called in pedagogic “Communicative Language Teaching” and its idea is closely connected with the Whole Language.

The origins of Communicative Language Teaching (CLT) are to be found in the changes in the British language teaching tradition dating from the late 1960s. Until then, Situational Language represented the major British approach to teaching English as a foreign language. In Situational Language Teaching, language was taught by practicing basic structures in meaningful situation-based activities. British applied linguists emphasized another fundamental dimension of language that was inadequately addressed in current approaches to language teaching at that time - the functional and communicative potential of language. They saw the need to focus in language teaching on communicative proficiency rather than on mere mastery of structures (Communicative Language Teaching, 2015).

In contrast to the amount that has been written in Communicative Language Teaching literature about communicative dimensions of language, little has been written about learning theory. Neither Brumfit and Johnson nor Littlewood, for example, offer any discussion of learning theory. Elements of an underlying learning theory can be discerned in some CLT practices, however. One such element might be described as the communication principle: activities that involve real communication promote learning. A second element is the task principle: activities in which language is used for carrying out meaningful tasks promote learning. A third element is the meaningfulness principle: language that is meaningful to the learner supports the learning process. Learning activities are consequently selected according to how well they engage the learner in meaningful and authentic language use (rather than merely mechanical practice of language patterns). These principles, we suggest, can be inferred from CLT practices. They address the conditions needed to promote second language learning, rather than the processes of language acquisition (Communicative Language Teaching, 2015).

The cognitive aspect involves the internalisation of plans for creating appropriate behaviour. For language use, these plans derive mainly from the language system - they include grammatical rules, procedures for selecting vocabulary, and social conventions governing speech. The behavioural aspect involves the automation of these plans so that they can be converted into fluent performance in real time. This occurs mainly through practice in converting plans into performance (Communicative Language Teaching, 2015).

Communicative Language Teaching is best considered an approach rather than a method. Thus although a reasonable degree of theoretical consistency can be discerned at the levels of language and learning theory, at the levels of design and procedure there is much greater room for individual interpretation and variation than most methods permit. It could be that one version among the various proposals for syllabus models, exercise types, and classroom activities may gain wider approval in the future, giving Communicative Language Teaching a status similar to other teaching methods. On the other hand, divergent interpretations might lead to homogeneous subgroups (Communicative Language Teaching, 2015).

Puzzled with this problem, we decided to arrange our own small investigation in one of schools from our city. We made a test and gave it to pupils of 10th, 7th and 3rd forms from school №46. The test included 3 questions; the 2 last questions were for their teacher of the English language.

The 1st question was “How do you evaluate your reading skill on 1-10 scale”. Pupils from the 3rd form were confused a little, but mostly put 7, which their teacher called “too high”. The 2nd question was “How do you evaluate your knowledge of reading rules”. Kids put from 5 to 9, which is true, according to teacher’s words. And in the 3rd task where children had to write how they pronounce the following words (cup, cucumber, egg, meat, shirt, January) they showed quite good results. The most common mistake was in words “egg [ig], January [dzeinari, dzeineri], cucumber [kukumba, kakamber, kjukumba]. But nevertheless the teacher said first of all they learn how to read by analogy and analytical phonics methods.

In the 7th form things were the same in the first 2 questions, according to the teacher students chose too high level, and in the 3rd task many of them made mistakes in words “blood [blud, bled], chemical [hemikal, himikal, tchemical], air [air, au, ae], hour [haua, hor, hau, hauva, hour]”. But the teacher of this form said that students didn’t study phonics at primary school, but used to learn how to read through whole language method.

The 10th form showed pretty good results and it coincided with teachers view about their skills. The most common mistake in words “blood” and “hour”. This form was taught phonics at primary school and by the 10th form mostly by whole language. Children say it’s much easier to learn how to pronounce the word, because there are too many exceptions in the English language which make “phonics” useless.

The experiment on the one hand shows us that The Whole Language is preferable for students, but on the other hand we see that students who were taught by phonics-based method in primary school read better than those who didn’t learn to “decode” words. Of course this research needs further investigations, but we found the right direction and are ready to look deeper into the problem.

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HISTORICAL STAGES OF DEVELOPMENT AND MODERN DEFINITION OF THE CULTURAL AND EDUCATIONAL ENVIRONMENT

Abstract

The relevance of the research problem due to the need to reconsider the concept of the cultural and educational environment. The purpose of the article is analyzing the historical stages and definitions of the cultural and educational environment. The leading research methods of this problem are the historiographic method and the descriptive method. In article the main historical stages of development and definition of the cultural and educational environment are considered, characteristics, aspects of the cultural and educational environment are provided. The article will be useful for researchers of historical and pedagogical Sciences interested in this issue.

Keywords

cultural and educational environment, influence of the environment on the person, educational organization

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Concept of the cultural and educational environment was studied by teachers, psychologists, philosophers, culturologists. An identification of the person with his environment, a problem of environment, environmental approach in education has been conceived by researchers of pedagogical, psychological, philosophical sciences (P. A. Florensky, A.I. Arnoldov, Yu.M. Lotman, E.S. Markaryan, V. M. Myazhuyev, V. V. Rubtsov, T.V. Meng, M.P. Voyushina, E.P. Belozertsev). Question of influence of the environment on the person, identifications of person's culture with his environment were concerned by outstanding philosophers of the past: Jean Bodin ("Method for the Easy Comprehension of History"), Charles-Louis Montesquieu ("The Spirit of the Laws"), Johann Gottfried Herder ("Ideas on the Philosophy of the History of Mankind"), Alexander Ivanovich Herzen ("From the Other Shore").

Studying researches of different authors it is possible to find some definitions of the cultural and educational environment. Some stages of origin of the concept, influence of the environment on culture of the person and the people will be presented in the article, and also some bright definitions of this environment will be described, the definition of the cultural and educational environment of the educational organization, schools, in particular, will be also given.

Influence of the environment on a person during the forming and education of certain qualities was comprehended by teachers and tutors of era of Antiquity. In Sparta, for example, training boys as soldiers was executed in a certain social circle, they were looked after by more skilled soldiers. Strict discipline, physical preparation and the ability to use weapon in the conditions of a certain environment and the human relations, according to Spartans, brought up the ideal Spartan soldier who was devoted to the state. Humility for

the sake of a common goal, unity of soldiers, a continuity of physical and military training - that are characteristics for pedagogical system of Sparta throughout history of that state.

During the Middle Ages monks-teachers of monastic schools tried to create the environment influencing the person. Thus it should be noted that schools were divided to internal and external schools. At internal schools boys who lived in a monastery were taught and to become monks. During the Middle Ages monks-teachers of monastic schools tried to create the environment influencing the person. Therefore lessons in the external were elementary literacy and bases of religious education. Asceticism, diligent reading religious literature, elimination of comfort and strict self-control - the main human virtues inherent in a medieval ideal of education for which the Catholic church was a spiritual center of medieval society.

Jean Bodin (1529/1530 - 1596), the philosopher of Renaissance, he emphasized the influence of the environment, geographical features of the place of residence of ethnos on psychological, physical, professional qualities of the person. Jean Bodin was one of the first who began to prove scientifically the influence of the environment on certain features of a person. In his work "Method for the Easy Comprehension of History" he wrote: "The South people thanks to a long habit to contemplation (which it befits black bile) appeared creators and founders of the most noteworthy sciences. They revealed secrets of nature, established the principles of mathematics, at last, they were the first who managed to comprehend value and essence of religion and celestial bodies. ... Northerners invented the various mechanics, guns, melting metals, publishing and everything connected with metallurgy. ... As for inhabitants of the middle zone, if they did not have the tendency to privy sciences of the inherent southerners, predilection to craft as people of the North, they were not in the least endowed with all kinds of abilities. Thus if we pay attention on the totality of historical monuments, it will become clear that establishments, laws, customs, administrative laws, trade, economy, eloquence, dialectics, and, finally, politics originate from this race of people" (*Bodin*).

The cult of man is a characteristic philosophy of the Renaissance age, where a man is a creator himself, does not need a divine plenty for the rescue. He, without regard to an environment, becomes the only owner of his life and fate. On this basis a question about identifying of culture of a man with an environment by the most philosophers of the Renaissance age moved aside on the second plan. In the philosophy of this period a man will transform an environment due to his own activity.

One of prominent thinkers of the epoch of Enlightenment, analyzing the culture of man and intercommunication with an environment was Charles-Louis Montesquieu (1689-1755). In a number of cases Montesquieu put in direct dependence on a climate the people's temperament, their sensitiveness and manner of behavior: "In cold climates the sensitiveness of a man to pleasures must be very small, it must be more considerable in the countries of temperate climate and extraordinarily strong in hot countries. Climate can be distinguished on the degrees of people's sensitiveness as it is varied on the degrees of the latitude. I saw operas in Italy and England : there were the same plays and the same actors, but the same music produced so different impression on the people of both nations. Some of them were exited a little bit, the others were driven to great delight" (*Aron, Gurevich, 1992*).

Many things, in Montesquieu's opinion, influence on people: climate, religion, laws, principles of reign, examples of the past, dispositions, customs; the general spirit of people appears as the result of all of these aspects (*Aron, Gurevich, 1992*).

In the book "The Spirit of the Laws" Montesquieu objected against the theory of innate ideas and against studies about a priori, i.e. independence of experience, characteristics of our knowledge. A man is never given a birth with these knowledge, he can acquire it only in future, i.e. it comes from ignorance to knowledge. "Man in the natural state possesses no cognitions, but the ability to cognition. It is clear, that the first

ideas will not carry a speculative character: before the beginning of the life, he thinks of life's protection" (*Montesquieu, Bahtin, 1955*). In opinion of Montesquieu, a man moves not from concepts to feelings, but from the feelings to concepts. Cognition is a process. It faces a number of challenges, which are gradually being overcome. By cognizing people catch causal relationships of the phenomena and on this basis foresee events.

Montesquieu acknowledged that cognition is this reflection in the human head of the objectively existent material world. He asserted that dispositions of people were determined, from one side, by a geographical environment, and from the other - depend on the existent political system. He did not accept monistic position here. However, and in that and in other case of Montesquieu removed the religious theory of predestination. In final analysis, dispositions of people, in obedience to Montesquieu, follow from nature and public environment, surrounding a man. The concept of a public environment coincided for him with the concept of the political system and dominating legislation.

Marie Jean Antoine Nicolas de Condorcet asserted that all people, all nations, all estates do not think identically and do not have the same picture of reality in a head. There is no agreement of opinion neither on private, nor on the basic philosophical issues. Condorcet considered that the plurality of opinions is caused by differences in the education of people, in developing their intelligence, which is related to distinctions in living conditions. But there is more a serious reason of distinction in looks: difference of professional and class interests. Disputes appear not only because one man think correctly, and other is mistaken, but also because of differences in the content of the experience of different groups of people. Nobody sees truth absolutely exactly and wholly, but everybody sees it approximately and partly. If disputes have quality of honesty and observance of logical rules, it leads to the enrichment of the truth. Tolerance to the opinions of others is an essential feature of a civilized man (*Sokolov, 2015*).

Johann Gottfried Herder (1744-1803) included components in the program of sciences of culture: the most accurate description of cultures as alternative answers to the requirement of the adaptation of a human nature to environment; knowledge of own culture through knowledge of other cultures. Herder is known for an important conclusion that between universal achievements of culture and national culture can be no contradictions, it means that all cultures are unity, leading to the creation of human civilization. Herder stood on the positions of the continuity and universality of socio-cultural process, human history originates from the history of development of nature. It is continuous and gradually reaches the higher levels. The last link in this evolution is human being. As an educator he considered an essential part of education is respect for the history and culture of other nations (*Herder, 1977*).

The Age of Enlightenment can be called an aspiration era to knowledge from the highest estates. The era's sign - belief in opportunity to change the person to the better where the environment of the person was studied for the purpose of creation of the perfect environment for the perfect person. Development of culture contacted with development of environment for education and prosperity.

As to the XIX century, it is essential to consider a look to the problem of the environment of Alexander Ivanovich Herzen (1812-1870) - publicist, writer, social activist and philosopher. Philosophical concept Herzen did not question the fact of human dependence on the environment from the era. A. I. Herzen shared this dependence in the following categories (*Herzen, 1906*):

1. physiological dependence. (Herzen did not deny the possibility of man to resist it. He noted that the mind and the will were rarely able to fight against it);
2. hereditary dependence. He called it solidarity of the latest generation with the previous generations. People live and work in order to arrange the fate of the children, the children in turn arrange the fate of their children, etc., the differences between generations are erased, each recognizes something transitional;

3. the moral and physiological dependence determined by the received education;
4. conscious dependence, which is defined in that environment and the era, forces people to participate in it and continue the work begun by the fathers;

As a result each person, according to Herzen, is a reflection of its era, its time and environment. But this does not indicate complete absence of identity. Environment excites a reaction in personality, and the response of a man can be both positive and negative, it can contain both sympathy and contradiction. A. I. Herzen also notes the moral independence of a man in conditions of the environment.

In the nineteenth century researchers of Sciences of culture analyzed the cultures of different countries, this was happening during the time of political changes and subsequent industrial revolution. At this time, capitalism as a system was completely developed. It embraced all industries of material production, which led to corresponding transformations in non-production sphere (politics, science, philosophy, art, education, daily life, social consciousness). Culture of this period is characterized by the reflection of the inner contradictions of a bourgeois society, the emergence of cultural and social confrontation between the bourgeoisie and the proletariat.

Cultural and educational environment of human in wide sense of determination is his surroundings: family, ethnic traditions, school, climatic conditions, cultural institutions, media, local authorities (Aktamov, 2007).

Great importance for human development plays mass education.

In the twentieth century secondary education became available to all segments of the population in developed and developing countries, the problem of the secondary education still faces the least developed countries. Thus, in the XX century the most of humans pass through system of secondary education, more than 70% are influenced by the cultural and educational environment of school (*The World Bank Data*).

The cultural and educational environment of school consists of two aspects: cultural and educational. The cultural aspect consists of norms and values of culture, their observance, preservation, distribution, broadcasting and creation of new cultural norms and values. The educational aspect of the cultural and educational environment of school consists of transfer of social experience of the previous generations, acquisition of knowledge and competence-based experience (*Fastova*).

I.G. Aktamov gives the following definitions to the cultural and educational environment is "pedagogically caused practical embodiment of national, historical and social world around and base for formation and satisfaction of spiritual needs of the person" (Aktamov, 2007) and "system of the social institutes connected among themselves by historical and cultural tradition, and also mechanisms of relationship among themselves" (Aktamov, 2007). Moreover, we see the definitions connected with social institutes of the region, city, village and definition related to the formation of certain qualities of the personality where cultural and educational environment acts as means of the formation. I. G. Aktamov emphasizes the role of the school as the lead actor of this environment and its relationship to cultural traditions and historical environment where traditional culture is the foundation of cultural and educational environment. The richer the cultural and educational environment than the richer, the more opportunities for personal development. The cultural and educational environment is richer, it is more opportunities for development of the personality. The interaction of schools with cultural institutions is a priority in stimulating the process of self-development. The formation and education of a student can not happen outside of cultural and educational environment of the school, which is, according to Aktamov, only potency for personal development.

Forming of one or another quality is related to the specific of the environment, where school comes as a core of cultural and educational environment, at school the leading subject of cultural and educational environment is a pedagogical collective. The

cultural and educational environment of school influences on educational process and acts as set of the interhuman relations between administration, teachers, pupils and parents where "each participant of educational process carries out the activity, using spatial and subject elements of the environment in the context of the developed social relations" (Aktamov, 2007). Aktamov determines quality of the environment by a variety of kinds of activity, existence of individual and joint creative activity of teachers and pupils, continuity of educational process and self-educational activity.

M.P. Artamonova in the cultural and educational environment of school emphasizes two interconnected sectors directly connected with internal life of school: cultural and educational.

The cultural sector consists of following components:

- a component of values (the rules of school, disciplinary rules stated in the charter of school, moral rules and norms, standards of the legislation);
- a normative component (values on which educational process of a certain school; values of culture of the country, the local region and the educational institution);
- a conceptual worldview component (the system of knowledge about man and world translated by schools and forming world view);
- a sign-symbolic component (system of sign-symbolic facilities, demonstrating sociocultural experience, values, norms, knowledge underlying the cultural content of the educational process);
- a communication component (information exchanges at school: system, organizational, purposeful, chaotic, casual; these interactions have property to make a basis of the content of cultural and educational process) (Artamonova).

Educational sector, from the point of view of M.P. Artamonova is "all kinds and forms of purposeful and specially organized joint activity on translation and mastering of the indicated norms, values and knowledge in corresponding to this cultural and educational environment sign-symbolic forms during of communication cooperations" (Artamonova). The processes of cultural and educational environment form personality, give cultural development of individuals and devolve sociocultural experience.

There are (in addition to above) many definitions of cultural and educational environment and most of the definitions relate to its influence on the formation of certain qualities of the person, describe the organizational, psychological and pedagogical conditions and factors, as well as composite components and features of cultural and educational environment.

The problem of "man - society - environment" is relevant till today. According to V. N. Myasishchev a personality since childhood and throughout the whole life is included in the system of social relations, which are expressed in the form of lords in its environment relations to nature, society, people, various activities. Gradually a person learns these relationships, and they become his own relationship to different sides of the reality that surrounds the person. The task of educational institutions is to cultivate around personality such relationships with certain combination, which would create a subjective richness of learning these relationships of the individual in the form of his needs, interests, aptitudes, and these are such contents in which society is interested (Myasishchev).

Environment and culture are in a complicated relationship and are closely related, since culture is generated, is valid in the context of a particular environment. Environment initially forms the basis of culture, when culture starts to develop, it changes the environment. The person is the subject of this process and its role and responsibility to society prevails in the modern world.

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A BRIEF LOOK AT THE HISTORY OF BUSINESS DEVELOPMENT IN RUSSIA

Abstract

The paper provides a brief overview of the historical conditions for the emergence and development of business in Russia. Business development in Russia has become one of the most important areas of economic transformation in the country. It took place in several stages, each of that is characterized by the specific economic and political circumstances.

Keywords

entrepreneurship, economy, entrepreneur, trade,
business activity, development, industrial boom

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*Business - is the art of extracting money
from someone else's pocket without resorting to violence.*
Max Amsterdam

It is difficult, or rather impossible, to find out exactly how many years ago emerged on our planet entrepreneurship. Probably, since production of primitive men did not go into a common pot, and exchanged for an equivalent amount of weapons or instruments of production.

Everything in our life is based on the exchange of goods in order to meet your own needs. Thus, each person can consider himself to a certain extent a businessman or an entrepreneur.

Entrepreneurship appeared in antiquity. According to the Roman lawyers, "business" activities considered as an especially commercial business and an entrepreneur - the renter, a man leading a public building.

In the ancient world, the main component of the economy was agriculture and the accompanying production for processing of agricultural products. At the same time the cities actively developed, and handicraft production and trade in them became widespread. With the state strengthening system began trade booming between countries and cities. A lot of extant cuneiform, clay tablets and papyrus records contain commercial nature. So the development of entrepreneurship led to the emergence of letters and numbers, writing and mathematics.

The concept of "entrepreneur" had several meanings. First of all, entrepreneurs were people involving in foreign trade. Marco Polo, the traveler and merchant who was at the beginning of trade between Europe and China, we can consider him as such entrepreneur. Business in those days was as follows: first, the trader (entrepreneur) signed a contract with the merchant (the Bank) for the sale of goods. The organizers of parades, booths and presentations, leaders of major industrial or building projects were also entrepreneurs in that time.

And how did business in Russia emerge? How did Russian business develop? Let's try to find answers to these questions.

Business in Russia is closely connected with geographic, natural, economic and political factors. In order to understand the specifics of the business relationship it should be taken into account tremendous efforts for the defense of the vast territory and the development of new land. Huge state was forced to mobilize their financial resources to meet these goals. Hence it was necessary to tax heavily. Without strengthening serfdom it was problematic to keep numerous troops. All this have positive trends in the development of entrepreneurship. Thus, it was born in the Kievan Rus' in the form of trade and fisheries. Entrepreneurial activity was characterized by two main areas: trade and commerce. Trade is a prototype for industrial production. The first tradesman worked on himself, being both workers and employers. The other form of production in Russia was artels that required a large number of people. At the head of these associations were people with organizational skills and had their own personal capital.

Even more elements of entrepreneurial activity were in trade. There were two types of trading: transit and domestic. The development of transit trade was facilitated by the fact that Kievan Rus was situated on transit routes between the East and the West. The inland trade carried out between north and south: bread was brought from the north, and in exchange for it handicrafts.

The greatest development of entrepreneurship was during the reign of Peter I (1689-1725). During that time in Russia were established manufactories, such industries as mining, weapon, cloth, linen were expanded. The most famous entrepreneurial dynasty at that time was the Demidovs.

The Demidovs was the richest Russian businessmen family. They established a lot of weapon and mining enterprises in the Urals and Tula. They also were founders of many cities in the Urals who had made an invaluable contribution to the development of the Urals. History of the Demidovs goes back into the Petrine era and has its origin in Tula blacksmith Demida Grigoriev's son Antufeev. His son, Nikita Demidovich, was a weapons maker and was personally familiar to Peter I. In 1720 he received the nobility with the name Demidov and was the founder of the powerful family tree.

Further development of entrepreneurship was restrained by the existence of serfdom. After the abolition of serfdom in 1861 started the construction of railways, reorganized heavy industry, began stock activities. A great contribution to the development and restructuring of the industry has made foreign capital.

At the beginning of the XX century. entrepreneurship became a mass phenomenon in Russia. Especially profitable were cotton production, trade and credits. Together with these forms of production began the process of monopolization of firms.

According to historical facts, the most favorable period in the development of the domestic business was the period from 1861 till 1917. In this period there was the dynamic growth of business activity regardless of the reform efforts of tsars, government or crisis.

By the beginning of the reforms after the abolition of serfdom in Russia, there were 128 joint-stock companies with a capital of 256 million rubles, more than two hundred mechanical plants and foundries with of workers. This reform gave impetus to wide and intensive development of private entrepreneurship. In 1861 in St. Petersburg appeared the first Russian private commercial joint-stock bank. Thus such form of business as joint-stock form which takes the leading position in a modern market economy developed rapidly.

Cancellation of serfdom in Russia in 1861 was an important event in the history of the business. New economic system - capitalism- began its development, which involved outskirts of Russia into the world commodity circulation, the spreading of wage labor, the growth of capitalist relations.

Cancel serfdom concerned a small part of the Siberian population. The landed serfs accounted for only one-thousandth of the inhabitants of Siberia. In 1858 -1859 years in Siberia, there were only 36 landowners who owned populated estates. But the abolition of serfdom had an impact on the growth of resettlement in Siberia and the spread of capitalism in the Siberian margin. It led to the economic development of new lands, gave impetus to the decomposition of the peasantry in the field of the new settlement. Lack of landlordism boosted capitalist relations in agriculture, but the remaining vestiges of pre-capitalist slowed it down.

For industrial and commercial center of the bourgeoisie it was not profitable the development of the local industry. They were afraid of competition from the Siberian products. To eliminate it was done the credit system of the Siberian merchants by the capitalists from center. Siberian merchants received credit primarily in goods rather than in money. First of all they became the intermediaries between the Siberian and European markets, and not independent entrepreneurs owning large net worth both for trade and for industrial purposes. Not by chance in management reports of the Siberian province noted the lack of cheap credit and capital for the local industry development.

Siberian bourgeoisie, selling high-margin products, buying and reselling furs and agricultural products, considered trading more profitable than the organization of industrial enterprises. Siberian merchants had industrial companies, but they held them on the subordinate place in comparison with the trade. The exception was gold mining.

The reason of the weak industrial development of Siberia was the lack of population and economic development of the vast region, which led to the restriction of industrial products market, remoteness from the major industrial centers because of poor lines of communication. Local industry could not compete with more industrialized European part of Russia and the Urals. Rent and land purchase existed in Siberia in a small extent. Land was the property of the state (except for private, Cossack, city, monastery).

The industrial boom of the 90s and the construction of the Siberian Railway caused a significant recovery of the regional economy, the Russian-Japanese war gave impetus to the rapid growth of the kulak farming, who enriched on the supply of products for the army. After the first Russian revolution Siberia experienced powerful industrial boom, which was replaced during the First World War chaotic reorganization of production.

Siberia remained industrially backward margin. Its vast natural resources were used poorly. The largest industrial groups prevented the development of Siberia and metallurgical engineering. Almost all metal products were imported from the center of the country or from abroad. The rich hydropower resources were also used poor. It caused

for the disproportion between the different branches of mining and manufacturing industries. A considerable part of raw materials (ores, wood, agricultural products) exported without processing.

Capital has transformed economically the patriarchal Siberian village. There was a specialization of agricultural production; grain farming and cattle trade were developing by that time. Sales of agricultural products went to the large Russian and foreign companies.

Availability of vacant land provided investment of capital into the land. There was, the US dominated evolution of agrarian type in Siberia. On the eve of the First World War Siberia was one of the main granaries of the country due to the relocation of millions of peasants to the outskirts.

The resettlement of peasants to the outskirts and especially in Siberia had great significance during the Stolypin reforms, the aim of which was to preserve the landlordism by creating support - the kulaks. Siberia had backward industry. It showed the structure of its trade with the European part of Russia.

Exported arable products amounted 58%, livestock products - 19 %, products of the mining industry - 23%, and among the imported products industrial products accounted for 99%.

The First World War (1914) has had a serious impact on the economic development of Siberia. The war has created conditions for widespread development of the cooperative movement. Large-scale speculation of the big capitalists and an acute shortage of industrial goods have caused a massive influx of the peasantry into the consumer cooperatives.

After the October Revolution were nationalized large, medium and small businesses. After that were also nationalized transport, trade, and all banking and credit institutions eliminated commodity and stock exchanges.

But after a few difficult years the government realized the need for "radical change" This change was socialism.

The main content of the new economic policy was to stimulate commodity-money relations, economic enterprise, initiative, a material interest in the results of work of each enterprise and each worker.

With the transition to the new economic policy (NEP) were lifted restrictions on private sector activities. In July 1921, legislation has been admitted the existence of simple partnerships, in July 1922 - the joint stock companies, general partnerships, limited liability partnerships. The new economic policy has contributed to the restoration of agriculture. The main place in food production and agricultural raw materials took individual peasant farming.

But during the reign of Stalin these democratic tendencies were suppressed. The most characteristic features of the administrative-command system created at the time were the total nationalization of the economy and social life, general bureaucratization, suppression of democracy and transparency, mass repressions. Most of all this affected the trade. Establishment of maximum retail prices created a stable position on the market, private trade had to reckon with the state prices. First a private large wholesaler was displaced from the market. The network of state and cooperative trade expanded in a large scale. Changes in private trade led to its crushing: the wholesale - in wholesale and retail and then to the small retailing. By the end of 1926 private capital occupied a subordinate position in relation to the public capital and was only in the retail trade.

NEP years have created favorable conditions for the revitalization of private entrepreneurship. Since it was promoted by two circumstances: the denationalization of small enterprises and legislative authorization promoters' activities. Without notice of local authorities individuals could open a manufacturing plant with number of hired workers from 10 to 20 people. Since the official recognition of entrepreneurs began their

competition with state-owned enterprises. Small production allowed to respond flexibly to changes in market conditions, and small business enjoyed immediate errors and difficulties of state enterprises. Of course, it is impossible to exaggerate the successes of entrepreneurs because their activities had quite a few negative traits (ruthless exploitation of wage-workers, unhealthy crime situation, etc.).

Next stage in the history of domestic business has been the longest and most dramatic. It included about 60 years - from the late 20s until the second half of the 80s. It was a period of unchallenged dominance of administrative - command system. Entrepreneurship was practically driven from the legal sector of the economy and became illegal shadow economy.

Radical economic reforms in the 80s in Eastern Europe, the growth of economic difficulties in our country forced to rethink many of the realities. As a strategic objective of the further economy development was a radical restructuring of the economic system. Administrative - command system began to break down, It was created conditions for the transition to a market model of society. It required a fundamental change to private property, competition and entrepreneurship.

The domination of the bureaucratic oligarchy eventually led to a crisis of our society. And this is the main price we have paid for decades of bureaucratic absolutism. The roots of the crisis lie in the alienation of every citizen of the ownership and management of society, a lack of democratic relations between the authorities and society in deficit of publicity. To overcome the crisis, it was necessary restructuring, which opened the current stage of development in Russian business.

Entrepreneurship, as the experience of developed countries, is an indispensable force of economic dynamics, competitiveness and social prosperity. Because an entrepreneur is always the innovator, implementing commercial new technologies, new forms of business organization; an initiator that connects all factors of production into a single process of goods and services production for profit; production manager, a person that is not afraid of risk and takes risk in order to achieve his goal.

Lack of own practical experience of entrepreneurship makes to borrow it from the West. This is natural. But it is not necessary to copy the West. It will not lead to positive results. The development of business in Russia is a long way and this way is not always smooth.

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LAST YEAR OF LIFE AND CREATIVITY OF P. I. TCHAIKOVSKY: 'PATH' FROM THE FUTURE

Abstract

The paper discusses the last year of life and creativity of P.I. Tchaikovsky, which is interpreted as a nonlinear process including a 'cascade' of bifurcations and divided into three stages: order - chaos - new order. We are talking about fractals-processes of elementary, middle and final stages of development, as well as the presence of a 'point of golden section', which is the characteristic of non-linear systems of different origin having similar processes of self-organization. From the standpoint of synergy version, the composer's death appears in a different light. It becomes clearer contours, as synergistic simulation is based on real and specific facts of the biography of the composer. Perhaps, P.I. Tchaikovsky 'creates his own future, which leads to a restructuring of his consciousness. The feeling of fear of death disappears, and tired soul finally finds peace.

Keywords

P.I. Tchaikovsky, D.M. Ratgauz, romances, bell, death,
nonlinear process, synergistic modeling

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Updating of a synergetic paradigm is obvious: thanks to synergetic the known phenomena and processes of the nature, culture and art appear in a new light. The evolutionary-synergetic approach is very effective in studying difficult open systems of the most various origin. It makes possible to define the general tendencies and universal algorithms of their development, explain genesis of new structures and model nonlinear processes (*Knyazeva, Kurdyumov, 1994; Knyazeva, 1998; Melik-Gayzaky, 2001; Budanov, 2007; Bransky, 2009*).

The synergetic model of evolution finds new prospects in understanding pressing problems of the present: the description of the difficult open systems of such scale, as the Universe, the Metagalaxy or the Terrestrial biosphere; allows to comprehend problems of survival of the Person and the Mankind, feature of self-organization of biological and social objects in other foreshortening. Besides, the evolutionary-synergetic approach is very productive in research of the phenomena and processes of musical art: from new positions, it is possible to comprehend musical style and musical form, carry out the analysis of life and creativity of the musical genius (*Klyuev, 2010; Grushko, 2013, 2014, 2015*). In this way, we will consider the last year of life and creativity of P. I. Tchaikovsky.

Despite wide recognition and sincere delights of public, Pyotr Ilyich is weighed upon life of 'the wandering star' as he excessively is tired of continuous moving and 'obligatory inaction'. Minutes of 'absolute happiness' and 'pleasant condition of spirit' are short-termed, and are often replaced by disappointment: "There is a wish to write nothing, except plaintive outpourings. It is really amazing that I do not go crazy and I do not get sick from phenomenal, terrible melancholy" (*Tchaikovsky, 1979, 211-212*). However,

sometimes he becomes almost cheerful as if *something* exempts him from sufferings and gloomy conditions of spirit. "You cannot imagine, - Pyotr Ilyich writes to his nephew Vladimir (Bob) Davydov, - what pleasure I feel, having convinced that time did not pass yet and that it is still possible to work" (*Tchaikovsky, 1981, 43*).

Though Pyotr Ilyich's mood is not coordinated with feeling of near death in any way, in compositions of the last year of life its image appears in various forms. So, the hero of the romance 'Night' (No. 2) from a vocal cycle, op. 73 (1893) on D. M. Ratgauz's verses is in a borderline between dream and reality, life and death, his forces die away. He suffers from hopelessness: "weak light of a candle grows dim", "the gloom is sad", "with the past ... the soul leads the conversation ...". Here Night is the synonym to death. The hero - the poet - the composer mourn each other, and also - everyone themselves. Chromatic groans-sighs with motive of "protivleniye" (a specular reflection of melodic turns in accompanied voice part) in combination with measured blows of a funeral bell (their 27) display a terrible condition of agonal languor. The same state is in the final of the cycle, in the romance "Again, as Before, Alone" (No. 6), where bell soundings (their 25), faltering in the beginning, announce transition to new measurement: the bell consecrates a way to other world.

Many poets are known to reflect painfully life and death. For example, A. N. Maykov wrote: "The death is a secret, the life is a riddle. Where is the decision? Chain? End? Ahead is disappearance or the wreath of immortality?". The shrewd psychologist I.F. Annensky tragically endures every minute of decreasing life and feels a borderline - 'here and there': "Oh, heart! When, freezing, you mortal will feel fear, there will be a hand that silently rock lira in a body, and return you, my heart, to the world, to the desired world!".

The death problem, destroying and making senseless, excites I.A. Bunin. Perhaps, life is given for 'struggling' with it: "Whether we are born with feeling of death? And if not ... I would love life as I love it ...?". His hero Arsenyev suggests: "We have no beginning and no end". Only memory unites generations and resists to death, non-existence, loneliness (*Bunin, 1978*).

M. Zarechny argues in a similar way, but from positions of quantum physics and esoterics: "... our true 'I' was never born and would not die ... 'I' is not a body and not a wave. It is the Ocean. And is transition of the one wave to another, when you are the Ocean, death?" (*Zarechny, 2007, 177*). John Donne does not agree with it, as "... the death of each person belittles me also, because I am unity with all the Mankind, and therefore do not ever ask, for whom the Bell tolls: it tolls on You" (*Donne, 2012*).

Unlike them, supporters of synergetics believe that 'the brain environment' of a person as *the self-organizing* system serves as 'ground' for turning on mechanisms of self-organization at interaction with the world (*Knyazeva, 2000; Kagan, 2003; Knyazeva, Kurdyumov, 2006*). Balancing between chaos and order, the self-organizing system gets to an attractor cone that affects its behavior. Thus, memory does not disappear - it remains and continues to work, memory is the future of the past.

The self-organizing system seeks for self-preservation, infinitely comes back to the old 'to break' to the new, and, above all - exchanges energy and information with other systems. If their parameters coincide, there is a resonance effect, and information is demanded. In that case the law of analogies works: *the similar is attracted by the similar*.

Therefore, it is not surprising that, being at peak of creative glory, the composer, despite of load, pays attention to creativity of little-known, but 'talented poet', D. M. Ratgauz, and composes romances on his verses. Concern, continuous efforts, delay before the departure abroad, "to rewrite one opus": "I do not know what will be destiny of our romances, but I know that I wrote them with a great pleasure", - Pyotr Ilyich tells from Paris to his reporter. And, later he notifies: "... our romances are ready for printing" (*Tchaikovsky, 1981, 92, 111, 135*).

Pyotr Ilyich repeatedly emphasizes - 'our' romances, though he was not personally familiar with the poet, never met him, and saw his 'portraits' only in July, 1893, after writing the romances. "I do not doubt your sincerity at all", but, why "the tone of your poems is minor, your lira is adjusted on very sad harmony", and life "is sad and is inseparable with melancholy?". Why there is a tendency to grief and sadness? "I have a claim to be very sincere in the music- meanwhile after all I am mainly inclined to sad songs too, and like you ... *I can consider myself a happy person!*" (*Tchaikovsky, 1981, 135, 153-154*).

Pyotr Ilyich does the first sketch to the romance 'The Sun Has Gone' at once, on the letter of the poet from September, 26 (1892) (*Tchaikovsky, 1979, 36*), which predicts the future in the verses: "Friend! Pray for me. I am praying for you!", seeking 'to see clearly' his own in him, and him is in his own. Any text can contain a prophecy, which *itself* influences future events and predetermines them (!). There is an unconscious expectation of realization of the told and its embodiment in life. In particular, 'the practicing philosopher of life' psychologist E.A. Tsvetkov does not doubt: "We create texts and we spin fabric of the destiny" (*Tsvetkov, 2006, 40*). Therefore, everyone is able to start the program of future events as the word possesses the magic force.

This version has scientific justification. The perception (knowledge) defines external reality through process of the circular organization of nervous system: *the learning person creates the world, both changing it and changing himself* (*Maturana, Varela, 2001*). Therefore, many 'prophecies' are called into question. Perhaps, their authors 'create' the future, but do not foresee it. In life of the personality, nonlinear in all respects, "... the past does not predetermine the present - it is determined by unknown the future ... attraction force of the present to the future" (*Kagan, 2003, 221*).

In February (1893), Pyotr Ilyich tells to his brother: "... I will compose small pieces for piano and romances, the symphony which then is again conceived, then opera, and then, perhaps, I will stop" (*Tchaikovsky, 1981, 34-35*). About what there was a phrase "I will stop"? Unless he feels 'something hopeless, final' and endures 'a mysterious stage' on the way to a grave? Or he has fatal presentiments and thoughts of death? There are no data about it. However, the negative installation in verses influences Pyotr Ilyich, and he follows it - the 'mysterious sympathy', which at once doubled after contemplation of portraits of the poet develops into something bigger. Accepting negative installation as 'the project of the future', the composer starts preparing his 'scenario' - creates a cycle of romances (on April 22 - on May 5, 1893). Preceding non-existence, psychological states of the hero - the poet comprehends as own. Then the feeling of tranquility comes, and sensation of fear of death disappears - its inevitability ceases to seem accident. On the contrary, the death becomes rescue as it exempts from terrestrial sufferings (night - dream - death).

Perhaps, the aspiration to counterbalance himself with the world leads to turning on protective mechanisms and reorganization of consciousness that, in turn, blocks the program of self-destruction. Therefore, individually developed mental protection through *a bell* that reflects a Christian synergy - a unification with the God - releases Pyotr Ilyich from 'fatality captivity'. However, the attempt to rescue himself and enter the new life, even if the sufficient potential of Divine Love is saved up, is unsuccessful: "Devilish life! There is no any pleasant minute: only eternal fear, melancholy, fatigue ... but now hour of release is close", - he exclaims (*Unknown Tchaikovsky, 2010, 400*). Though the bell, which mourns 'the gone ones' and rescues 'still not gone ones', is consciously chosen by him as a security measure, but "sacred faces are mournful and severe and the bell hoots, without stopping ... and heart is torn, and so is the destiny" (*Dvoryashina, Eshurin*).

So, the version of P. I. Tchaikovsky's death is offered. From the synergetic point of view, the last year of life and works of the composer is process, *nonlinear* in all respects, is "path" from the future. Mystical seems the fact that the turning point in his destiny

coincides with the 'point of a golden ratio', separating the past and the future, an old regime from a new order, life from death. In this time appears a vocal cycle on D. M. Ratgauz's verses.

As any nonlinear process, the last year of life and creativity of P. I. Tchaikovsky includes three stages: the beginning - the middle - the end or, according to synergetic terminology, order - chaos - the new order. It is about fractals-processes of the initial, average and final stages of development peculiar to the self-organizing systems of the most various origin possessing similar processes of self-organization. In relation to the 'late' period of life and creativity of P. I. Tchaikovsky, these stages are as follows:

The first stage (order) - the past. Fatal 'acquaintance' with the poet D. M. Ratgauz (August-September, 1892) and information from the future; vigorous creative activity; creation of a number of works, including, Sixth symphony and vocal quartet 'Night';

The second stage (chaos) - a turning point between the past and the future, an old regime and a new order, life and death; symbiosis of the future - the past - the present, 'a point of a golden ratio'. Creation of romances as 'the project' of the future (on April 22 - on May 5, 1893); identification of himself with the hero - the poet; search of evolutionary alternatives and transition to a new state;

The third stage (the new order) - the future. Completion of process; sudden illness (October 20, 1893) and death (on October 25, 1893).

From synergetic positions, the new version of death of P. I. Tchaikovsky, receives, as it seems to us, rather serious justification, but, of course, can not be considered the ideal. Thanks to synergetic modeling, it gets accurate contours as it is based on the concrete and real facts of the biography of the composer, but not on fictions. Perhaps, Pyotr Ilyich himself 'creates' the future, knowing that such is his destiny. Even the illness, which blocks 'the wrong' behavior and the program of self-destruction, does not help him to change (Lazarev, 2008; Posnansky, 2011). However 'path' from the future allows to overcome sensation of fear of death and to find rest.

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FINANCIAL AND SOCIAL FORMS OF MOTIVATING UNIVERSITY PROFESSORS TO PERFECT THEIR PROFESSIONAL ACTIVITY

Abstract

In the paper, some topical problems concerning the financial position of the Russian university professors and different methods of financial and non-financial character that are meant to stimulate the faculty for continuous self-perfection and professional development are discussed. The analysis of the working conditions of the Russian professors shows that due to an extremely high teaching load they lack time for scientific research and other forms of activity. Having described the consequences of the crisis that struck the soviet system of higher education in 1990-s, the authors examine the present-day situation and come to the conclusion that Russian higher education again faces a crises, but this time it is provoked by organizational and social reasons. In this hard period, some urgent measures should be taken - in a form of financial and social stimulation - in order to support the Russian professors and to create safe and stable conditions for their personal and professional development. The results of the survey, which is aimed to highlight some topical problems in the life of the Russian professors, are presented. They show that not all the methods of professors' stimulation exist in Russia, and some of them are less popular among the Russian scholars than among their foreign colleagues.

Keywords

professor's salary, forms of remuneration and allowances, teaching activity,
scientific research, teaching load, methods of stimulation,
professional development, financial and social forms of motivation

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Introduction

Nowadays, when indices of the university professors' efficiency in education and scientific research have become one of the most important aspects in the international university ranking, the administration of the universities has been taking different measures to stimulate the faculty to improve their work. If Russian universities want to occupy a leading position in the world ratings, to attract numerous foreign students and to gain an international reputation, then the professors are to correspond in all the aspects of their professional activity to their foreign colleagues (*Kehm, Stensaker, 2009; Belotserkovskiy, 2014*). And if in the sphere of education and personality's development, as well as in methods of teaching and students' progress assessment Russian professors have achieved world-wide recognition, many efforts should be taken in other directions of their professional activity, especially in presenting the results of scientific research in international scientific journals.

Topicality of studying different forms of stimulating the Russian university professors is based on the fact that their professional activity at the universities is very hard due to a large teaching load and a small salary compared to those of their foreign colleagues. In the result, many talented teachers quit their work at the universities and start looking for higher incomes in different companies and enterprises.

Therefore, the main objective of our research is to define the most efficient forms of financial and social motivation that make university professors work harder and with a greater degree of international recognition and factual output.

Taking into account a complex character of this problem and various approaches existing in different countries, this objective can be gained through a number of the following goals:

- 1) to compare the working conditions of the university professor in Russia and abroad;
- 2) to analyze what forms of professors' stimulation are used by the university administration in Russia and other countries;
- 3) to define the efficiency of the stimulation methods.

Materials and Methods

1.1.

1.1.1 It is a matter of common knowledge that professor's occupation is considered highly prestigious, especially in the countries with a low level of literacy. A well-educated teacher, having not only secondary but higher education as well, has been always esteemed as a person possessing the latest knowledge, innovative skills and ability to communicate with any authorities defending the rights of the poor and illiterate. So the social attitude to the university professor could be described in the soviet epoch of the Russian history. However, any political and social crises make a strong strike on intelligentsia, and professors in particular. That is why, in the mid-1990-s due to unstable financing many of the professors had to go abroad or to start working in the commercial firms getting positions not connected with their qualification.

This hard period for Russian professoriate is characterized by:

- decrease of state financing of higher education;
- destruction of material and technical facilities of the universities;
- reduction of the prestige of higher education;
- changes in the goals of getting higher education;
- outflow of the teaching staff into the other more profitable businesses;
- breaking of the system of reproduction and replacement of the high-skilled professors.

However, at the end of the 20-th - the beginning of the 21-st centuries the situation with higher education in Russia had stabilized and many of the faculty returned to their

teaching profession. A number of the most important international indices in the sphere of higher education were restored:

- literacy rate in the country;
- a number of the students per 10000 people of population;
- expenses of the state budget for education;
- a share of expenses for the faculty;

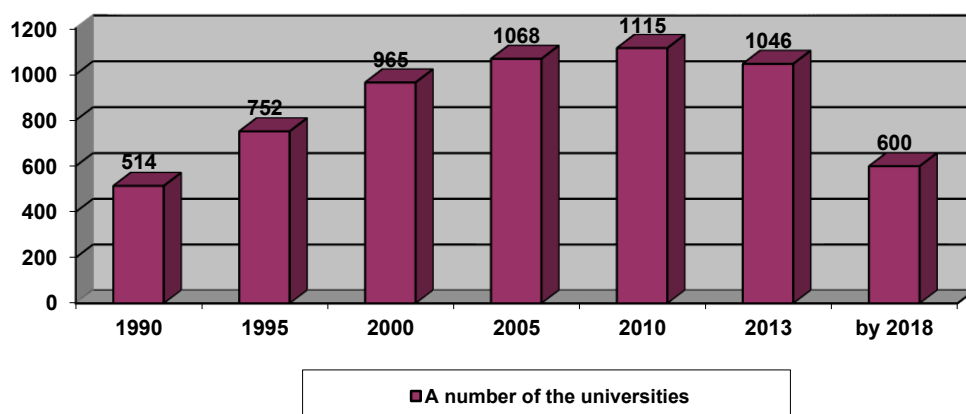
– intellectual potential of the faculty increased: within the period of 1990 - 2010 a number of doctors of sciences grew from 13,700 to 47,000 (*Yegorshin, Gus'kova, 2014*).

1.1.2 A new crisis in higher education in Russia, which started in 2010-s, has not been connected with political problems. It mainly has social and organizational reasons.

One of the problems that has strongly influenced the professional activity of the Russian professors is reduction of the universities.

A number of universities in 1990-2010 grew very quickly and without any control. In 1990, there were 514 universities, institutes or academies, in 1995 - 752, in 2000 - 965, in 2010 - already 1115. Even now more than 500 private / commercial universities, i.e. 41% of the total number, continue working. The most shocking fact was that all these universities had the right to issue state diplomas though the level of their teaching and material base are sometimes absolutely unsatisfactory. Therefore, the Russian government took a decision to introduce strict criteria to the universities and to decrease their number radically: in 2013 only 1046 universities were left and by the year of 2018 it is expected to reduced the number of universities to 600. The process of reduction is visible on the diagramme 1 (*Yegorshin, Gus'kova, 2014*).

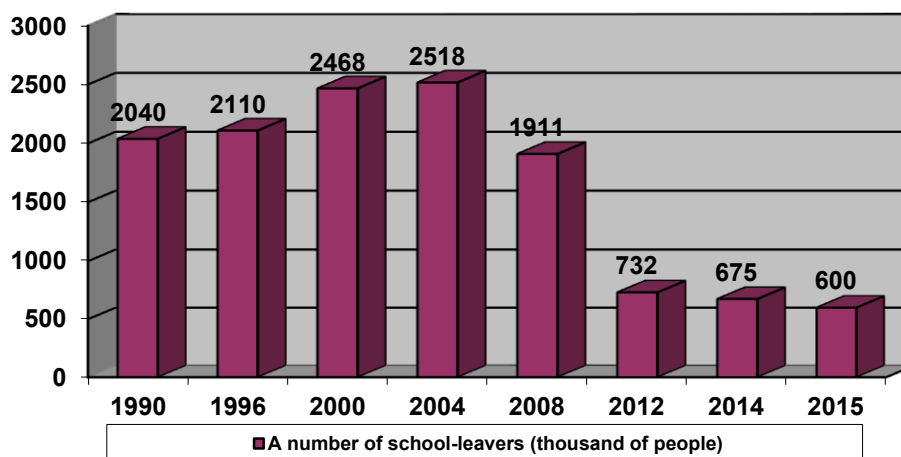
DIAGRAMME 1. CHANGING NUMBER OF THE UNIVERSITIES IN RUSSIA



In the result of constant checking of the universities and under the threat of being dismissed, many professors, especially those who have reached a pension age or do not have academic degrees, feel unsafe and do not take any attempts for further professional development.

1.1.3 Another problem is a demographic crisis in Russia, concerning a reducing number of school-leavers. Before 2004 there was a stable increase in a number of school-leavers (2518 thousand people), but after that year a reduction is marked [4]. In 2015, only about 600 thousand young people have finished school [5]. The statistic information is presented in a diagramme 2 that is composed by the authors.

DIAGRAMME 2. A DEMOGRAPHIC SITUATION WITH SCHOOL-LEAVERS IN RUSSIA



1.1.4 As in Russia there is a fixed number of students per a professor at the university (it is stated in governmental documents), the demographic fall also leads to a decrease of a number of the faculty. In one of the latest state documents on the problem of Russian education development the number of students is expected to decrease within a period of 2012-2018 from 6940 thousand people to 5145 thousand. At the same time, a number of students per one professor will be increased from 9.4 till 12 [6]. If to make some easy calculations and to take into account that in 2012 there were 690425 professors, then by the year 2018 the number of professors will have reduced to 428750 people, i.e. it will make 68 % from the present staff. At the same time, teaching load will almost increase by 28%.

At the same time there are absolutely different conditions for the professors in the leading universities of the country, mainly concentrated in Moscow and St. Petersburg and getting quite different financing from the government. According to the resolution of the Government of the Russian Federation the correlation between daytime students and professors will be: at the Moscow State University named after Lomonosov - 1:4; at the Highest School of Economy - 1:4; at the Moscow State University of Humanities and Economy - 1:3; at the Russian School of Private Law (Institute), Moscow - 1:2 [7].

The reduction of a number of the faculty will inevitably lead to an increase of the teaching load that used to be much larger than in the foreign universities. Though, the universities have the right to set their own requirements to a teaching load they have to take all the above mentioned factors into consideration. According to the distribution of the teaching load for the academic year 2015/16 it will be 900 and even more academic hours per year for an assistant, 850-900 - for a senior teacher (lecturer), 760-850 - associate professor / assistant professor and 650 - for a professor. Reading this statistics, it is difficult to imagine how and where the faculty will be able to find time for other forms of activity, especially scientific research!

1.1.5 The situation with the faculty in Russian universities is aggravated by a low salary compared to the earnings of their colleagues abroad.

According to a profound international survey of professoriate salary and other forms of remuneration (*Livanov ...*), professors in Russia get much less salary than their colleagues in any other country of the world. The professors' salaries were transferred into American dollars and the stock was calculated on the index of purchasing-power parity (PPP) (*Andruschak, Yudkevich, 2012*). All the categories of the professoriate were divided in to 5 levels, in those countries where it was possible (level 1 - full professors, level 2 - associate professor/ reader, level 3 - assistant professor, level 4 - lecturer, level

- 5 associate lecturer), and the average monthly salary in the state universities was calculated compared to PPP index. The results are shown in table 1.

TABLE 1. AVERAGE MONTHLY SALARY IN THE STATE UNIVERSITIES (IN USD)

Level Country	The highest Level 1	Level 2	Level 3	Level 4	Level 5
Australia	7499	no information	6240	5183	3930
Great Britain	8369	6050	5276	4077	no information
Germany	6383	5184	4326	4927	4885
Russia	910	650	476	433	no information
The USA	7358	5853	4950	no information	
France	4775	3705	1973	no information	

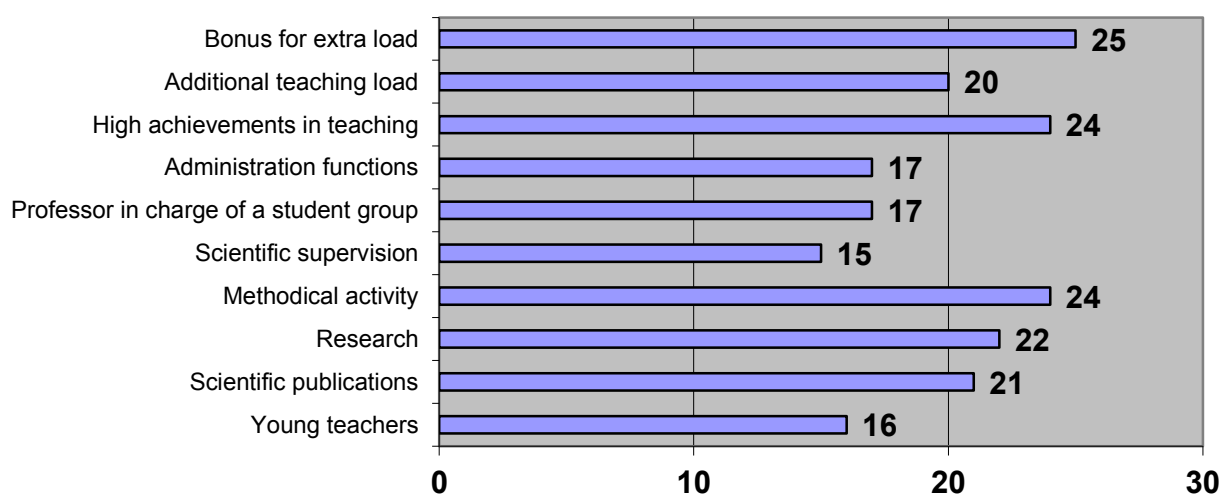
A salary of a Russian professor usually consists of two parts: a budget component (i.e. a legally fixed rate of tariff, which is not more than 25% of the average salary in Russian economy) and different forms of allowances, which can be paid to a teacher for some additional services. A budget component makes not more than 65-70% of the salary. The amount of the allowances depends on the status of the university, its commercial income and other factors.

A budget component is also dependent on the following factors:

- a professor's rank or position: the higher the rank, the larger a fixed rate of tariff is;
- availability of a different scientific degrees;
- an amount of a teaching load;
- availability of administration duties (additional position, for example, head of the chair, or dean, etc.).

According to the research of G. Andruschak and M. Yudkevich, the following categories of the professoriate can get additional financing (diagramme 3) (*Andruschak, Yudkevich, 2012*).

DIAGRAMME 3. A SHARE OF THE PROFESSORS WHO GET ADDITIONAL ALLOWANCES FOR SPECIAL ACTIVITIES



To sum up the information about the working conditions of the Russian professors we can state that lately a new crisis in higher education has begun. It has been conditioned by social and organizational factors, by the decision of the government to reduce a number of universities and to dismiss, consequently, some part of the professors. A low salary of

the Russian professors compared to the income of their colleagues abroad as well the average salary in Russian economy cause the outflow of young and talented scholars from the sector of education.

2.1. In order to enumerate other forms of professors' stimulation and remuneration (besides salary) used by the university administration in Russia and other countries we conducted a survey among the professors of the Russian universities and analyzed scientific literature on the problem of investigation (*Andruschak, Yudkevich, 2012; Commonwealth of Australia, 2002; Mullin, 2012*).

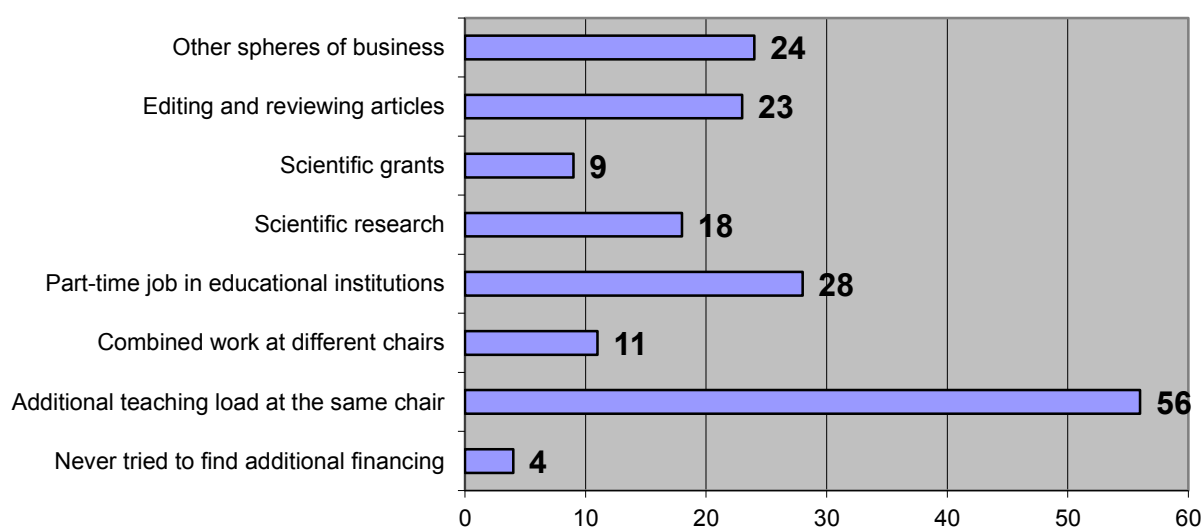
The survey was carried out for a period of 3 months in February - April 2015 with 76 participating professors from 15 Russian universities. The professors were asked to fill in a questionnaire about different forms of additional remuneration and allowances they get (taking into account a personal character of information, the questionnaires were anonymous; the professors were only asked to indicate their position at the university).

The first group of questions was aimed to find out if the Russian professors had any necessity in getting additional remuneration to their salary and where they realized their intentions. The results of the answers are presented in the diagramme 4. Only 4% of the respondents answered that they had never tried to find some additional financing. The larger part of the professors (56%) tries to get additional teaching load at their chair and 11% of the faculty usually combine work at two or more chairs of the same university. About one-third of the respondents (28%) does not mind a part-time job in other universities or educational institutions (private institutes and schools, commercial colleges or lyceums). Only 18% of the scholars get allowances by means of doing scientific research and even less number (9%) managed to get a grant for conducting research. Almost a quarter of the professors (23%) get additional financing by editing the articles and textbooks, writing reviews to the scientific papers of their colleagues. About 24% get remuneration in the other spheres beyond educational or scientific activities.

Results

The results of our survey once again prove that for the Russian professors teaching occupies a leading role in their professional activity: it is not only regarded by them as a main type of activity but it is favoured by the professors because it brings a real income.

DIAGRAMME 4. WAYS OF GETTING ADDITIONAL REMUNERATION FOR THE RUSSIAN PROFESSORS



The difference in answers among the professors belonging to various ranks was in the following:

– for the teachers who occupy the initial positions in academic ranking it was sometimes difficult to get additional teaching load at the same chair or at other chairs of the university. So, being younger and more mobile, they tried to get additional financing in other business or other educational institutions.

– Their more experienced colleagues, full professors in particular, were mainly financed on the territory of the university and by means of reviewing, consulting and editing.

– Additional financing was required not only for young teachers but for their more experienced colleagues as well, because the amount of official pension is insufficient.

In the result of the analysis of the scientific literature (*Andruschak, Yudkevich, 2012; Commonwealth of Australia, 2002; Mullin, 2012*) and the second group of questions in our questionnaire, we singled out the most popular methods of financial and social motivation of the university professors in different countries. It should be noted that social forms of motivation are more common for the countries with a lower level of financial incomes, so they are considered as significant bonuses for the professors in the developing countries. The main forms of stimulation of the university professors in different countries are:

– a shorter period of promoting to a higher academic position or obtaining tenure (*Ast, 2013*);

– bonuses to the salary for intensive work, extra academic hours and additional assignments;

– special stimulating / or efficient contracts which legally guarantee some additional remuneration for extra work (*Borovskaya, Masych, Shevchenko, 2013*);

– free accommodation on the territory of the university;

– free kindergartens for professors' children;

– a long paid leave;

– a paid sick-leave;

– a sabbatical up to 7 years which can be used for traveling, professional development, studying, writing of the scientific papers, etc.;

– a possibility to take a bank loan being a member of the university staff (*Rumbley, Pacheco, Altbach, 2008*);

– assessments to pension fund (*Rumbley, Pacheco, Altbach, 2008*);

– some types of discount (for example, discounts for education of the professors' children or for booking the university camps or hotels on the sea-side);

– grants and business-trips to the conferences and other universities;

– different types of insurances paid by the universities.

We suggested our respondents to rank the efficiency of the mentioned methods of financial and social motivation of the faculty and to mark their potential in perfecting their professional activity. The professors were asked to put 0 if this method of stimulation is not available in Russia; 1 - if they do not consider it an important method; 2 - if this stimulus can be regarded as an important one for some part of the staff and 3 - if it is super-important for the entire faculty. The results of the survey are shown in table 2.

So we see that only two positions got the highest rating, they are bonuses to the salary for intensive work, extra academic hours and additional assignments and a long paid leave. These results again prove the fact that the professors associate their remuneration with a teaching activity. They really appreciate a long leave because they can use some part of it for scientific research or additional part-time work. Some of the methods are not available in Russia, but, for example, different types of discount are very popular among the professors in Brazil, Argentina, Nigeria and the Netherlands and their colleagues in India, Lathvia and Nigeria enjoy paid dwelling (*Andruschak, Yudkevich, 2012*). A new form of a contract between the university authorities and a professor which is called a stimulating contract is only being introduced into the system of higher

education in our country. There is not much experience with it but all the professors hope that it will make their life more stable, well-paid and balanced.

TABLE 2. FINANCIAL AND SOCIAL METHODS OF STIMULATING THE PROFESSORS

Methods	Rating
A shorter period of promoting to a higher academic position or obtaining tenure	2
Bonuses to the salary for intensive work, extra academic hours and additional assignments	3
Special stimulating contracts	2
Free accommodation on the territory of the university	0
Free kindergartens for professors' children	0
A long paid leave	3
A paid sick-leave	1
A sabbatical which can be used for traveling and professional development	0
A possibility to take a bank loan being a member of the university staff	1
Assessments to pension fund	1
Some types of discount	1
Grants and business-trips to the conferences and other universities	2
Different types of insurances paid by the universities	0

Conclusions

In the conclusion we would like to mention that the professors state in their answers that they actually need less teaching load and more time for self-development and scientific research. This problem should be settled by the Russian government if our country is really interested in a high quality of young specialists' training and a well-grounded prestige of the Russian higher education.

The results of the survey presented in this article can be used in perfecting the personnel policy in the Russian universities as well as in planning new forms of legal relationships among the university administration and the faculty.

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INFORMATICS AS A SCIENCE:

AN ATTEMPT TO COMPREHEND THE CONCEPT

Abstract

In this paper, the author describes the problem of the definition of the notion of informatics. Based on the comprehending of the phenomena of information, information processes and information technologies, a terminological analysis of this notion is presented. The authorial handlings of informatics and information society are given.

Keywords

informatics, information, information processes, information technology

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Introduction. In general, the terminological analysis is one of the theoretical methods of research, which is aimed to disclosure the phenomenon by means of detection and clarification of values and meanings of terms denoting it. The result of our analysis, aimed at the concept of informatics as a science, should be the definition of this concept. The sequence of the terminological analysis in this article is "information - information process - information technology - informatics."

The phenomenon of information. In recent decades the concept of information has become one of the most common and frequently used concepts: it is used everywhere and, sometimes, in the fields that probably don't need it. Today the term "information"

is included into the terminology of almost all modern sciences; for this reason it is recognized as a general scientific concept.

The historical path of this concept is rather ambiguous, although in languages it was fixed in the 14th century. The word “information” entered the Russian language in the age of Peter the Great through the Polish “informacja” which comes in turn from the Latin “information.” In the meaning of “an idea, the concept of something” it was recorded for the first time in “Spiritual Regulation” (1721). The Latin word “information” is formed from “informo” with the primary meaning “to form, to shape, to create” and with the secondary meaning “to teach, to educate,” “to construct, to make,” and “to imagine, to think.” Thus, initially information is “shaping” (*Fasmer, 1986*). However, information is still one of the most discussed and multivalued concepts in Russian science and philosophy: it has many interpretations, none of which is generally accepted.

All of definitions can be grouped into the seven most common concepts as follows.

1. The ordinary approach in which information is considered as any message, fact, data, and knowledge. In Explanatory Dictionary of the Russian language (2006 edition) T.F. Efremova extended this definition: “An understanding about the world and its processes, as perceived by a person or special devices” (*Efremova, 2006*).

2. The statistical approach, in which information is considered as a message that decreases the uncertainty of its recipient. Outstanding representatives of this approach are the founders of communication theory R. Hartley (*Hartley, 1928*) and C. Shannon (*Shannon, Weaver, 1949*).

3. Semiotic approach. The founders of this approach are the scientists of Stanford scientific school (Stanford University, USA). From the point of view of this approach an implicit (axiomatic) definition of information is given, e.g., through the concept of data. X is information if and only if: (1) X consists of one or more piece of data; (2) the data in X are well formed; and (3) the data in X are meaningful (*Floridi, 2010*). A datum is defined as a putative fact regarding some difference or lack of uniformity within some context.

4. The eliminant approach, which denies the existence of the phenomenon of information in principle. One of the representatives of this approach is the Russian biologist M.I. Setrov, who commented on the phenomenon of information that: “No one has ever seen this mysterious information either as a substance or as a property of something... Why Because it does not exist in nature, just as there is no fluid, phlogiston, or ether” (*Setrov, 1975*).

5. The absolutizing approach, which considers information as a universum of all existence. I.I. Yuzvishin, one of the famous representatives of this approach and the founder of informatiology, considers that “Information is ubiquitous, it is inside of us, outside of us, and in the entire universe, and this is ... the universal beginning of everything, information is primary, matter is secondary” (*Yuzvishin, 2000*).

6. The functional approach, which considers information as a result, as a function of the activity of living beings. Representatives of this approach include Yu.N. Stolyarov (*Stolyarov, 2000*) and D.I. Dubrovsky (*Dubrovskii, 1980*). From the point of view of this approach, information is a subjective reality, because it is “a reflection of the objective causality of the surrounding real world in people’s minds” (*Berg, Chernyak, 1966*).

7. The attributional approach, which treats information as a property of any matter (animate and inanimate) in any form (substance or field). Representatives of this approach include V.M. Glushkov (*Glushkov, 1963*) and V.I. Korogodin (*Korogodin, Korogodina, 2000*). “Information in the most general sense of the word is ... a measure of the changes that have been accompanied by all the processes that take place in the world... Information is carried by not only the pages of a book with letters or human speech, but sunlight, a folded mountain range, the noise of a waterfall, the rustling of foliage, etc.” (*Glushkov, 1963*).

The existence of all these approaches and the diversity of interpretations of the concept of information, in our opinion, have at least two causes:

1. The first cause is the fact that each concept of information was created in the framework of the certain scientific fields and studies, generally in social and humanitarian ones. The specific features of these studies (*Karavaev, 2013*) are embodied in the philosophy of the concept of information. Unlike the natural sciences and technics, in the sociohumanitarian sciences the problem of the interpretation of concepts is more important: many of them are interpreted in different ways. The contextual determination of such concepts is the main cause of the diversity of their interpretations.

2. The second cause is the fact that the different approaches to the interpretation of information relate different phenomena of the world to this concept. Here, it is possible to name at least three phenomena that cannot be reduced to one interpretation:

a) the essential characteristics of matter (in the forms of the substance and field), i.e., the specific features of its structural organization and its properties. These exist independently of the issue of who or what can perceive them. As the British scientist, Tom Stonier, noted "information exists. It does not need to be perceived to exist. It requires no intelligence to interpret it. It does not have to have meaning to exist. It exists: (*Stonier, 1990*)

b) signs and its compositions that can be expressed verbally (words, numbers and other characters), and non-verbally (drawings, diagrams, facial expressions, gestures, etc.). In its broadest sense, as a sign can be understood any socio-cultural phenomenon - from artificial tools and other artifacts to social phenomena, processes and institutions.

c) the values of some sign structures (significants), of symbols, both verbal and nonverbal. As signs, significant exists only within the appearance of selforganizing systems, in particular, the human system, and without such a system this information just cannot exist. As with the meaning of signs, this type of information is really a subjective reality.

In Russian science, in our opinion, the problem of the concept of information and its interpretation is highly exaggerated. In fact, information, like any other word, is just a sign pointing to a particular phenomenon of the world and is used for creating correspondence between the outside world and our inner world of cognitive meanings. It is not for us to decide which of these worlds is the only correct one, because they are created within a certain context. The philosophical problem of information lies in the interdisciplinarity of this term: information is a category of a large number of scientific disciplines, each of which explains it in its own way. This is a normal situation for science at the present stage of its development.

One of the most promising solutions to the problem of the pluralism of the definition of information, in our view, is to bring together different points of view on this concept within exemplification approach to its definition. By this approach, a definition is revealed by a certain set of characteristic phenomena covered by this concept. In this case, the concept of information to be disclosed to the three above-mentioned phenomena. So, in terms of exemplification approach information is 1) the essential characteristics of matter; 2) sign structures and compositions; and 3) significant as the values of sign formations.

Information processes and technologies. Among the many information processes (processes in which an object and/or a result is information) there are three basic ones: storage, processing, and transmission. Other information processes, such as search, creation, verification, analysis, protection, and others can be reduced to these three processes.

As for any process, the information process needs some tools that convert the object to a result, in other words, it needs a technology. In our case, this is information technology. Information technologies, as the technologies of dealing with information, are

the system of means and methods for the implementation of information processes.

In the history of the development of information technologies there have been some key points (the so called information revolutions), each of which provided some cognitive, communicative, or other advantages in comparison with the previous one: (1) the appearance of memory; (2) the appearance of non-verbal languages; (3) the invention of verbal languages; (4) the appearance of writing; (5) the invention of printing; (6) the inventions of the telegraph, telephone, and television; (7) the invention of computers; (8) and the appearance of computer networks and the Internet (*Karavaev, 2011*).

The first three revolutions are the endogenous development of technologies for dealing with information. Verbal and non-verbal languages, as well as memory are internal and personal tools of human beings. The other revolutions are exogenous technologies, i.e., they are external tools for the storage, processing, and transmission of information.

Thus, information technology is a system of means and methods for the implementation of information processes (storage, processing and transmission). There are basically two types of information technology: 1) endogenous (memory and language) and 2) exogenous. The latter type, in turn, has two varieties: 1) mechanical (writing, printing press, telegraph, telephone, television), and 2) automated (computer and computer networks). The appearance of the automated information technology coincided with the formation of a new scientific field - informatics.

Informatics as a science. The formation of informatics occurred in the 20th century. It was connected with the development of computers as a new means of information processing.

In Russian science, informatics was initially considered as the theory of scientific information. This interpretation of informatics was proposed in 1966 by the Russian scientists A.I. Mikhailov, A.I. Chernyi, and R.S. Gilyarevskii. According to them, informatics is the field of human cognition that studies “the structure and general properties of scientific information, and the pattern of its creation, conversion, transmission and usage in different spheres of human activity” (*Mikhailov, Chernyi, Gilyarevskii, 1972*). Today, this approach to the interpretation of informatics is out of date and is not used by modern scientists.

The next stage in the development of the concept of informatics is its consideration as a technical science, associated with the use of computers for information processing, their creation, and their application in all spheres of human life and society. Under this approach, there are many definitions of informatics. Here are some of them, informatics is:

1. “The science of efficient information (which is considered as a presentation of knowledge and messages in the technical, economic, and social fields) processing that is realized mainly by automatic means” (*Bauer, Goos, 1991*).

2. “The sphere of human activity that is associated with the processes of data conversion by computers and their interaction with the surrounding environment” (*Makarova, 1997*).

3. “A technical science that classifies the techniques and methods of creating, storing, reproducing, processing, and transmission of data by means of computer equipment” (*Simonovich, 1999*).

4. “The science of problem formalization, algorithm design for its solving and methods for its solving using computers and computer networks” (*Fridland, 2003*).

5. “The field of activity associated with the development of means of data processing with the use of a computer” (*Okulov, 2013*).

At the present stage of the development of the science the interpretations of informatics under this approach (informatics as a technical science) is one of the most prevalent.

Papers that consider informatics much more widely began to appear later. Informatics, according to them, is a fundamental science of information processes in nature, society, and technical systems. One of the representatives of this approach, the Russian scientist K.K. Kolin, considers informatics as a science “of properties, laws, methods and means of formation, transformation and distribution of information in nature and society, including by means of technical systems” (*Kolin, 2010*). However, in our opinion, such an interpretation unreasonably widely expands the subject field of informatics; according to it “the emphasis is on the concept of information, but there are rather content-rich books about informatics that don’t speak about this concept at all” (*Kanke, 2013*).

Today there is still no accepted definition of the concept of informatics and it still continues to be a subject of scientific and philosophical discussions. In the search for a clear and logical definition of informatics we propose to consider this term according to its etymology. In our view, an etymological approach to the interpretation of the concept of informatics is very promising, because “the meaning of a word is a kind of employment of it. For this is what we learn when the word is incorporated into our language.” (*Vitgenshtein, 1991*).

The French scientist F. Dreyfus is one of the first who proposed to use the neologism “informatique.” This word is formed of the morphemes “inform” and “atique,” which, in turn, are abbreviations of the words “information” (information) and “automatique” (automatic). Thus, initially this word was understood as information automatics. As distinct from, for example, industrial automatics, which is the set of various devices (mechanical, electronic, etc.) and methods of their usage for automatization of technical and industrial processes, the field of study of information automatics, or informatics, is determined by the automatization of working with information.

In the similar meaning at the proper time in the American science the term “computer science” formed as the science of computers, which studies the processing, storage, and transmission of information by different computer and telecommunication equipment. Computer science “is a field of study that is concerned with theoretical and applied disciplines in the development and use of computers for information storage and processing” (*Dodig-Crnkovic, 2002*).

Based on the above and on the study of the subject fields that are studied in the majority of scientific and educational books on informatics, it is possible to justifiably mean by informatics the meaning of the word that was initially in scientific use: informatics is the field of knowledge that studies the use of special tools (primarily computers) for automatization of dealing with information (its processing, storage, and transmission). In other words, informatics is the science of automatization of information processes.

This interpretation of the concept of informatics, in our opinion, clearly specifies the categories of informatics such as object and subject of informatics and its belonging to certain types of scientific knowledge. The object of informatics in this case are the information processes in general, and the subject - the problems of automation of information processes.

Within the classification of sciences in their subject areas (natural, mathematical, social, human and technical) informatics can be attributed to the technical sciences as the automation of information processes is due to the use of technical tools, mostly computer equipment. In the classification of the functional purpose of scientific research (fundamental and applied sciences) informatics is the applied science. The results of computer science aimed at solving specific practical problems (automation tasks), and not focused on “the creation of theoretical concepts and models, practical applicability of which is not obvious” (*Titov, 1999*) (i.e. knowledge for knowledge), as in the fundamental sciences.

Conclusion. So, informatics as the science of automation of information processes is applied, technical science, aimed at solving the problems of automation of information processes through the development of information technology, the creation of programming languages, design algorithms for solving problems, etc.

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MENTAL AND LANGUAGE CULTURE OF INDO-EUROPEAN UNION IN TERMS OF RUSSIAN LITERARY LANGUAGE

Abstract

In the paper, the authors consider the mental and language culture of Indo-European union in terms of Russian literary language. The authors show how the Russian Language unites Slavonic cultures and determines the annexation of the Russian Language into the system of semantic oppositions.

Keywords

internal form, substance, mental culture, language culture, Indo-European Union, Slavonic language, Church Slavonic language, linguistic sing

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Construction of the Indo-European world, on the basis of which the architectural structure "Russia-Eurasia" goes up, begins with a "split" of Sanskrit sign in the Vedic (internal form) and Eastern Orthodox (graphic representation) components. In the 20-30s of the twentieth century Sanskrit is becoming one of the languages of simulating the spiritual space of Russia-Eurasia, reproduced in Cyrillic script of E.I. Roerich and N.I. Roerich in the transposition of "the Living Ethics" in the Russian language. The inner form of Sanskrit, containing the basic features of thinking matter of the Indo-European Union, and the Cyrillic graphics system, which simulates the interaction between the proportions of the sacred in the word (truth) and the profane (common sense) when paired had to show objective connection between the individual states of the types and forms of matter in the process of movement and development, i.e. inherent in all things (substances) as a fragment of the objective reality of inner attitude. "Substance is acting freely absolute reason not only as an engine start, which has all the content produced by it within it, getting presenting the existence in the form of action" (*Hegel, 1964*). The substance determines its own causal structure and determines the orderly connection of thoughts generated by it, as well as follow-up actions predicted with some degree of probability. In the Russian language, presented in the "Living Ethics", the Substance "Russia / Eurasia", one of the derivatives of the functions of which is mental speech, was presented. With mental speech Mr. Hobbes associates seeking out the causes of the past or present, consequence (*Hobbes, 1964*). Mental speech is the result - movement within the individual, which is a remnant of the movements made by the sensation, the reason of which is an external body or object that puts pressure on the body corresponding to each feeling itself, as it is in the case with the taste and touch, or indirectly, as in the vision, hearing and smell (*Hobbes, 1964*).

Consequences of representation of the subject, things change overall concept of things, make it a multi-dimensional, observable in several dimensions. Generated by E.I. Roerich and N.I. Roerich world of intelligible entities is a world of logical relations, which

regulates mental speech of "sanskrit nations" (V. Pisani). Possible subjects of thought of the Indo-European Union, found in the analysis of the literal meaning of "Living Ethics" are shown in Table 1. "Mental language of Indo-European Union".

TABLE 1. MENTAL LANGUAGE OF INDO-EUROPEAN UNION

Partsellaty of «Living Ethics»								Information about IELU
Life is making noise	Be careful It is danger	The Soul hears rustle It's sorely to the world	Hurry to escape - life feeds the soul	Lead yourself using the upper path	Think freely - don't go out of life	Work for life and consciousness of purity - leave all the prejudices	The approval of perfect "I"	The sign circuit of mental speech
Information about partselset								
monade: a symbol of wisdom	duad: a symbol of ignorance	triad: cause the wisdom and understanding	tetrad: the source of nature	Pectade: the symbol of light	hexad: the form of forms	heptad: the number of life, the number of religion	ogdoad: the number of the first cube	Register of thoughts
Mind, a repository of substance	the transition from quantitative accumulation to qualitative changes	unwrapping parcels into holistically-causal chain	swiftness, strength of courage	reconciliation, stripping, providence	time, peace, restlessness	guardianship, luck, case	love, advice law	The image of the which concept it is
linkage between the horizontal and vertical dimensions	gradation from the real I to the perfect I	condition of moderation	modes of existence	subtle plane of social existence	law graduation	submission to the will of the space	love of transcendental god	The syntactic function
the power of center of the universe	gradation from the real I to the perfect I	condition of moderation	physical exhibits intelligent	the public mind	articulation of the universe in thought	the approach to the Absolute (perfect I)	the assertion of self-love	What state of mind is fixed
		the measure of the world	measure of the Soul bottom-up	the measure of man's world	measure of human history - the universe	outline	harmony	Unit (place) in the semantic universe
		resonant excitation (semantic contamination)	recognition of the existence of thin plan transcendental control schemes	subtle plane of social existence	construction of a model of harmony	fluctuation	approval of the conservation law of gravity	What type of interaction with the landscape
			transcendental control of schemes	the principle of the people	[nirvana]	violation of a state of equilibrium	overcoming the force of his being	Motivated symbolic action
				universal world spirit	Don't go	sounds	love of transcendent got to man	Denoted truth (Psychometric)
					life	mystical nature of man	exit to the next level of life	approved Convention
						religion / law expediency Space	preserving the principle of evolution	declared canon
							gravitated energy	X - Existence

V. Pisani transfers the conception of Cr. Sandfelda about the formation of the Balkan linguistic union. V. Pisani states that "it is because Sanskrit has for the most part of the phenomena which are characteristic of a network of isoglosses that constitute the unity

of the Indo-European languages, and due to the fact that these phenomena in Sanskrit form a more closed system than in any other Indo-European language, I come to the conclusion that aforementioned unity with its dialectal differences resulted from the union of language, which includes both the native languages of Eastern and Central Europe, and it is also possible here, and adjacent parts of Asia, as well as language, which is a direct continuation of Sanskrit and which I accordingly call "protosanskritot."

The language plays a role of the dominant language in the formation of the unity of the above Indo-European languages. It can be compared with the role of Latin in Rome in the formation of Vulgar Latin. Most likely it was the process of colonization by the conquerors, who brought a new way of life with them, new technology and new cultural type and gradually settled outside its original area (as I believe, near the Black Sea and the Caucasus), assimilating culturally and linguistically against the autochthonous peoples and undertaking new conquests with these "sanskritic peoples." Prior to the use of data Hetu - luwian and Tocharian languages in comparative grammar of Indo-European languages in comparative Indo-European linguistics, as the E.A. Makaev marks, Indo-European model was based on data of ancient Indian and Greek with the involvement of these Slavic-Baltic and Italian languages. "This Vedic dialect of ancient Indian language was seen as a representative of an ancient Indo-European language of the world, as a language, in which there were the most conserved archaic features of Indo-European structure type" (Makaev, 2004).

There are ten major branches of the Indo-European language family in the "Oxford Illustrated Encyclopedia": Anatoliyskaya (now extinct), Indo-Iranian, Greek (single language), Italic, Germanic, Armenian (single language), Tocharian (now extinct, once existed on the territory of modern China Turkestan), Celtic, Balto-Slavic (Baltic and Slavic languages) and Albanian (single language). Total tree structure of Indo-European language union, or Proto-language allows you to create an idea of the information flows that build mental matter of Indo-Europeans and became the basis of information or network society, the component of which is Russia and language, providing mental activity and mental speech of its citizens-residents.

Based on the factual material of Brief comparative semasiological dictionary of Indo-European languages by M.M. Makovsky (Makovsky, 1989), we can conclude that a characteristic feature of expression or presentation of the truth, the Indo-European Union, is the presence of a virtual propositional Union (ligaments), "indigenous concepts", which relate to the state of the body - "to move quickly", "beat", "bend / flex", "cut", ensures the integrity of the communicative discourse of Indo-European Union in space and time. Compare yourself:

Pain 1. It may be related to the value of "increase, strong, big." 2. It may be related to the value of "lying", "lying down." 3. The value of "pain" is correlated with the value of "fire, burn." 4. You can also move the values of "work" - "pain". 5. It may be related to the value of "knit, bind," "enchanted, cursing." 6. It may be related to the value of "cut, beat." 7. The values of "pain", "suffering" can be associated with the meaning "to move, go."

To be afraid 1. It correlates with the value of "move fast", "beat". 2. Literary meanings of the words "Fear", "scary" are very interesting. They correspond to the literary "To have in abundance, to be satisfied."

Hungry 1. It Can relate to the value of "bend, swell." 2. It may be related to the value of "throwing", "beat", "to move quickly."

life, to live 1. The value of "live (in the sense of" being alive "and in the sense of" to be in a certain place, to dwell ") relates mainly to the value of" bending ", "cut ", which is undergoing a variety of semantic transformations. Transitions of values are possible: "cut", "bend", "move fast", "burn", "stop." The value of "bending" can give the value "come together to live", in addition to, the value "bend" can go into the value "grab (bag at the joint hunt)", "Fingers to close" and the value "to capture prey", in turn, can pass into the

value "want", "eat, enjoy", "born", "to live". 2. The value of "life" can be related to the value of "to rise, grow." 3. The words with the meaning "to live, to live (in one place)" could be related to the value of "eat". They also could be related to the word that means "go" (related to the cattle drive).

We can suggest that the Indo-European language based on a network of synaptic connections through which signals were transmitted for articulating flash mental activity in communication with Eurasian landscape-geographical complex. In such a way free energy, absorbed by living organisms in the environment, or "biochemical energy" of living matter was encoded and transmitted (*Gumilyov, 1993*).

In the Indo-European language family Old Church Slavonic and Russian (Slavonic or Old Church Slavonic) belong to different branches: the first - to the South Slavic and the second - to the East Slavic.

Identifying the concept of "Slavonic" and the Church Slavonic language, V.V. Vinogradov said that until the XVII century, it was considered by education authorities, the spiritual culture of the eastern and southern Slavs, like Latin in Western Europe. In addition, the Old Slavonic language was a symbol and a factor of cultural unity of Eastern Slavic states emerged on the territory of Eastern Europe. "Old Church Slavonic language, - said V. Vinogradov - was more clean and free conductor of ancient concepts than medieval Latin" (*Vinogradov, 1941*). Old Church Slavonic language to a certain extent, takes over the "allied" idea of Indo-European Union, keeping in a shared Indo-European alliance holistic education of eastern and southern Slavs, as well as the states that emerged in Eastern Europe, organizing the world of intelligible essences and mental speech with oriented system of ancient concepts.

V.I. Grigorovich said that in the history of Russian education it was more important question of the influence of the Russian language in the Church. "It is characterized by the value of it in our enlightenment. Contributed with the "holy books", it applied to the national accent, simplify its structure, but without taking anything that hatred Russian dialect, learned what connects them ... This is the value in the whole period of our education to Peter the Great. He was the connection of tribes, dialects, was a symbol of the unity of Russia" (*Grigorovich, 1852*). In XV-XVII centuries the term Russian applied not only to the Church Slavonic, but also to the living Slavic languages of the south and west. Since the XIV c., Since joining the Lithuanian-Russian state to Poland, the majority of the population of the Polish state was of Russian origin. Delivered in close mutual relations, the two peoples, Polish and Russian (Slavic Eastern and Western Slavonic sub-branch of Indo-European language union), were bound to affect one another, and the Russian language had to penetrate the political and social life of the old Poland. Brought by the Lithuanian Grand Duke Jagiello in Krakow, the Russian language was used in the Polish court in XIV - in the first half of the XVI centuries. It also was the diplomatic language of the Polish-Lithuanian-Russian state. Only during the reign of Sigismund Augustus, it was pushed by the Polish language, which was in the XVII and XVIII centuries forcibly implanted in the western regions of Ukraine and Belarus. Only in the second half of the XV century in a Polish court the Polish language was used instead of the previous Latin, German, Czech, Russian. Meanwhile, Lithuania and Russia continued to be managed, to be sued, to learn and to write in the Polish, and the Ruthenian languages, which included belorussisms and Ukrainisms. Russian language remained the official language in Lithuania and diplomatic for relations not only with Russian, but also with the Tatars' (*Vinogradov, 1941*).

By the XVIII century Russian and Church Slavonic languages were perceived as a system that can equally provide communication in the historical process of Slavic nations possessing linguistic forms that can adequately translate the symbolic language of their mental and form the structure of the collective memory. These are languages of identity, primarily, of the eastern and southern Slavs, in their totality, claiming the status of the union, potentially containing the idea of the nation (the "nation" can be perceived as an

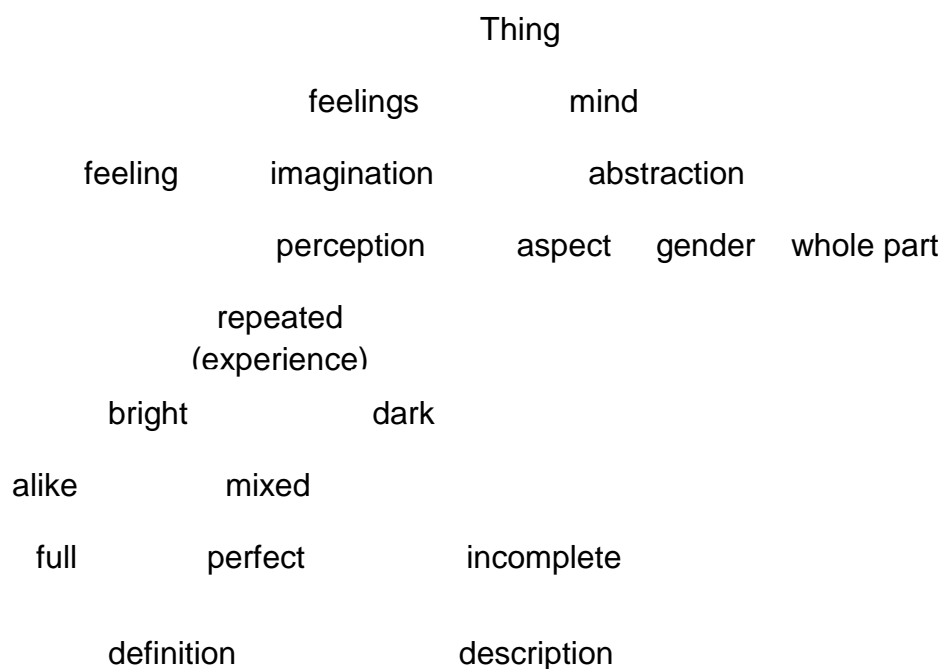
alternative to the state union of peoples based on common schemes outlook and mental activity set in language forms).

XVIII century is characterized in the history of Russian literary language better access of live speech in the sphere of state-legal relations (*Uspensky, 2002*) inherent in the historical perception and turns into a historical event in the event, making them the object of historical examination. Public-law relationship takes the form of the communicative process, mediating the relationship of the knowing individual consciousness and reality. Language as a mechanism for the generation of texts in accordance with the theoretical positions, B.A. Uspensky determines the selection of significant facts: the semiotic status of a phenomenon is primarily determined by its place in the system of language. The system of public representations of the recipient (the society) determines the deployment mechanism of events, ie, the historical process. However, a stable correlation between language (the mechanism of generation of text), and the consciousness of the recipient (vector deployment mechanism of events) is established through it, which (with the participation of consciousness and thought) is a landmark model of certain "pieces" or "nodes" of life (*Golovin, 1980*).

An agreed set of these "nodes" of life is a coherent discourse of cognitive culture of the nation. Coherent discourse of the XVIII century, when viewed from the position of John. Bruner, having suggested an approach to the culture of a criterion for the release of it beyond the immediate individual experience (*Bruner, 1977*), formed the new state of the European reality, stable part of which is trying to become Russia. This will require a return to the origins of Indo-European Union through the Germanic languages, accompanied by identifying new contents of ancient concepts of previously available in Church Slavonic interpretation. The introduction of logic and rhetoric, grammar - the triumvirate that form the basis of medieval European university education, as a prerequisite Russian education and awareness, internally believed axiological shift priorities in Latin Slavic (European), allowing in the future to transfer the idea of an Indo-European language in the idea of the union of the state union - Empire.

Aspiration of Russia to a new state system (the empire as a system, a network of relationships between the cities, which in antiquity by the type of state structure are identical Republic) in XVIII demanded the appearance of a new type of literature which is the mirror of self-knowledge and means of psychogenesis, which, in turn, required the construction of a semantic system of the Russian language. The basic principle is the principle of unity in the entry system of semantic oppositions differently: through the manipulation of characters of the Russian language on the basis of logical and rhetorical rules of the ancient system of knowledge of the world (essentially republican) to teach the representative of book Slavic culture procedure of mental image of thing i.e abstract (European) type of thinking that guarantees the Russian Empire "... zealot of its interests, having the characteristic properties of the "love of country", "devotion to the king", "ambition" (identified with the individual rights).

The process of mental image of thing at the end of the XVIII century had the following form: the scheme is based on the information content of Chapter 1 compression. On the concept of "Logic and Rhetoric, concise and comprehensible way of childhood arranged, and explanations for the benefit of young people published" A. H. ***. *** in St. Petersburg at the Imperial Academy of Sciences, 1790" (*Logic and Rhetoric ...*).



In "Logic and Rhetoric" a special type of hierarchy was formed that can distribute information through a process of "inheritance" (*Hudson, 1986*) when X is Y, then X inherits all the properties of the Y). In the grammar dictionary of R. Hudson such a hierarchy is called «a- hierarchy ("there", "a case") that separates the semantic and syntactic arguments from cognitive valence words: verb arguments must match the elements included in the scope of the concept of cognitive, classified with help of the verb. This is a special conceptual hierarchy of language, the apex of which is the most common of all the concepts - the concept of "concepts" and the word is represented by the ratio to the communicative action and specific entities - classes of words. This hierarchy is based on the understanding that the meaning of words must be obtained from the experience based on the antinomy of the relationship between the basic physical concepts of being and the basic physical laws of the process. "This law - if we confine ourselves to the use of its mechanics - requires that whenever the movement from one body to another remained unchanged entire amount of manpower" (*Cassirer, 1912*). The image of objective reality is possible under certain measures, approximating the image to true-to-one fixing things (object).

Objectives of the Russian literary language - to teach to think and interpret thoughts through the words formulated in the introductory part of "Logic and Rhetoric" in 1790 (*Logic and Rhetoric ...*):

§ 1. To think and interpret their thoughts in short, are the two celestial gift, which man primarily distinguishes from all other animals.

§ 2. These two so precious and necessary skills for a person are connected in such a way that think and not to speak is contrary to the intention of the Creator; but speak and not to think, it is not possible.

§ 3. In other matters to think and communicate to everyone is given by nature, but to think rightly and thoroughly and to speak pleasantly are the qualities that distinguish an enlightened person from others.

§ 4. To think fair teaches us logic and to interpret pleasant thoughts instructs grammar, and rhetoric.

§ 5. For this reason logic and rhetoric are close to each other with the attitude suggested here collectively.

Finding stability in the form of language - the goal, adjust the direction of the language reforms of Peter I, coincided with the main principle of the existence of the Indo-European Union, linguistic forms of which were represented by the fundamental equation or the "laws of thought", allowing to operate with virtual objects thoughts which constitute the third (remember the metaphor of "Moscow - the Third Rome", as of course is the reference in this case is appropriate). According to Popper, the third world, a part of which is the human language, made by people in the same way as honey produced by bees or a spider web - spiders. Like honey, human language - and thus a significant part of the Third World is an unplanned product of human actions" (*Popper, 2002*) on the organization of the geographical environment and changes in the social form of the motion of matter. K. Buhler pointed out that the language of animals and humans are similar in the sense that always the expressions (symptoms of the condition of the body) and messages (signals) (*Buhler, 1993*).

Beginning of the XVIII century (as well as the second half of the XVI century) is characterized by a particularly polemical attitude towards the Latin language in new ceremonial environment: perceived, as B.A. Uspensky notes, as heretical language, by its nature distorts the content of Christian doctrine. Church Slavic language, according to Slavic scribes leads to God, it is generally impossible to lie - because it is a means of expression of revealed truth (*Uspensky, 2002*).

Two types of attitude to the linguistic sign formed during this time - its conventional and nonconventional understanding, the experience of the sign as something absolute, which does not depend on the person, and the ability to manage the human characters, give them a new meaning, to introduce them into new combinations, playing characters. "... The representatives of southwestern education separate word from its content, which makes possible the use of words with figurative sense ("Tropical reason"). So, for Stefan Yavorsky Gospel text is not the truth); the truth is considered the content of the text.

Therefore, the text is open to different interpretations, and the truth is established through the proper interpretation (that determines the value of philological exegesis for post Renaissance outlook).

"The new Russian style» of the XVIII century, on the one hand, should not lose the correct expression of the truth, existing only in Church Slavonic and linking Slavic people into a whole (forming Slavic Union like the Western European language union), on the other hand it is necessary to open access to the system of semantic oppositions and semantic-cognitive arguments that form the basis of European civilization acquires the status of the functions of historical consciousness in the semiotic system created in the first third of the twentieth century by A.S. Pushkin.

A.S. Pushkin with his semiotic system detects the union of intelligible worlds of entities constituting kvinessence of different emotional and mental culture, so the Russian language, as the legal successor of the full language of joining Church Slavonic into a single whole, becoming the national language, allowing the main problem posed by reform efforts of Peter I - to define the principle of unity of Russian entry into the system of semantic oppositions, guaranteeing a loyal defender of the Russian empire's interests

The main principle of the synthesis of relations in the theory of order and connection of A.S. Pushkin - the harmony, beauty, classic principle of citizen easily merging with a total life of the state, for the ancient citizen, according to P.E. Astafjev (*Astafjev, 2000*), often limited to one city, citizen of classic country. The imperial idea of A.S. Pushkin is consonant with the imperial idea of understanding of Chinese civilization in the period of XVI-XVII centuries and it requires the ability to see the real world, complementing the physical spiritual vision. It is associated with "mental effort to penetrate the material of the shell and the things invisible to read the formula that finds expression in materiality" (*Malyavin, 1995*).

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INVESTMENT ATTRACTIVENESS OF THE SAMARA REGION

Abstract

Regional investment legislation provides the same circumstances for all investors, promotes the elimination of administrative barriers, and creates favorable tax regime and preferences.

Keywords

region, investment, innovative activity, investment attractiveness,
investment project, investment policy

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The size of investments in the fixed capital of the Samara region firmly enters into the top twenty out of all regions of the Russian Federation.

The Samara region has a high rating of investment because it has a high-quality, sustainable and attractive investment climate; the international credit ratings reflect the high credit property of the region according to the comparison with other Russian regions. Alternately purposeful policy appropriate to the creation is carried out on the territory of the Samara region, which maximizes comfortable regional investment environment.

A municipal program initiated in the Samara region "Creation of favorable conditions for investment and innovation", describes the mission, objectives, results, main focus and

activities of the municipal regulation aimed at concluding issues in investment activities and the realization of values in investment and innovative work of the Samara region.

The project principle is applied when working with investors. A guardianship is used for investment projects. Observers assist in the selection of land plots in the entire passage of the conciliation and licensing operations with federal and regional authorities, including the relationship with tax authorities.

Established regulatory framework allows you to fulfill the plans using the mechanism of public-private partnership.

Today there are objects of investment and innovation infrastructure in the Samara region: creation of the Free Economic Zone of industrial-production type in the Stavropol municipal area, the high technologies Techno park "Zhiguli valley" in Togliatti. The government of the region stepped up to the creation of an industrial and agro-industrial park in the Volzhsky municipal district. Also a separate specialized chemical industrial Park was built in Togliatti. A standard of work is introduced for organizations of the Executive authorities in the Samara region in order to provide suitable investment climate. In 2013, the Council on efficiency increase of the investment climate was formed in the Samara region, the provisions of which are envisaged in the framework of implementation of investment policy.

Investment Declaration of the Samara region, the Investment appeal of the Governor of the Samara region "About the investment climate and investment policy of the Samara region in 2014" are established.

An online portal "InvestInSamara" operates in the area producing different reference books, multimedia products.

OJSC „Formation Corporation of the Samara region" was formed and the founders were the Samara region government and Vnesheconombank. The main trends of Company's activity are considered to be similar to the direct participation in the implementation of investment projects and creation of common structures with the investors implementing investment projects in several sectors of economy. Thus, the main principles of investment policy of the Samara region are:

1)providing favorable information and the institutional environment to attract investment;

2)reducing barriers to market entry;

3)providing effective business support on legislation level;

4)effective public-private partnership.

Institutions that implement investment plans on the territory of the Samara region have a chance to use state aid in stages and whole phases of their implementation plans.

In adoption step of the investor's decision to commence business in the Samara region law provides:

1) public guardianship for investors implementing investment plans valued from 650 million RUR and more, an expression of investors informative and legal aid, including during the creation of registration papers needed to impersonate the investment project.

2) understanding of data about the criteria of doing business at the time of execution of exhibitions and fairs for investment projects, organized by state authorities.

3) methodical and consulting support, study with reference and analytical materials, including databases of free production areas, agricultural areas on the territory of Samara region.

4) long-term capital-intensive inter-municipal investment plans and investment plans of state property objects in the Samara region are implemented on a competitive basis. The progress of the competition is established by the Government of the Samara region. In the implementation phase of investment projects on the territory of Samara region, the regional law provides:

- 1) permission on contest basis of state guarantees for investment projects in the region;
- 2) equal relations of the Samara region in the capital of legal entities implementing investment projects in consultation with functioning Federal and regional legislation;
- 3) providing subsidies on a free and irrevocable basis to the investors-manufacturers of goods, works, services (except for manufacturers of agricultural products in agricultural sector of the Samara region) in order to recompense the costs incurred by the investor in the process of investment project realization.

Subsidies are provided on the competitive basis in accordance with effectiveness conditions of implemented investment plans. The Government of the Samara region establishes groups and criteria for selection of investors with the right to get subsidies, objectives and circumstances for the provision of subsidies, the regulations for granting and other circumstances.

On the final stage of investment projects state aid to investors in the territory of the Samara region is executed in the form of exemptions from property tax. A lower interest rate on income tax to 13.5 % is implemented not counting the major investors (the size of investments is more than 650 million. RUB). This benefit is organized for companies implementing investment projects in accordance with the laws of the Samara region "On property tax of organizations in territory of the Samara region" and "On reduced rates of income tax on paid in to the regional budget".

Incentive taxation system is implemented till the moment of investment project return but not more than 7 years. Significant interest is paid to the creation of development institutes, promoting the implementation of investment projects in the Samara region.

One of the promising trends to attract investors to the area is considered a public-private partnership.

The resolution of the Government of the Samara region "On approval of the Concept for the implementation of projects based on public-private partnership" was implemented. The concept establishes a promising procedure for legal regulation of relationships between bodies of state power of the region and the subjects of entrepreneurial work in the field of implementation of projects based on public-private partnerships, which in its turn strengthens the doctrine of adjusting the main qualities of public-private partnership in Samara region.

The law "On participation of the Samara region in public-private partnerships" was invented and developed on the basis of the Concept which contains the views and mechanisms of cooperation with private investors. It allows reducing risks for investment of personal funds and thereby increases the attractiveness of investment funds. In 2013 the theory of the formation of the Long-term direct investments fund and Sowing investments fund was developed. In 2014 a development of Long-term investments fund was planned with the aim of attracting non-budget investments into the territory of the region which subsequently will allow attracting 950 million rubles of private investments in projects implemented with participation of funds.

The total amount of accumulated foreign investments in the economy of the Samara region on 1 January 2014 amounted to 2558.0 million USD comparing to 1869,3 million US dollars of foreign investment received in 2013 (158,8% from the 2012 level). Direct investments amounted to \$ 81, 4 million dollars (120.4% from the 2012 level), portfolio investments - 8.6 million dollars (149.5%) and other investments - 1779.2 million US dollars (114.3% comparing to the level of 2012).

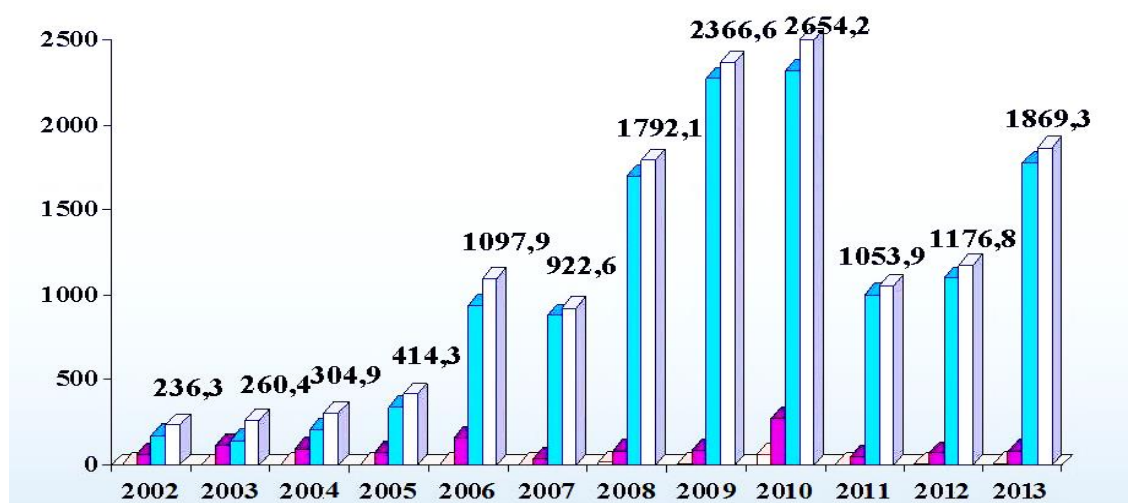


FIGURE 1. DYNAMICS OF FOREIGN INVESTMENTS INTO THE ECONOMY OF THE SAMARA REGION FOR 2002-2013

Identity of foreign investments into the economy of the Samara region is traditionally considered a wide application of "commodity loans". Part of them in a single amount of foreign investment reaches 70-80%, and the results 2011-2013 are 92-95%. Large companies of the region lend their Western customers vigorously for the purpose of quickening the expression means.

The main size of investments is associated with the intensification of export deliveries of petrochemical companies and a machine cluster based on commodity loans.

TABLE 1. THE FLOW OF FOREIGN INVESTMENTS BY TYPES OF ECONOMIC ACTIVITY IN 2013, MILLION USD

	Did
Mining	23,1
Manufacturing, of which:	1757,6
chemical production	793,8
metallurgical production	141
the production of vehicle and equipment	821,3
Construction	2,3
Wholesale and retail trade	26,7
Transport and communications	19,8
Financial activity	22,3
Rent and services	16,7

It should be noted that in 2011-2012 the exact orientation of the transition of foreign investors was marked in infrastructure sectors of the economy - construction, transport, communications, economic services, operations with real estate and others. Direct investments fell in specifically these fields of the economy in 2011-2012, which is connected, in the first order, with the highest margins and the most imminent return of funds. Classic industries - engineering, mining, and metallurgy assume attractiveness to strategic investors coming into the area for a long time and with a huge amount of investment resources.

Insurance design of foreign investments has undergone significant changes according to the comparison with 2011-2012 and returned to the position of 2009-2010

The main investor countries engaged in significant investment in the economy of the Samara region were Switzerland, Ukraine and Germany.

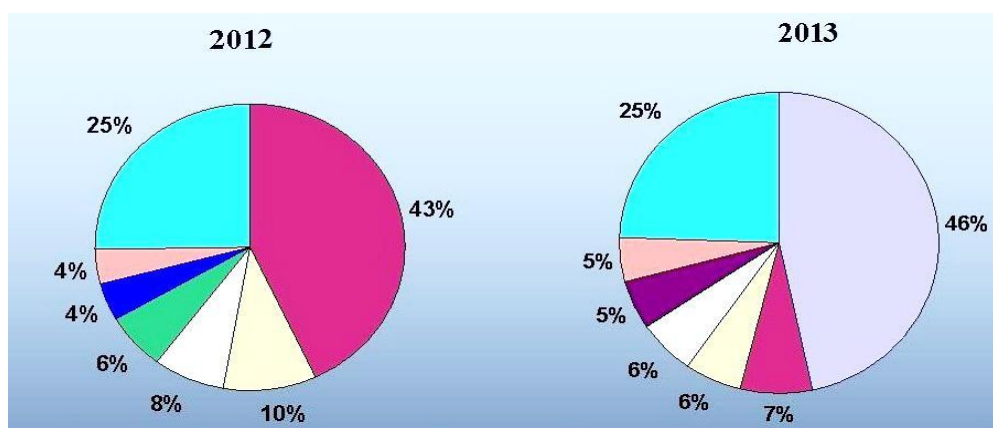


FIGURE 2. MAIN COUNTRIES-INVESTORS IN THE ECONOMY OF THE SAMARA REGION (IN %)

Still it remains that foreign investment had been concentrated in two largest cities of the region - Samara and Togliatti.

In 2009 and the first half of 2010 a climate have created when investments significantly decreased in Togliatti area (10%) in relation with the uncertainty of investors in the subsequent prospects of development of this mono-city. Still, the increased number of small towns in the Samara region like Kinel, Otradny and some others informed about the situation, were acting like a "safe harbor" for investors, offering a good business climate and a stable financial environment.

In the second half of 2010 and then in 2011, the situation has changed in the "traditional" side - increasing size of investments rushed to Togliatti, due to the active work of large factories in the city.

The strategy for socio-economic development of Samara region for the period up to 2020 provides two options of development and formation of the investment sphere of the area: inert and innovative.

Inert variant of formation involves strengthening the positive dynamics of capital investment with preservation of the existing trends in the investment field and does not imply the realization of a significant quantity of the latest large-scale strategic plans. Improvement of the investment climate in the area will carry the progressive, secondary nature, involving the impersonation by functioning organizations of the Samara region investment programs consistent with the modernization and reconstruction of operating production and renewal of fixed assets.

Under this type main dimensions of capital investment will be implemented in the industrial sector, which currently makes determining effect on the formation of the region and forms the basis for economic recovery of the region in general - engineering, fuel industry, chemical and petrochemical, non-ferrous metallurgy.

Diversification of the economy of the Samara region will contribute to the development of new industries, particularly the steel industry. Investment activity in the area will be performed mainly at the expense of internal resources systems - profit and depreciation.

However, the development of the monetary sector of the economy, including banking and other credit systems, revitalization of companies' work to attract additional funds through the issue of bonded loans, placement of loan notes and application of other types of borrowing will lead to the expansion of lending to investment activities in the region.

Budget financing (both from Federal and regional budgets) will continue to play significant role in the production of socially important sectors of the economy.

A modern version is based on intense structural shifts in the benefit of technical and infrastructure sections of the economy and involves a more significant capital investment

and the highest rate of growth according to the comparison with a variant of inertial formation .

A modern variant is aimed on the implementation of investment projects of national and strategic meaning and implementation of national plans in the field of housing, health, education and agriculture and predicts the functional involvement of Federal and regional budgets in their financing.

The use of the private-public partnership will plunge in its turn for investments from extra-budgetary sources. In this regard, there will be executed the transition to the most modern modifications of financing of investment management based on the functional attraction of credit resources. Innovative modification strategy is based on dirigisme cluster model financial policy and focuses on the formation of the most promising parts of the economy of the Samara region which are able to show the multiplicative result in adjacent industries.

The study of clusters was done for generating of the investment portfolio cluster in the region, and determined the attractiveness and competitive advantages of certain sectors of the economy to produce the newest cluster. Cluster portfolios are based on the assessment of the pace of industrial development and are necessary for the selection of leading investment projects and programs and conclusions on the regulation of investment in the medium and long-term opportunities.

At this time, in the sectors of economy of the Samara region, as overall in Russia, leading clusters are not detected (according to a major regional or global markets), which dwelt on the initial phases of the life cycle (the emergence or rise). A big part of efficient by Russian standards sections, depending on the cluster, aimed at the domestic market and positioned between stages of maturity and stagnation. The exception is rapidly unwinding markets for information technology, telecommunications, logistics and innovation, the formation of which will have a multiplier result on the economy of the region. This is considered evidence that these sections of the economy are emerging clusters.

The innovative scenario of the formation requests "growing" of advanced studies from selected academic ideas and research and industrial projects and recovery of amounts paid for high-tech products that are in demand in domestic and foreign markets. The principal possibility of the implementation of difficult and innovative projects supplied by scientific and technical achievements in aero and space industries and the field of information technology made by Samara scientists.

Improvement of program-target methods usage for planning and impersonation investments will allow it to attract the necessary investments for education and formation in the Samara region tourism and recreation cluster. The creation of tourist-recreation cluster includes the study and an investment in the regional core project establishment of tourism, large investment projects, developing the infrastructure of tourism business (ski, athletic and entertainment facilities, hotels, health and educational projects and excursion routes), and in turn capital investments in reconstruction and the formation of the running of hotels and resorts, including all-Russian importance.

Investment formation of the Samara region in accordance with an innovative form allows provisioning of economy and social sphere of area by significant volumes of investment resources with the use of budgetary and extra-budgetary sources of funding, and in turn, the formation of effective regional system of modification of investment resources in capital investment.

One of the ways of regional formation are budget investment, these topics are of a public nature which are not produced by the market in the desired size and quality.

An important objective of the investment policy is the attraction of means of the Federal budget into the region.

In the future is expected to increase the inflow of investments from the Federal budget in the area. This will help:

1) the implementation of national projects in the field of housing, education, health and agriculture;

2) the activity of the regional Government on attraction of means of Investment Fund of the Russian Federation to impersonate strategic infrastructure investments, which has a multiplier effect;

3) renewal of voltages according to the representation of the interests of the Samara region at the Federal level and involvement into Federal projects and Federal targeted investment program for regional construction projects. Strategic flow in the road sector is the formation of a network of roads that meets the needs of the economy and population.

Extra-budgetary investment funds constitute the main source of reproduction processes in the economy of the Samara region.

Within important extra-budgetary sources of investment resources, which will determine the scale of investment in the area, within the true Strategy are considered:

1. Private property institutions.

2. Loans from banks and lending funds of other institutions.

3. The assets of natural monopolies and large domestic financial and industrial companies.

4. Money of population.

5. The release of securities of organizations into circulation. Installed conditions are needed for the implementation of this mechanism - the formation of the market infrastructure, the availability of reliable market players providing storage and turnover of securities.

The main period of activity is the organization of conditions for establishment of the stock market of Samara region as one of the most powerful investment movers and within the main step to this is the acquisition of true openness and transparency of firms for partners and investors.

The strategic goal of investment environment in the Samara region is the retention and strengthening of positive image of Samara region, which provides a good attraction for investments into fixed capital in order to ensure the stability of public finance and enhances the competitiveness of the area.

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EFFICIENCY OF TRACTOR PARK USAGE IN AGRICULTURE

Abstract

The relevance of the paper is caused by active development of agriculture in the Krasnodar Krai, efficiency of use of tractor park in agriculture. The purpose of the paper is to analyze the efficiency of use of tractor park in one of the agricultural organizations of the Krasnodar Krai. The leading method of the research is calculations of analytical and synthetic indicators of efficiency of use of tractor park. The research reflects an organizational-economic mechanism of efficiency increase of agricultural works. Materials can be useful to young scientists and experts, and representatives of agrarian-industrial complex.

Keywords

agriculture, efficiency, analysis, tractor park, the shift index, full day downtime

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The major and defining basis of material base of agriculture is fixed assets of production, which together with labor has the leading and crucial role. Therefore, the special attention should be paid to the analysis of use of tractor park, which occupies a considerable share of performance of agricultural works (*Mullinova, 2004*).

Rather full and objective assessment of use of tractor park can be given only by means of system of analytical and synthetic indicators, which development is an important methodological question. First, it is necessary to carry the private indicators characterizing extent of extensive loading of tractor park to this system.

The Krasnodar Krai is one of the most important agricultural regions of Russia. Fertile soils and favorable climatic conditions create wide opportunities for development of all branches of agricultural production (*Mullinova, 2004*).

Dynamics of cultivated areas in the agricultural organizations of the Krasnodar Krai testifies that crops grain and sugar beet increased by 8% and 2% respectively in 2013 in comparison with 2005. In 2013, the greatest specific weight fell on cultivated areas of corn on grain (339,8 thousand ha) and sunflower (301,2 thousand ha). In 2013 in comparison with 2010, gross collecting of corn by grain and sunflower increased on 1146 thousand tons or in 2,3 times and on 120 thousand tons or 17% according to (*Mullinova, Kulish, 2008*).

Based on the presented results (table 1), it is possible to note that every year indicators of gross collecting and productivity of main types of crops in the Krasnodar Krai tend to increase. According to Krasnodarstat, in 2014, gross collecting of grain in the agricultural organizations made 12% of gross collecting in the Russian Federation, sugar beet - 20%, seeds of sunflower and fruits - on 12% (*Krasnodarstat, 2014*).

It is possible to note that in 2012, there was a decrease in realization practically of all main types of production of plant growing in the agricultural organizations of the Krasnodar Krai. Realization of cereals and bean cultures made 5506 thousand tons. It is

lower than 2011 and 2013 on 1779 thousand tons (for 25%) and 1328 thousand tons (for 20%) accordingly (*Mullinova, Smirnov, 2009*). It was caused by adverse weather conditions and, as a result, a small harvest.

TABLE 1. DYNAMICS OF PRODUCTIVITY AND GROSS PRODUCTION OF MAIN TYPES OF CROPS IN THE AGRICULTURAL ORGANIZATIONS OF THE KRASNODAR KRAI

Years	Corn on grain		Sugar beet		Sunflower	
	productivity, centners per 1 hectare	gross collecting, thousand tons	productivity, centners per 1 hectare	gross collecting, thousand tons	productivity, centners per 1 hectare	gross collecting, thousand tons
2000	24,5	314	227,2	2688	16,9	507
2005	44,1	827	327,9	3677	20,9	777
2010	36,4	863	369,4	6444	22,1	693
2011	51,1	1342	448,0	8035	24,1	721
2012	43,8	1690	432,0	7101	24,2	764
2013	59,1	2009	524,2	6046	27,0	813
2013 in % (times) to 2000.	in 2,4 times	in 6,4 times	in 2,3 times	in 2,2 times	159,7	160,4

Nevertheless, in 2013, the proceeds from sales of goods, production, works and services in general in the agricultural organizations made 109792 million rubles, from them 72190 million rubles were the share of branch of plant growing. It is on 55686 million rubles more than in the branch of animal husbandry (*Mullinova, 2004*).

In the agricultural organizations of the Krasnodar Krai the big problem is insufficient security of the organizations with modern equipment, deficiency of hook-on and hinged tools for an aggregation with power saturated tractors (*Mullinova, 2002*).

TABLE 2. PROVISION WITH TRACTORS OF THE AGRICULTURAL ORGANIZATIONS OF THE KRASNODAR KRAI

Indicator	Years						2013 in % to 2000
	2000	2005	2010	2011	2012	2013	
Tractors on 1000 ga arable lands, pieces	11,2	9,1	6,8	6,6	6,4	6,2	55,4
Arable land loads on one tractor, hectare	89,5	109,3	147,0	151,4	156,4	161,6	180,6
On 100 tractors, pieces:							
- plows	36,2	34,0	31,8	32,5	31,4	31,5	87,0
- cultivators	44,0	46,0	47,8	48,0	48,6	49,0	111,4
- seeders	38,0	41,0	34,7	36,5	33,4	33,2	87,4
- tractor mowers	9,3	9,0	8,9	8,9	9,2	9,6	103,2

According to table 2, every year arable land loads of 1 tractor increase, because of reduction of tractor park, which in 2000 made 89,5 ha, and in 2013 - 161,6 ha. The indicator increased in 1,8 times. In 2013 in comparison with 2000, the tractor park in the agricultural organizations of the Krasnodar Krai decreased on 22471 pieces or by 55%. Thus, the greatest decrease was in tractor trailers - 67% - and cultivators - 50% (*Mullinova, 2002*).

This confirms that deterioration of a financial position of the agricultural organizations, and decline in production of domestic tractors, combines and other farm

vehicles does not allow rural producers to complete rationally machine tractor park. Still, despite economic difficulties, the agricultural machinery is acquired in the Krasnodar Krai.

Indicators of extensive loading characterize extent of use of working hours of machines. They can be as absolute (fulfilled days, shifts and hours by one tractor for the analyzed time period; average duration of shifts), and relative: efficiency of tractors in work (relation of number of the fulfilled days by tractors to number of machine-days of stay in economy); working in shifts coefficient (attitude of number of the fulfilled shifts towards number of the fulfilled days by tractor park); coefficient of useful use of working hours in a day or a shift (relation of useful operating time by the time of stay in a shift).

Indicators of intensive loading of tractor park (average annual, daily, shift and hour manufacture of a tractor) are calculated by division of amount of completed work respectively on average annual quantity of tractors, number of the working days in a year, shifts and hours.

Therefore, the less tractor stand idle for year, day, shift, the higher their manufacture is, the more effectively tractor park is used in economy (*Mullinova, 2003*).

For evident calculations of efficiency increase of tractor park usage we took data of one of the agricultural organizations of the Krasnoarmeisky district of the Krasnodar Krai. The main production direction of the organization is plant growing. The average annual number of workers in 2013 was 331 persons. The total land area is 7788 ha, 6229 ha from them are the farmland. In 2013, the volume of realization of grain was 200031 centners that is by 37% higher, than in 2009. Thus, efficiency of use of labor and land resources decreased within 5 years. Profits on sales counting on one average annual worker h decreased by 61% in 2013 in comparison with 2009 (*Mullinova, 2005*).

Calculations showed that the tractor park in the agricultural organization works in one shift, thus tractors are used in work only approximately for 30% that is the lowest indicator. The volume of tractor manufacture for the studied period grew on 7206 exemplary ha. This circumstance is explained by increase of efficiency of use of tractor park on power (*Mullinova, 2005*). So, average annual development in 2013 in comparison with 2009 increased by one conditional tractor on 35,2 exemplary ha. hectare, daily average manufacture - on 0,6 exemplary ha, and average shift manufacture - on 0,3 exemplary ha. Arable land load of one conditional tractor in five years decreased by 2,0 hectares, however density of tractor manufacture for the same period grew on 1,2 exemplary ha /hectare that shows some increase of intensity of use of tractor park in the organization (*Mullinova, 2003*).

Number of the fulfilled days, shifts and hours by one tractor on average in a year and consequently efficiency of tractors in work, the working in shifts coefficient, average duration of change depend on technical condition of tractors, level of their maintenance, the organization of tractor park work, security with shots of machine operators, etc. Whole-day and intra replaceable losses of working hours in agriculture can be caused by weather conditions, seasonal nature of agricultural production that is also necessary to consider, estimating work of tractor park (*Govdya, Mullinova, 2002*).

The volume of tractor works directly depends on average annual quantity of tractors and average annual manufacture of one tractor, which is defined by number of the fulfilled days in a year by one tractor and daily average manufacture.

In the analyzed agricultural organization, the volume of tractor works grew in general on 7206 exemplary ha, due to growth of number of tractors on 3704 exemplary ha, increase in coefficient of working in shifts on 3788 exemplary ha due to increase of replaceable development on 2287 exemplary ha. Reduction of working days number of one tractor led to decrease of completed work for the studied period on 2573 exemplary ha (*Mullinova, 2004*).

TABLE 3. USAGE OF TRACTOR PARK

Indicator	2009	2013	Change (+,-) 2013 to 2009.
Average annual number of conditional tractors, piece	96	99	3
Tractor park use in:			
- machine-days	9105	9227	122
- mashine-shifts	9833	10150	317
Tractor park use in a year:			
- days			
- shifts	102	103	1
Working shifts coefficient	1,074	1,108	0,034
Number of machine-days of stay in organization	30012	30966	954
Efficiency of tractors in work	0,303	0,298	- 0,005
The executed volume of tractor works, exemplary ha	119020	126226	7206
Indicators of use of tractors on power, exemplary ha:			
- average annual manufacture on one conditional tractor	1239,8	1275,0	35,2
- average daily manufacture on one conditional tractor	13,1	13,7	0,6
- average shift manufacture on one conditional tractor	12,1	12,4	0,3
Area of arable lands, ha	6229	6229	0
Arable land load on one conditional tractor, ha	64,9	62,9	- 2
Density of tractor works, exemplary ha/ha	19,1	20,3	1,2

The obtained data made it is possible to note that one of fundamental factors of effective use of tractor park is the individual approach to design of hardware of each concrete agricultural producer. Thus, maximum efficiency can be reached only at the full accounting of all features of agricultural production inherent in the managing subject (Mullinova, 2002).

The analysis of indicators of working in shifts coefficients and hourly average tractors manufacture showed that the total of full day downtime grew by 4% in 2013 in comparison with 2009. Thus, downtime connected with planned repair made about 6-8% of total number of full day downtime. Technical malfunctions, climatic conditions, diseases and truancies of tractor operators, lack of fuel caused by the other reasons. On average on one conditional tractor for the studied period the number of full day downtime grew for 2,0 days or by 0,9% (Mullinova, 2002).

It is possible to refer improvement of the organization of maintenance of tractor units to actions for reduction of tractors downtime, material work incentives of machine operators, preliminary completing of working cars, improvement of system of the accounting of tractor park work (Mullinova, 2004).

TABLE 4. INFLUENCE OF MAJOR FACTORS ON THE VOLUME OF TRACTOR WORKS

Indicator	2009.	2013.	Change (+,-) 2013 to 2009.
Average annual number of conditional tractors, piece	96	99	3
Use of one tractor, days	95	93	- 2
Average shift manufacture, exemplary ha	12,1	12,4	0,3
Working shifts coefficient of tractors	1,074	1,108	0,034
Amount of completed work, exemplary ha	119020	126226	7206
Change of completed work amount, exemplary ha - whole	x	x	7206
including:	x	x	3704
- due to quantity of tractors	x	x	- 2573
- days of work of one tractor	x	x	3788
- working shifts coefficient	x	x	2287
- shift manufacture	x	x	

TABLE 5. RESERVE OF INCREASE IN VOLUME OF TRACTOR WORKS, 2013

Indicator	Value of an indicator
Full day downtime on average on one conditional tractor, days:	
- actual	220
- settling	218
Reserve of reduction of full day downtime, day/ tractor	2
Average annual number of conditional tractors, piece.	99
Daily average manufacture of one tractor, exemplary ha	13,7
Reserve of increase in volume of tractor works, exemplary ha	2712,6

Calculating reserves of volume increase of tractor works, we revealed that the studied agricultural organization has reserve of volume increase of tractor works at a rate of 2712,6 exemplary ha due to reduction of number of full day downtime days in 2013 to the level of 2009. Realization of this reserve in practice will allow to increase some efficiency of use of tractor park in the organization (Mullinova, 2003).

In the conclusion, we would like to note that for efficiency increase of tractor park use in agrarian and industrial complex it is expedient:

- to increase working in shifts coefficient;
- to complete tractor and loop of farm vehicles;
- to pay special attention to retraining of machine operators and material stimulation of their work.

All these would help to increase efficiency of use of the available capacities and to get additional profit for the agricultural organization.

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PRIORITY OF FORMATION OF EDUCATIONAL ACTIONS OF YOUNGER SCHOOL STUDENTS IN THE TRAINING COURSE ON L.V. ZANKOV'S SYSTEM

Abstract

The paper deals with characteristic of pedagogical and methodical aspects of formation of universal educational actions of younger school students in the training course of initial step of the general education. The author defines optimum conditions and possibilities of implementation of the new educational standard by means of L. V. Zankov's didactic system of developing training, the main tendencies connected with formation of universal educational actions of younger school students. The results of the research show that organization of educational process in the framework of L.V. Zankov's didactic system help school students to form and improve all types of universal educational actions. Thus, L. V. Zankov's didactic system can serve the technological component of education defining ways and means of formation of universal educational actions, achievements of socially desirable level of pupils' development. Methodical materials are developed and approved on the basis of MAOU Gymnasium No. 2 after A. P. Chekhov (Taganrog, Russia).

Keywords

primary education, universal educational actions, pupil, teacher,
learning process, general development, formation

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For the last decades, society has cardinal changes in representation of the purposes of education and ways of their realization. From recognition of knowledge, skills and abilities as the main result of education, there was a transition to understanding of training as a process of preparation of learners to real life; their readiness to take an active position; solving vital problems successfully; ability to cooperate and work in a group; readiness to fast reaction in response to updating of knowledge and requirements of labor market.

In this regard, the Federal State Educational Standard of the primary general education emphasizes that "implementation of the standard has to provide conditions for common cultural and personal development of pupils on the basis of formation of the universal educational actions providing not only successful assimilation of knowledge, skills and abilities, but also formation of a picture of the world, system of competences of any subject of knowledge" (*Federal State Educational Standard, 2011*).

The requirement to formation of universal educational actions of pupils became one of professional competences of the elementary school teacher.

The existing psychologic-pedagogical, educational-methodological literature do not always fully reflect essentially new pedagogical experience. The insufficient volume of necessary skills, psychologic-pedagogical installations on technology of formation of

universal educational actions of pupils is one of the actual problems of modern education.

The purpose of our research is the analysis of L. V. Zankov's didactic training system in the light of realization of the modern education system ideas on practice.

The solution of the social task ensuring ability of the Russian education system adequately to react to inquiries of a person, change of requirements of national economy and positive society organization is submitted important nowadays.

Within the activity approach, the results of education have to be directly connected with the directions of personal development. These results are presented in an activity form. It means that the results of education should have not only a subject format, but also have nature of universal actions. Universal educational actions have to be the basis for a choice and structuring the content of education, receptions, methods, forms of education, and creation of complete educational-upbringing process.

The concept of "the system-activity approach is the cornerstone of universal educational actions and provide:

- formation of readiness for self-development and continuous education;
- design of the social environment of learners' development in the education system;
- active educational cognitive activity of learners;
- creation of educational process according to the specificity of age, psychological and physiological features of learners" (Efimov, 2012).

Formation of pupils' universal educational actions happens in the context of different subjects and, eventually, conducts to mastering the ability to acquire new knowledge and abilities independently, including the independent organization of process of knowledge mastering, i.e. the ability to study.

This ability is provided by the fact that "universal educational actions are the generalized ways of actions opening possibility of broad orientation of pupils both in various subject domains, and in a structure of the educational activity of its own, including understanding by pupils of its purposes, value-semantic and operational characteristics" (Efimov, 2012). Thus, achievement of 'the ability to study' assumes development of all components of educational activity, which includes educational motives, educational purpose, educational task, educational actions and operations (orientation, material transformation, control and assessment).

Today A.G. Asmolov, G. V. Burmenskaya, I.A. Volodarskaya, O. A. Karabanova, L. G. Peterson and others actively consider approaches to formation of pupils' universal educational actions.

The scientific literature treats the essence of the concept 'universal educational actions' in different ways. In wide sense, the term 'universal educational actions' means the ability to study. In narrower sense (actually psychological sense), the term 'universal educational actions' can be defined as a set of ways of pupil's action (and the skills of study related to it) providing his ability to independent assimilation of new knowledge and abilities including the organization of this process (Efimov, 2012).

In Federal State Educational Standard of the primary general education, universal educational actions are grouped in four main units:

- 1) *personal actions*;
- 2) *regulatory actions*;
- 3) *cognitive actions*;
- 4) *communicative actions*.

Personal actions allow to make the learning process sensible; provide a pupil by the importance of the solution of educational tasks, coordinating them to the real vital purposes and situations. Personal actions are directed on understanding, research and acceptance of vital values and meanings, allow to orient in ethical standards and

estimates, develop the living position concerning world around, himself and his future.

Regulatory actions provide possibility to manage cognitive and educational activity by means of statement the purposes, planning, control, correction of actions and assessment of successful mastering. Consecutive transition to self-government and self-control in educational activity provides the base of future professional education and self-improvement.

Informative actions include research, search and selection of necessary information, its structuring; modeling of the studied contents, logical actions and operations, ways of tasks solution. Informative universal educational actions include all-subject logical educational actions, and statement and solution of a problem.

Communicative actions provide possibilities of cooperation such, as ability to hear, listen and understand the partner; to plan joint activity and carry it out in coordination; to cast; to control actions of each other; to be able to agree, conduct discussion; to express the thoughts in the speech; to respect the partner and himself in communication and cooperation. Ability to study means the ability to cooperate effectively with both a teacher, and contemporaries, ability and readiness to carry on dialogue, to look for decisions, to support each other.

The analysis of teachers' experience shows that the complete pedagogical system of L. V. Zankov provides achievement of the planned results by means of special selection and structuring the maintenance of subjects. Such selection creates conditions for realization of the system-activity approach and individual training. The subject contents is selected and structured on the basis of the didactic principle of the leading role of theoretical knowledge to create conditions for pupils' research of interdependence of phenomena and their internal essential communications.

"A pupil works at intersections of knowledge (on theoretical, theoretical and practical, intersubject and intrasubject levels) that, in turn, creates conditions for realization of the didactic principle of training at the high level of difficulty" (*Program for elementary school, 2012*). A pupil overcomes the arisen difficulty due to realization of the didactic principle of understanding of training process: "Why it did not turn out?", "What knowledge is missing?". Educational-research independent activity of the educational process subject is formed this way. This activity forms personal universal actions, character, communication-arguing thinking and search of missing information that leads to task solution.

Connections operating provides with communication multilevel systematization of knowledge, intermediate and total generalization that gives fast speed to training.

Below we consider possibilities of L.V. Zankov's didactic training system. In the course of school students' training according to L.V. Zankov's system, all types of universal educational actions *are formed at once*. To open this statement, we take into account the thought that the training purpose is development of child's identity. First, it means that a child should *understand the learning process. Motivation, formation of positive relation to learning, ability to self-assessment and so on* make a complex of personal universal educational actions.

Within L.V. Zankov's training system, a pupil is the subject of process, so he learns *to accept and keep an educational task, independently to plan the actions, to conduct total and step-by-step control, to introduce amendments in actions, to perceive teacher's assessment adequately*, i.e. he develops regulatory universal educational actions.

The purpose of the active pupil is recognition, opening, development, therefore he carries out the whole complex of informative universal educational actions: *work with information, carry out analysis and synthesis, establish relationships of cause and effect, create statements in an oral and written form, use general receptions of tasks solution*, etc.

Conditions for productive communication between pupils and between pupils and a teacher are created at lessons. It is an indispensable condition for pupils to solve educational tasks and for a teacher to define the zone of proximal development of each pupil and to build work with orientation to it. The part of the above-mentioned actions is carried out by pupils in the conditions of communication, i.e. they can *control actions of a partner, use the speech for regulation of an action, agree, come to the common decision, consider different opinions, seek for coordination, formulate own opinion and position, etc.* in a learning course. It means that there are conditions for development of communicative universal educational activities.

To carry out the learning process subordinated to the purpose is optimum general development of each child and it is possible only *in unity of* all types of universal educational activities, which are fully presented in the Federal State Educational Standard of the primary general education.

Coincidence of the major provisions of L. V. Zankov's didactic training system and Federal State Educational Standard of the primary general education characterize the present stage of education:

- the purpose of education is development of a person;
- understanding of need of common development, but not just intellectual development of pupils with different training opportunities;
- understanding of a way to achieve the purpose by organization of independent individual and joint activities.

The psychological-pedagogic system of L. V. Zankov can serve the technological component of education defining ways and means of universal educational actions formation, achievements of socially desirable level of pupils' development.

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PROBLEMS OF QUALIFIED PERSONNEL TRAINING IN SPA INDUSTRY

Abstract

The paper deals with the problem of qualified personnel lack in the sphere of Spa industry. The author reviews the existing educational programs in this sphere; justifies the need in development of specialized bachelor and magistracy programs for personnel training in Spa industry. Implementation of system training for Spa industry will allow to establish the general requirements to professional knowledge and competences of workers of all levels; to increase quality of Spa services; to develop production schedules in the industry; to enter professional standards regulating skill level of Spa personnel; to develop programs of personnel certification to confirm compliance of preparation level to the established requirements in the professional standard. Development and approval of the standard of the profession will allow Spa experts to take legal and official position in the Russian labor market.

Keywords

Spa industry, Spa complex, personnel training in Spa industry

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The Spa industry represents dynamically developing branch with the great services demand even during the crisis period. In spite of it, quality of provided services in Russian Spa industry objects does not meet clients' expectation (*Nikitina, Vorontsova, 2014*).

Modern consumers of Spa services demand quality technology and safety both for the service, and the provided attendance.

However, there are no standards regulating the majority of Spa procedures and carrying out technologies in the Russian Federation.

The existing standards do not regulate sanitary-hygienic norms and requirements to functional zones and other rooms for Spa procedures.

The only standard in national system of GOST P "Services to the population. Spa services. The general requirements" existing in this field was accepted in 2012. It establishes the general requirements to Spa services, requirements to safety of these services for life and health of consumers, safety of their property and environmental protection. It extends on organizations and enterprises (irrespectively of their organizational and legal form), on individual entrepreneurs rendering Spa services in a Spa salons, Spa centers in hotels and cruises (*Atlas of new professions, 2014*).

In spite of the fact that the majority of technologies, equipment and methods in modern Spa industry is represented by physiotherapeutic and balneological methods of treatment, they are still referred to the section 'Household Services' that does not demand licensing medical services. Today there is no uniform classification of Spa and wellness objects in the Russian practice, there are no production schedules of rendering these services. It will complicate carrying out licensing and accreditation of these objects in the near future (since 01/01/2015 these kinds of activity should be licensed).

Despite of the good professional level of the Russian medical personnel, the majority of the 'retraining for a new profession' physicians has no elementary skills of service. For example, with change of technologies, use of new practices of work and new inquiries of consumers, published 'Atlas of new professions' developed on 30-year prospect contains new professions in the sphere:

1. Molecular nutritionist,
2. Designer of medical institutions life,
3. Expert of the personified medicine,
4. Consultant for a healthy old age,
5. Network doctor (*Atlas of new professions*, 2014).

New professions will appear in the Spa segment (such, as Spa concierge, Spa coordinator, Spa-couch) and demand additional professional knowledge in the field of management and marketing on formation service packages, hospitality packages and existence of considerable communicative competences in the sphere of improving medicine, balneology and hospitality.

Relationship doctor-patient essentially differ from the accepted Spa etiquette since Spa is an individual service of the highest level, and the personnel trained to provide medical services in traditional understanding, is not ready to render individual service and Spa etiquette.

Most of experts come to the domestic sphere of Spa from others adjacent spheres and sometimes from very remote areas. All their knowledge and abilities are acquired by means of short-term trainings, self-education or own experience.

Till recently, employers arranged such state of affairs, since they also have no professional education in this sphere. However, globalization of this market of services, emergence of new technologies, increasing demand for Spa services both in the world, and on the national market of Spa services demand cardinal change of the existing 'self-educational' approach to formation of the domestic Spa services industry.

The Russian higher educational institutions do not conduct training of Spa and wellness personnel. However, since 2012 some higher educational institutions realize bachelor program with "the Hotel Business" profile: sanatorium activity and Spa industry. Programs of the specialization are generally directed on preparation of the linear personnel and functional middle managers of hotels, Spa and wellness hotels, sanatoria, boarding houses, etc.

Courses and programs of professional development of Spa and wellness direction, offered on a constant basis, are intended for heads of Spa salons. Besides, there are various short-term courses for cosmetologists, massage therapists, hairdressers (*Top training; TsNTI "Progress" St. Petersburg; City Business School; Universal Wellness Training*).

Remote on-line courses and webinars are rather popular. They represent training of specialized skills of management of beauty shops, SPA salons, wellness-centers, and clubs. First, these programs are interesting to experts-heads since training more reminds exchange of experience when each listener of webinar imparts own experience with colleagues. In addition, such courses help to find a mentor (tutor), who can help the beginners in saloon business (*Esthete Consulting*).

Thus, the existing courses of specializations, professional development, remote courses are directed on heads, who already have own business or on managers of the existing enterprises for rendering services in the industries of beauty, esthetic cosmetology, Spa and wellness and massage salons.

The main lack of these programs is teaching highly specialized courses on separate activities without system approach to training in this area.

Within the specialized Russian portal 'Magistracy' (*Magistratura.su*) we carried out the analysis of the master programs for Spa industry training.

The search results can be formulated as follows.

The main directions of magistracy preparation are:

- 'Tourism',
- 'Hotel business',
- 'Economics',
- 'Management',
- 'Service'.

There are specialized master programs of preparation for tourism and recreation sphere in these directions.

As a rule, Master programs of 'Tourism' direction include the considerable volume of information-analytical, administrative, recreational-geographical and technological disciplines reflecting various branch aspects of tourist business.

Programs of 'Hotel Business' magistracy are balanced and consider the international aspects of network hotel business, use the considerable volume of the technological disciplines reflecting branch aspects of hotel business development.

Master programs of 'Economy' direction with specialization in tourism and recreation include the considerable volume of economic and administrative disciplines and disciplines reflecting branch technological aspects of tourist business.

In master programs of 'Management' direction with specialization in tourism and recreation, the prevailing role plays the block of special economic-administrative disciplines. Programs provide fundamental preparation in the field of management, have disciplines of branch orientation and are focused on technologies of conducting electronic business in tourism, hotel and restaurant segments.

Master programs of 'Service' direction are focused on profile part of training on diagnostics and examination of systems and models of quality at the enterprises without studying branch orientation and features of the enterprises of various fields of activity.

The master programs investigated by us are functionally specialized providing labor market with qualified specialists of the corresponding profile.

However, any master program does not consider activity specifics or any aspects of development of Spa industry, wellness, improving rest or sanatorium activity.

Thus, training of specialists (bachelors and masters) with fundamental administrative preparation and wide interdisciplinary erudition in this sphere, skills of analytical and scientific work is actual and extra necessary for the domestic industry of Spa, wellness and improving rest,.

In the conditions of enormous break of medical technologies, new tendencies, concepts and models of business enriched Spa industry (both world and domestic) in the recent years.

Steady demand for Spa and wellness services is observed around the world. This activity is provided with impressive number of companies with various profile having a straight line or the connected sphere of business -hotel, sanatorium, medical, travel, restaurant, leisure, cosmetology agencies, producers of fitness and medical equipment, etc.

Therefore, we believe that today it is necessary to develop specialized bachelor and magistracy programs for purposeful preparation of the personnel for domestic Spa industry that will allow to solve the following problems:

- introduction of the professional standards regulating skill level of Spa industry personnel;
- approval of the standard of a profession (it will allow Spa experts to take legal and official position on the Russian labor market);

- development of programs of certification of Spa industry personnel to confirm compliance of preparation level, professional knowledge, skills and experience of experts to the established requirements.

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INTERACTION OF REGIONAL BANKS AND BUSINESS SECTOR AS A FACTOR OF SUSTAINABLE DEVELOPMENT OF THE SAMARA REGION

Abstract

Development of the banking sector of the Russian Federation faces a large number of problems: operations of the regulator, shown in revocation of licenses and increase of a key rate, restriction of external loans, decrease in trust of the population. In these conditions, development of regional banks has to be carried out on the way of their active interaction with a business sector by means of active participation of the regional authorities. Use of mechanisms of subsidizing of the interest rate on credits of regional banks has to promote increase of enterprise activity of subjects of small and medium business and increase stability of credit institutions.

Keywords

regional banks, credit portfolio, small and medium business,
subsidizing of the interest rate on credit

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In conditions of financial crisis and insufficient volume of financial resources, which small and medium business has for the development, the banking system has to become some kind of catalyst of regional economic development. The modern regional banking market consists of territorial offices of the Bank of Russia, branches of large network banks, generally with the state participation, and the credit institutions registered on the territory of the region. It would be desirable to talk about the last group of financial credit

institutions details since effective development of real sector of economy depends on their policy for real sector of economy of the region.

For several decades people told about the need to develop small and medium business, various mechanisms of its stimulation, but real break in this sphere did not happen. Thus, one of the key factors constraining large-scale development of small business is inaccessibility to raise the loan capital. In our opinion, the solution of this problem is possible by means of active involvement of small and medium business of regional banks in process of financing. The branches of large banks working at the territory of the region cannot effectively work at this direction owing to universality of the services and impossibility of providing unique service to the specific borrower-businessman for the solution of its pressing problems. Besides, they have peculiar excessive to bureaucratization, when issues are resolved by appealing to the company's head, and decision-making on issuance of credit or restructuring of debt is unreasonably tightened. For small business, questions of efficiency and individual approach to bank service come to the forefront that is rather essential competitive advantage of small regional banks. In this regard, questions of effective interaction of regional banks and business sector are especially actual, especially in conditions of the declared course on import substitution.

Recently the banking system of Russia in general and its separate elements in particular is under the enormous pressure from a set of the parties caused by both objective and subjective factors. The main components of this pressure are:

1. Strengthening of banking system control by the regulator, shown in practice in mass revocation of licenses generally of small banks, which average size of assets made 10 billion rubles (*Vedev, Drobyshevsky, Sinelnikov-Murylev, Khromov*).

Process of licenses revocation was significantly accelerated after Elvira Nabyullina had taken office of the head of the Central Bank on June 24, 2013. It is slightly more than in one and a half years (as of January 29, 2015). The Central bank withdrew licenses of 104 banks; the last banks in this list were JSC CB AkademRusBank (Moscow) and VLBANK (AO) (The Irkutsk region, the city of Ust'-Kut).

The main reasons for licenses revocation were:

- non-compliance with requirements of legislation in the field of counteraction of legalization (washing) of income gained in the criminal way, and financing of terrorism;
- carrying out the high-risky credit policy connected with placement of money in low-quality assets;
- decrease in the size of own means (capital) below the minimum value of authorized capital;
- carrying out doubtful operations with cash and withdrawal of funds in large volumes abroad.

2. Reduction of opportunities for external loans in connection with introduction of the anti-Russian sanctions by the certain states (generally it concerns large banks with the state participation).

3. Outflow of means from the population deposits in connection with sharp weakening of national currency rate, inflation and decrease of population trust to small and average banks that leads to reduction of liquidity of financial institutions and threatens their financial stability.

4. Central bank increased the key rate to 17% that in the short term can affect credit policy of banks by increase of interest rate for again granted loans and reduction of a credit portfolio (later since February 2, 2015 it was lowered to 15% that would hardly have essential impact on increase of credit activity).

The Samara banking market as the integral part of the all-Russian market is influenced by all above-mentioned factors. Besides, the banks registered on the territory of the Samara region (regional banks) are compelled to test fierce competition with branches and representative offices of large banks.

The state on 01.01.2015 counted 15 regional credit organizations in the Samara region and 45 branches of the banks registered in the other regions, mainly large banks with the state participation (hereinafter in the text data of <http://www.cbr.ru> Bank of Russia/). It should be noted that JSC Clearing House of the Samara Currency Interbank Exchange is non-bank credit organization; in this connection in the further research, the number of regional banks will be equal to 14.

On an indicator of concentration of extra-regional branches, the Samara region is on the second place after the Nizhny Novgorod Region in the Volga Federal District and on the 7th place in the Russian Federation in general that testifies to the serious interest to the region among large financial credit institutions caused by the level of its economic development.

From 14 regional banks of the Samara Region, 4 banks (29%) are not capitalized banks, which are not be able to fulfill obligatory requirements of the regulator in 2015 taking into account coming into effect of new requirements for the size of authorized capital 300 million rubles (fig. 1). The volume of necessary recapitalization on them totally makes nearly 390 million rubles. It should be noted that the Central bank would direct special supervising attention on such banks (*Sukhov, 2014*).

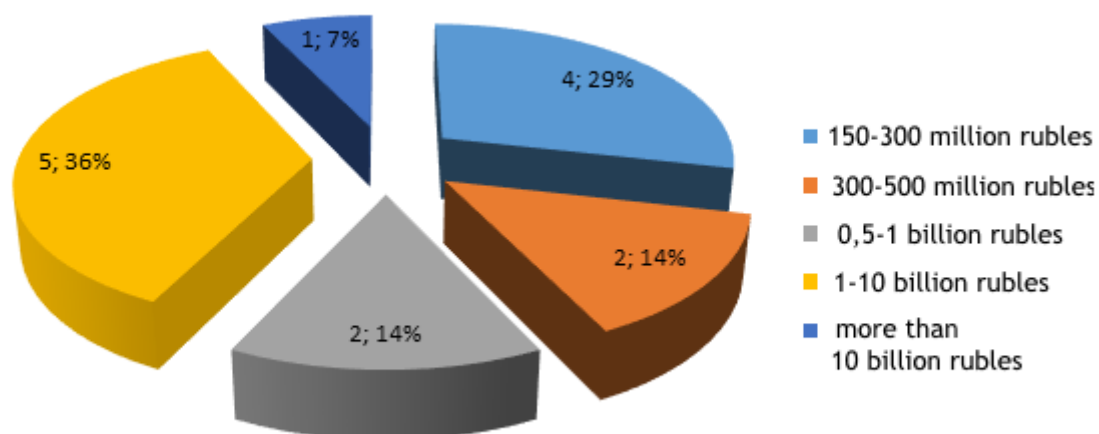


FIGURE 1. STRUCTURE OF THE REGIONAL BANKING SECTOR IN SIZE OF AUTHORIZED CAPITAL (NUMBER OF BANKS, SHARE IN %) ON 01.01.2015.

Interaction of banking and business sector of the region has been dynamically developing in recent years (tab. 1).

The total amount of raised funds of organizations by the banking sector of the Samara region for the beginning of 2014 made 131,1 billion rubles (growth in 2,2 times in three years). The share of regional credit institutions in the raised funds practically steadily was about 40% with a failure to 34,4% in 2013. Growth rates of the raised funds by branches exceeded a similar indicator on regional banks on 7,1 percentage points.

Crediting of business sector for the studied period increased almost by 85% and reached 1,1 trillion rubles. The share of regional banks in the credits issued to the organizations reduced from 57% to 50,5% at essential lag in growth rates of a credit portfolio.

Arrears of the organizations to the banking sector of the region during 2011-2013 reduced by 16,6%, the debt only by regional credit institutions reduced more than by a third (their share in this indicator makes only 12,6%).

The volume of financing of small business in the Samara region for the considered period grew by 38,4% and made 185,9 billion rubles. Thus the credit portfolio of regional banks even reduced by 5,6%, and their share decreased from 65,5% to 44,6%.

In our opinion, such situation is caused by high risks of small business financing, which big share in a credit portfolio directly can affect stability of small regional banks.

In structure of the Samara regional banks on 01.01.2015, the credit institutions focused on business sector in the credit policy (fig. 2). 10 banks (72%) registered on the territory of the region had 60% and more. share of the credits to the organizations in a credit portfolio.

Considering the structure of a credit portfolio of regional banks, it is necessary to pay attention to JSC Rusfinance Bank, being the large regional specialized retail bank, which key directions of business are car loans, credit cards and consumer credits.

TABLE 1. DYNAMICS OF INTERACTION OF BANKING AND BUSINESS OF THE SAMARA REGION, BILLION RUBLES (FOR THE BEGINNING OF YEAR)

Indicator	2011.	2012.	2013.	2014.	Change, billion rubles.	Change, %
Deposits and other raised funds of organizations						
The Samara Region	59,1	81,0	83,8	131,1	72,0	121,8
including regional banks	23,9	31,0	28,8	52,0	28,1	117,6
branches of extra-regional banks	35,2	50	55	79,1	43,9	124,7
Share of regional banks, %	40,4	38,3	34,4	39,7	- 0,8	-
Volumes of crediting of legal entities and individual entrepreneurs						
The Samara region	594,7	820,5	951,9	1099,8	505,1	84,9
including regional banks	338,7	405,2	452,0	555,4	216,7	64,0
branches of extra-regional banks	256,0	415,3	499,9	544,4	288,4	112,7
Share of regional banks, %	57,0	49,4	47,5	50,5	- 6,5	-
Arrears on the credits of organizations						
The Samara region	31,4	33,0	26,5	26,2	- 5,2	- 16,6
including regional banks	5,0	4,2	3,3	3,3	- 1,7	- 34,0
branches of extra-regional banks	26,4	28,8	23,2	22,9	- 3,5	- 13,3
Share of regional banks, %	15,9	12,7	12,5	12,6	- 3,3	-
Volumes of crediting of small enterprises and individual entrepreneurs						
The Samara region	134,3	151,4	157,7	185,9	51,6	38,4
including regional banks	87,9	84,2	64,7	83,0	- 4,9	- 5,6
branches of extra-regional banks	46,4	67,2	93,0	102,9	56,5	121,8
Share of regional banks, %	65,5	55,6	41,0	44,6	- 20,8	-

This financial institution quite conditionally can be carried to the regional banks, since it is completely under control of Moscow Rosbank, which, in turn, enters one of the world's largest banking groups Societe Generale. The main sources of funding are the funds raised from parent group, and public loans (*Banki.ru*). The share of JSC Rusfinance Bank in a credit portfolio of regional banks makes 42,6%, and in crediting of the enterprises and organizations - 0,2%.

Among biggest regional banks (fig. 3) are JSC Pervobank (23% of total amount of loans granted to enterprises and organizations), JSC Avtovazbank conducting activity under the

AVB Bank brand (20%), JSC ActiveKapital Bank (14%), JSC JSB Gazbank (13%), JSC Commercial Bank FIA-Bank (10%), JSB Tolyattikhibank (7%). The share of other banks of credits to legal entities of the Samara region is 13% in the sum.

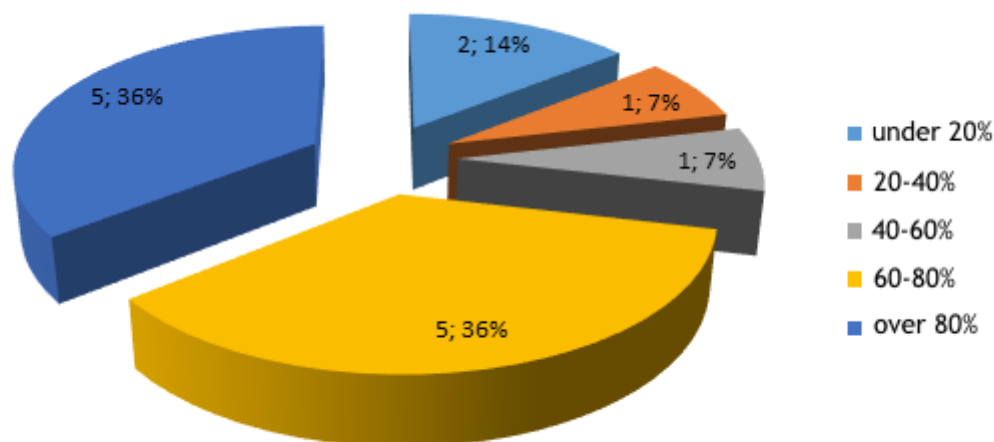


FIGURE 2. STRUCTURE OF THE REGIONAL BANKING SECTOR ON SHARE OF THE CREDITS TO ORGANIZATIONS IN CREDIT PORTFOLIO (NUMBER OF BANKS, SHARE IN %) ON 01.01.2015 (ACCORDING TO [HTTP://WWW .BANKI.RU](http://www.banki.ru) PORTAL)

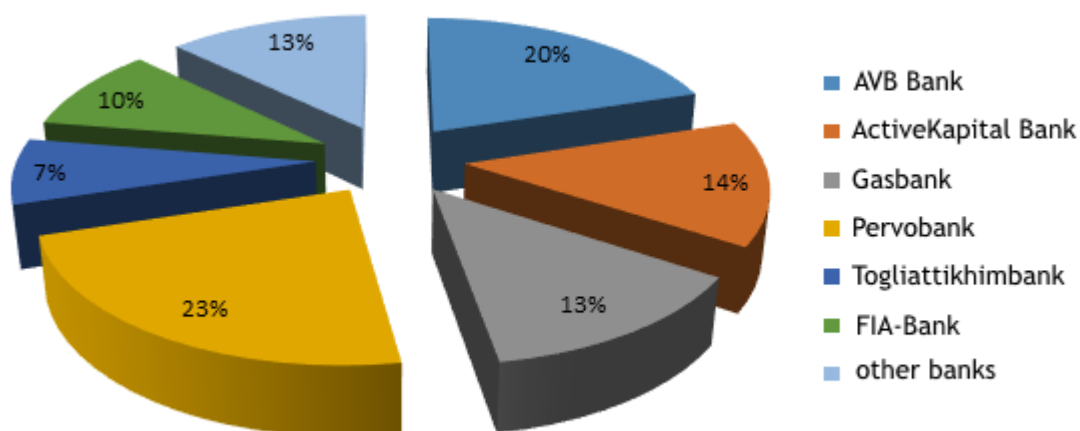


FIGURE 3. STRUCTURE OF LOANS GRANTED TO ORGANIZATIONS BY REGIONAL BANKS ON 01.01.2015 (ACCORDING TO [HTTP://WWW .BANKI.RU](http://www.banki.ru) PORTAL)

The volume of arrears of enterprises for credits to regional banks on January 1, 2015 makes 5,5 billion rubles that makes 4,7% of the total value of granted loans. It should be noted that 43,7% of all arrears (2,4 billion rubles) is the share of the Samara bank 'Solidarnost', which undergoes sanitation procedure at present, a sanator is the financial group 'Layf' - the bank holding created on the basis of Moscow "Probusinessbank". After solvency crisis, which the bank met at the end of 2013 owing to excessive demand for cash withdrawal by clients as a result of hearings about bankruptcy of the credit organization, 'Solidarity' continues to increase delay on the credits, now its share reaches 16,1% of

portfolio and grows in dynamics. Thus, business sector can be carried to rather disciplined borrowers, if not to take in attention a problem of separately taken credit institutions.

The important factor of interaction between regional credit institutions and business sector is granting the average and long-term credits, which, as a rule, are directed on improvement of material base and other investment purposes. Such long-term cooperation of banks and organizations promotes modernization of real sector of economy of the Samara region and full realization of its high production, scientific-technical and innovative potential (*Tershukova, Tokar, 2014*).

The cumulative share of the average and long-term loans granted by regional banks to business sector on the beginning of 2015 makes 58% that guarantees borrowers a certain level of financial stability.

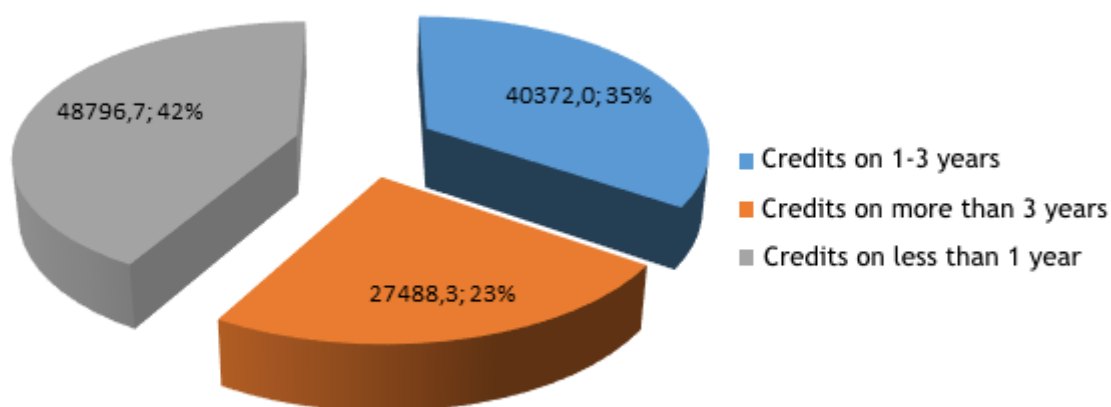


FIGURE 4. STRUCTURE OF LOANS GRANTED TO ORGANIZATIONS BY REGIONAL BANKS ON GRANTING TERMS ON 01.01.2015 (VOLUME OF FUNDS IN MILLION RUBLES, SHARE IN %) (ACCORDING TO [HTTP://WWW .BANKI.RU](http://www.banki.ru) PORTAL)

Further development of system of regional credit institutions and business sector has to be carried out by their active interaction by means of realization of various state mechanisms of small and medium business support. Interest of all parties in similar interaction does not raise any doubts. Therefore, the region receives the following benefits:

- the active development of bank and enterprise sectors, solving social problems in conditions of crisis, such as creation of new workplaces, increase of an employment rate and income of population;
- increase in tax revenues from both effectively working businessmen, who received funds for the development, and profit of financial credit institutions, which favorably placed the capital.

Business sector can get the following advantages:

- receiving credit resources on profitable terms;
- individual approach to crediting and providing the accompanying services;
- flexible approach in questions of restructuring of debt on credits.

Regional banks have to receive serious benefits from such cooperation:

- guarantees from authorities of the allowed loans return;
- increase in credit portfolio with the guaranteed marginality that would relieve banks of funds investment in more risky assets and, as a result, would increase their stability and profitability.

The mechanism of interaction has to be based on the region's subsidizing of interest rate for loan granted by bank, which is a guarantee of its return (Nikitina, 2012). The key difference of the offered interaction mechanism from existing ones is primary participation in its realization of regional banks, since they have certain advantages in comparison with branches of extra-regional banks: flexibility, mobility and individual approach to crediting, and also payment of taxes in the regional budget.

It is supposed that within realization of the similar mechanism, businessman would independently choose regional credit institution, which would offer more favorable and convenient services in granting the credit. The regional authorities would be engaged in examination of the project, within which the loan would be granted, and would carry out subsidizing of interest rate for the credit at the expense of the regional budget funds.

However, it should be noted that the approved state program of the Samara region 'Development of business, trade and tourism in the Samara region' for 2014-2019 does not provide assignment for subsidizing of interest rate for credits to small and medium business. Though it comprises a task of access expansion for of small and medium business subjects to credit and financial resources. The financing amount of this direction in 2015 has to make nearly 88 million rubles, and during 2014-2019 more than 0,5 billion rubles (*The resolution...*).

In such conditions, possibilities of small and medium business on financing their activity are significantly reduced, especially in conditions of current situation on the capital market.

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MODULE-RATING TRAINING TECHNOLOGY IN STUDYING CHEMICAL DISCIPLINES WITH HIGH SHARE OF INDEPENDENT WORK

Abstract

The relevance of the studied problem is caused by the need to receive qualitative knowledge as the guaranteed result of studying chemical disciplines with high share of independent work at agrarian higher educational institutions. The purpose of the paper is theoretical justification and experimental quality check of training with application of module-rating technology in teaching chemical disciplines. The leading methods of the research problem are pedagogical experiment, comparison, generalization. The authors review pedagogical researches of theoretical and methodological bases of training quality assessment at the present stage of development of higher education system and assess the efficiency of module-rating technology of teaching chemical disciplines at the chemistry department of the Oryol State Agricultural University (OryolSAU). The module acts in the form of differential control of students' knowledge. The basis of efficiency parameters is quality of the acquired knowledge, skills and abilities, informative activity and strengthening of motivation of a trained. Materials of the paper can be useful to teachers of higher educational institutions with both chemical and non-chemical profiles.

Keywords

module-rating technology, assessment of students' quality of knowledge,
educational rating, chemical disciplines

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Quality of the highest professional education directly depends on success of the certain person and positive development of society. The higher education is one of the defining factors, when training the skilled worker of appropriate level and profile, competitive in labor market, competent, responsible, masterfully using the profession, ready to continuous professional growth.

The problem of quality assessment of training professionals at higher educational institution, improvement of training technologies to increase efficiency of knowledge, abilities and skills assimilation is one of the most actual problems at higher educational institution.

The research objective is theoretical justification and experimental quality check of training with application of module-rating technology in teaching chemical disciplines at the Oryol State Agricultural University.

The research methods are methods of empirical research (supervision, pedagogical experiment, comparison, description), methods of theoretical knowledge (generalization, formalization), general-logical methods and receptions (analysis, synthesis, modeling).

The analysis of pedagogical researches established that quality of training represents the complex characteristic of pedagogical process describing its state and productivity in compliance not only with requirements of the State educational standard of higher education, but also requirements and expectations of pedagogical process subjects. Quality of training is defined by a set of indicators characterizing productivity of pedagogical process and its main components.

Quality control of training is the integral component of educational process and purposeful information stating, diagnostic-training and reflexive interaction of educational process subjects (*Barysheva, 2009*).

The motivation to master knowledge and progress in study depend on assessment of students' progress. Modern students are very critical to any injustice and belittling of their human dignity. In the course of training and, in particular, during knowledge assessment, is extremely important for a teacher to show the maximum goodwill in combination with insistence and individual approach, ability to compare achievements not only with norm, but also with previous failures or progress. In this regard, authoritative style of communication of a teacher with trained becomes inappropriate and strict requirements to creative and unconventionally thinking students are unacceptable. Their psychological spirit and aspiration to self-realization in collective depends on objectivity and regularity of assessment of students' progress.

The assessment of quality is one of the most important parts of educational process. In a certain measure, it promotes personal growth of students, strengthens or reduces motivation to studying this or that subject matter, forms ability to fight for new achievements or its refusal (*Galitskaya, 2004*).

Experience of work at higher educational institution shows: often junior students cannot systematically control process of training and tensely work during a semester that does not allow to create profound knowledge in subject. The module-rating technology as a mean of formation of informative activity, skills of self-checking, independent work is directed on solution of these problems during the entire period of training.

It is necessary to understand autonomous organizational-methodological structure of a subject matter, which includes didactic purposes, logically complete unit of training material (made taking into account intra subject and interdisciplinary communications), methodological management (including didactic materials) and monitoring system as the module.

To work with module-rating technology it is extremely important to regulate control of knowledge. For this purpose, the corresponding methodological providing is needed for both internal and correspondence departments. Such methodological providing is tests, set of tasks and exercises to control each section of chemical disciplines (*Khilkova, 2010; Yarovan, 2010*).

Teachers of the OryolSAU have been applying module-rating system for many years. The most productive way of quantitative assessment of students' educational achievements is rating control, at which the total assessment turns out as a result of summation of the current estimates (balls). The rating is the total integrated score characterizing the level and volume of work in the course of studying training material.

Advantage of such system is possibility of differentiated assessment of current types of works depending on their importance. Thus intensity of training is defined not so much by the time which is given for training course, but by extent of material mastering by a trainee.

Introduction of multi-grade system of assessment allows, on the one hand, to reflect specific features of students in a mark range, and, on the other, to estimate effort of students in points. Besides, the system of rating assessment joins additional incentive points for originality, novelty of approaches to perform individual tasks or solve scientific problems.

In this regard, the most effective form of knowledge assessment at chemistry department of the OryolSAU is rating 100-ball system, which promotes increase of motivation to self-education and self-estimation and allows to give an objective assessment for the entire period of training by means of gradation of points, got by students for performance of different types of educational and creative works, participations in contests, conferences, competitions on creative and research works, etc. Assessment of students' knowledge take into account attendance of lectures, reports on seminars, preparation of papers and reports, effective work on practical lessons (Markina, 2009; Chistov, 2012).

To check efficiency of the developed system of professional assessment of training quality, we carried out pedagogical experiment at chemistry department of the OryolSAU.

Work of a teacher using module-rating technology includes the following actions:

1. Development of the working program on discipline with the use of module-rating technology.

2. All course breaks into thematic sections (modules), which have purposes urged to form certain competences of trained. The volume of independent work, forms of knowledge control, rating assessment of all types of work, incentive and penal points are defined.

3. Formation of educational-methodological ensuring of independent work of trained: tasks for entrance, intermediate and total control; tasks and exercises on discipline; topics for papers.

4. At the end of training, the sum of the points gained for the entire period is defined and the general mark is put down. Trained, having total amount of points on a rating from 86% to 100%, can be exempted from offsets (examination).

The main control points when charging a rating:

- performance of a task for choice: paper, report, performance;
- abstract for a textbook, journal, article;
- report about laboratory work;
- results of entrance, intermediate and total control;
- solution of out-of-class tasks and exercises;
- oral answer;
- solution of tests.

Additional and incentive points are charged by results of independent work and participation in active forms of education (≤ 25 points within the 100-point scale):

- design of questions of different complexity for participation in lecture conference, round table, student's conference;
- preparation of additional material on a subject;
- performance of the paper with presentation;
- solution of problem tasks on a subject;
- participation in contests and competitions;
- essay writing.

Our experience showed that the module-rating technology strengthens motivation of trained as a driving force of their self-development, expressed interest in systematic hard work over training material. Understanding of objective estimation of progress and achievements by a student, belief in objective approach to gain score gives a basis of motivation.

The module-rating technology of training allows trained independently to study the maintenance of the module if they were absent on class with preservation of control elements and self-checking of knowledge.

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"UNCLE MUSEUM" AT THE BEGINNING OF XX CENTURY IN RUSSIA**Abstract**

The paper is devoted to the activity of the first special Russian museum for children at the beginning of XX century. The museum is connected with the name of N. Bartram.

Keywords

museum, children, beginning of XX century, Bartram

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Any period of human life does not cause so many questions, disputes and guesses, as the childhood. The deep meaning is concluded in this postulate: destiny of the country eventually depends on problems of children's education in it. Only the society capable to prepare spiritually and physically healthy change is really wise and humane one.

The relevance of the research is connected with increase of public interest to educational activity of museums, which, being the culture centers, carry out live communication and continuity of generations. Today the museums, using the unique opportunities, can help children to feel relationship with nation and its history, to learn to live under laws of beauty, good and moral.

The paper recreates a complete historical picture of formation of a branch of 'children's' direction of museum work. For this purpose, we studied periodic and non-periodic literature of the beginning of the last century and archival materials of the central Russian museums (namely, Archive of the State Historical Museum, Archive of the Art and Pedagogical Museum of a Toy (APMT), State Archive of the Russian Federation).

In the first decades of the XX century, theorists and practitioners of museum business put forward an idea of familiarizing preschool children with the museums, especially emphasizing the need to create special museums for children.

A peculiar sign of that times was creation of Institute of a child in 1918 (*State Archive of the Russian Federation*, f.2306, ed.khr.209, l.9), and then some other institutes, which were engaged in studying children's psychology, social environment and children's communities. Not without reason the famous theorist and practitioner of children's art education A. V. Bakushinsky called the new historical time 'the child's century' (*Bakushinsky, 1922*).

N. D. Bartram (1873-1931) was one of the first, who realized the idea about the special museum for children. The first visitors of Toy Museum called him 'Uncle Musuem' (*Uspenskaya, Shkarovsky, 1960*). N. D. Bartram's diverse creative activity is rather fully described in the researches and articles published generally to anniversaries of the artist's life (*Prokopyev, 1936; Uspenskaya, Shkarovsky, 1960; Izergina, 1969; Izergina, 1970; Ovchinnikova, 1972; Bartram, 1973; Dine, 1973*). The specified works lit the parts of biography, which are connected with N. D. Bartram's contribution to development of a toy as an art form and as an educational tool of children, and the revival of national crafts. Some facts about the Bartram's Toy Museum are less revealed and sometimes inconsistent. Therefore, we think advisable to analyze the activity of the first children's museum in our country for further use of this experience.

As the artist, N. D. Bartram stated at the Moscow school of painting, sculpture and architecture, in V. N. Baksheev and N. A. Martynov's workshops. He received the deep understanding of national creativity and interest to museum business from the father, the artist Dmitry Ernestovich Bartram, and the historian academician I. E. Zabelin, under whose leadership he worked in the State Historical Museum within several years. Being 20-year old, Bartram opened a workshop on the homeland, in the village Semenovka of the Kursk Province (now the Kursk Region), where he learned both technology of toy production and ability to observe, see the beauty in surrounding reality. Then the artist started designing children's magazines and illustrating books for children. He was excited by thoughts of a drawing role in the child's life and educational value of a toy and game. He participated in organization of 'the House of a Free Child' in Moscow in 1905-1906. The founders of the House tried to develop child's abilities without active intervention of teachers, but with provision of freedom.

The next decade, Bartram studied museum matter, history of a toy and industry in European museums. From 1904 till 1917, he managed the Handicraft Museum in Moscow and already dreamed to open a toy museum for children.

After the revolution (1917), Bartram was sent to Narkompros (the Ministry of Education in the Soviet Union) in the department of protection art and antiquity monuments, where he worked for many years as the member of Glavmuzey (the Head Museum of Narkompros) board and as the president of the decorative art commission. According to the artist's personal case, he was appointed in the department of protection art and antiquity monuments on September 5, 1918 (*State Archive of the Russian Federation*, f.2306, ed.khr.987, l.1). When the researchers (E. Ovchinnikova, S. Uspenskaya, G. Dine, N. Shkarovskaya) say that the Toy Museum was founded in 1918, they mean Narkompros's permission to create the museum (*Bartram, 1973*). Thus any authors did not specify the date of museum's opening. Possibly, the museum was opened at the beginning of December, 1919. Memoirs of Bartram's daughter A. N. Izergina testified it (*Bartram, 1973*). Moreover, the Art Life magazine on December 1919 said that the commission of decorative art arranged the Toy Museum to pay special attention to children's art development ("*Toy Museum*", 1919). S. Uspenskaya and N. Shkarovskaya had the opinion that Bartram became the director of the Toy Museum in 1921 (*Uspenskaya, Shkarovskaya, 1960*), but the opinion is unreasonable. The facts testify that Bartram was the director of the Toy Museum since 1919 and till his death (E. Ovchinnikova, G. Dine, A. Izergina proved it).

The artist's daughter remembers, "The idea of creation of the Toy Museum in Russia was new. There was nothing that could serve as a starting point for the organization of the museum. There was only a deep belief in undertaking and big love to it" (*Bartram, 1973*). We want to add that besides belief and love there were deep knowledge and big experience of practical work necessary for success of any business.

A. N. Izergina's memoirs about the first visitors of the Toy Museum transferred the atmosphere reigning in the museum: greatness of spirit and depth of the plan, in spite of difficulty of real life: "the first children worn valenki, fur coats, warm scarfs and caps. They left wet traces on a parquet behind. First, they looked bewitched by extraordinariness of the surrounding. Behind the windows, there were the blizzed Smolensky Boulevard, white snowdrifts, queue for bread, ruin. But there was a gold fund of the country - the future, children, despite everything played and demanded toys" (*Bartram, 1973*). Activity of the children's museums is based on game activity. Game, being a distinctive phenomenon of human activity, drew attention of researchers in all times. Many things, with which game lives and which it embodies in the action, are scooped from reality.

In a year after the museum opening in November 1920, there was "A week of a child" in a heavy time of hunger, cold, civil war in the country. On November 7, the Toy Museum opened the new exhibition. This fact was reflected in the Pravda newspaper. It told about the first Toy Museum in country, which collected surprisingly big and various collection. The newspaper specially underlined the positive and unusual phenomenon - "among visitors there were children, both separately coming from the streets and already chosen this exhibition as 'their own' and bringing there their little companions, excursion from schools, children's kindergartens, colonies, etc." ("*Toy Museum*", 1920).

The exposition decision in the museum took into account child's perception of a toy, and only after it perception of theater and book (*Bartram, 1973*). We agree with G. Dine that Bartram's merit was that he "was the first person, who showed art and pedagogical connection between all these links of the educational system" (*Dine, 1973*).

Bartram's work with children was based on daily supervision over little visitors, receiving consultations and advice from them, which they generously shared the Uncle Museum (this way children called N. D. Bartram). The first hall presented models of country art. Bartram understood that these colorful, amusing, joyful and rough in a form toys are the closest to a child (*Bartram, 1909*). Incompleteness of toy gave him the opportunity to dream and create.

Bartram divided toys into two types: 'pleasure of a child' and 'life mirror' (*Izergina, 1970*). The acquaintance with the museum began from acquaintance with the toys of the first type. Here it was often possible to observe interesting scenes: one girl came every day with a bucket 'to milk' the cow standing in a show-window (*Izergina, 1970*); boys diligently copied bearing of toy soldiers; girls brought the dolls, compared them and played with them (*Archive of the Art and Pedagogical Museum of a Toy (APMT)*, op.1, ed.khr.10, l.6). Such direct communication in the museum halls with exhibits, employees and each other developed emotions and feelings of a child. Observing children, Bartram made the conclusion that the major and inexhaustible source and engine of child's games was his internal feeling, creative pleasure. A child is capable to present that he wants, without hesitating of neither place, nor time (*Bartram, 1925*).

The second hall exhibited toys of the second type - 'life mirror'. They reflected life of people, rural and city life. Ware, 'food' for dolls, toys of the countries and peoples were represented there. In this hall, there was also children's lodge for games recreating a situation of a mansion of the 40th years of the XIX century. Possibly, the purpose of exposition organizers was to acquaint children with the life of people of that time.

Bartram gave a big role in education of children to collective games. In the museum, the new type of 'construction material' for joint games was created. There were cubes,

elements for constructions, small columns with slightly planned heads, figures of animals. The last ones appeared at children's request. This material was enough for children to create cities, villages; to arrange zoological garden, the house of 'Glavodezhda' - the place, from which fine-molded figures 'entered' and 'left' already dressed in color pieces of paper and rags. These not numerous elements turned into the interesting world with constantly changing scenes in the child's hands. This game gained the Honorable diploma and two gold medals at the International exhibition in Paris in 1925.

Children's portraits since the XVIII century were represented in the second hall. Children could see how their contemporaries living in other time were dressed.

According to Bartram, the Toy Museum had the same value for children as the "other historical and art museums for adults" (*State Archive of the Russian Federation*, f.2307, ed.khr.226, l.12). Children, playing, i.e. being in the most natural state to their age, comprehended history of the other peoples through works of art.

Further young visitors of the museum could receive data on geography, ethnography, art, natural sciences, mathematics. From the hall to the hall, the way conducting a child from a toy to knowledge was clearly demonstrated. Bartram represented this process as follows: a binding element between all stages of child's development is game. When a child starts putting words from cubes, he takes the first step from game to knowledge.

The last hall represented models of printing production. A child could get acquainted with evolution of book decorating since the end of the XVIII century to the present.

Summing up the result of the characteristic of the Toy Museum exposition, the main audience (more than 90%) of which was children from 4 to 10 years (*Archive of the Art and Pedagogical Museum of a Toy (APMT)*, op.1, ed.khr.10, l.5), it is possible to mark out its most essential features:

- expositions were constructed taking into account psychology and needs of children of a certain age;
- selection and arrangement of exhibits promoted development of imagination, creative opportunities of children;
- expositions supplied children with the first information on geography, ethnography, art, natural sciences, mathematics;
- game was the main method of children's activity. Employees managed to create the situation promoting the desire to play.

As it was shown, the exposition was substantially made for numerous visit of the museum. Striving for the greatest pedagogical effect, Bartram and his colleagues paid special attention to work with constant contingent of visitors. So, organized groups from orphanages, kindergartens, etc. often came to the museum (*State Archive of the Russian Federation*, f.2307, ed.khr.13, l.7-8). The museum workers recommended to heads of these groups to visit the Museum once again in a few weeks after the first visit to raise the quality of perception and fix the critical relation for exhibits.

The museum organizers believed that the museum played a role of activator of teenage creative aspirations: 'let's look and we make it on our own'. To develop labor skills the museum opened the children's workshop.

The museum gave big help to teachers, and not only from the central regions of the country, but also from the far provinces. The participants of pedagogical conferences, congresses, etc. became visitors of the museum. Here they had an opportunity to study child's development in game activity and their relation to a toy. The Moscow teachers, who were listeners of museum courses, studied in details 'the alphabet of labor' on the basis of the museum collection. The Toy Museum started carrying out a role of a peculiar center of museum pedagogics.

By right, N. D. Bartram considered the museum as historical-pedagogical and production museum (*Archive of the Art and Pedagogical Museum of a Toy (APMT)*, op.1, ed.khr.10, l.5). The last meant that the museum had a task of "direct impact on

production for improvement of production quality and creation of new samples of toys for the modern industry" (Ovchinnikova, 1972). The museum conducted courses on training experts and production workshop. The artist D. V. Gorlov, one of regular customers of the Toy Museum, truly noticed that the museum "was the materialized expression of Bartram's many-sided endowments" (Bartram, 1973).

Unfortunately, the understanding of true value of the Toy Museum in Moscow as considerable phenomenon in culture came only decades later after its elimination. Today our task is to analyze experience of the country's first museum for children and learn lessons from the past.

The documents of the 20th convince us that the Toy Museum was useful to children, teachers, actors of children's theater of the country. The famous scientist V. L. Gorodtsov expressed the opinion about the museum the following way: "In view of exclusive importance of the museum of children's toy... it should be supported by the whole society... The Toy Museum matters not only as a source of scientific knowledge, but even more as a source of the correct education of the future generations" (*Archive of the State Historical Museum*, f.431, ed.khr.309/P, l.33-34).

The attitude towards the museum of foreign figures testifies to unique value of the Toy Museum. The visitors' book of the museum contains the record of the Italian journalist Roberto Susper: "I envied... that the USSR has such wise center, which is a nursery of true art, the tutor of children - flowers of a mankind (*Archive of the Art and Pedagogical Museum of a Toy (APMT)*, op.1, ed.khr.3, l.18). The newspaper the Evening bulletin of New York on April 17, 1923 published the enthusiastic article "Moscow has the only 'Toy Museum' in the world" (*Archive of the Art and Pedagogical Museum of a Toy (APMT)*, ed.khr.10, l.12).

N. D. Bartram's report 'Activity of the Toy Museum' was heard on the meeting on March 3, 1924, after which the council for art education of Glavsotsvos (the head administration of social upbringing and polytechnic education) decided: "To expanse the Toy Museum in a view of its extremely important pedagogical value" (*State Archive of the Russian Federation*, f.2307, ed.khr.226, l.5). As a result of this decision, the placement on Kropotkin St. was given to the Toy Museum. Later this placement played a fatal role in the museum's destiny (Bartram, 1973). In the house of the Toy Museums it was planned to place architectural workshops in connection with adoption of the governmental decision on construction of the Palace of Councils on a place of the Cathedral of Christ the Savior. The museum department of Glavnauka (the head administration of Science) did not begin to strive on granting the new room for the museum. Many workers of Narkompros supported the project of the organization center of the toy industry in Zagorsk led by the Museum of a toy, despite Bartram's objections. In 1931, the museum was taken out from Moscow to Zagorsk (*Archive of the Art and Pedagogical Museum of a Toy (APMT)*, op.1, ed.khr.10, l.23). The same year N. D. Bartram died and the Toy Museum ceased to exist (Rashitova, 2014).

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DEVELOPMENT OF THE ECONOMY OF CYPRUS BEFORE AND AFTER THE BANKING CRISIS

Abstract

The paper contains analysis of the Cypriot economy before and after the banking crisis in 2013. Author defines causes of the banking crisis and considers consequences, which the country's economy faced after restructuring of banks and bank deposit levy. Current situation and prospects for development of the Cypriot economy are also examined.

Keywords

Cyprus, financial crisis, offshore, the Cypriot financial crisis,
the banking crisis on Cyprus, bank deposit levy, non-performing loan

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As a start point of the European debt crisis, many economists consider the Greek government bonds crisis at the end of 2009. Further development of the crisis associated with problems in the economy of Ireland, Spain, Portugal and Italy. This crisis has threatened stability of the whole eurozone.

Cause of the European debt crisis is a set of interrelated factors. Primarily it is irrational and short-sighted economic policy of many national governments. Possibility of permanent borrowing has led to significant increase of government debts, the risk of default has been identified. Growth of public debt has led to instability of the banking system. Both of these factors are interrelated, as banks are major holders of government bonds.

Moreover, we should take into account the fact that wages in the eurozone countries had been showing significant increase in recent years before the crisis, which was less than productivity growth. Domestic demand in these countries had been increasing, causing inflation; economy had been growing through development of service sector and expanding number of government employees, while share of export in GDP was not increasing. As a result, debts of households and governments increased dramatically.

This crisis has shown fundamental problems of the eurozone as a union of countries with different economies, some countries have stable economies with growth potential, while the main source of income for other countries is tourism and financial services. Furthermore, the eurozone countries are united only by a single currency, but states can implement different fiscal policies, and only this had a negative impact on ability of the eurozone countries to jointly and promptly react on the coming crisis.

Greece had a problems because of high public debt, according to the Eurostat, in 2007 it was 107,2 of GDP and reached maximum of 170,3 % in 2011. Greece had large expenditures on pensions and salaries of government employees. It was not enough incomes and government borrowed more and more, this has led to the situation when the country was spending big portion of revenues on interest payments on bonds. Portugal had the same problems, in period from 2007 to 2012, public debt has grown almost twice and reached 123,6 % of GDP. Unlike Greece, Irish crisis was not caused by excessive government spending, real estate market instability had provoked banking crisis, which was the main reason of the following economic crisis. Spain's also had social oriented economy with dominance of low-tech industries and negative trade balance. These factors have led to record level of unemployment and mortgage crisis, which in turn has led to a banking system failure. In Italy the value of government debt to GDP ratio was one of the highest and reached 127,0 % in 2012, industrial production has fallen to its lowest level in 11 years. Cyprus faced problems because of dominance of banking sector and financial services in its economy (*Rouiga, Shreider, 2013*).

According to the IMF, 438 billion dollars were transferring from Cyprus to Russia in 2009-2011. Similarly, Cyprus was the major recipient of Russia's investments, during the same period Cyprus received more than 395 billion dollars from Russia.

Financial crisis in Cyprus was one of the most topical issues of Russian business in 2013. Cyprus faced economic problems in 2012. Firstly, economic crisis in Greece produced negative effects on the Cypriot economy, because the majority of Cypriot banks were Greek bonds holders. Under the treatment of assistance to Greece, Cypriot banks had to write-off a half of par value of Greek bonds.

In addition, Cypriot foreign debt was growing annually. According to the data of the Central Bank of Cyprus, in 2012 there was the highest annual growth of sovereign debt in percent to GDP among countries of the European Union. Country's public debt increased from 12869,3 million euro in 2011 to 15430,9 million euro in 2012, from 66 % to 79,5 % of GDP, in 2008 this indicator was 8493 million euro.

On the basis of data provided by the Central Bank of Cyprus (table 1), we can analyze development of the country's economy before the banking crisis. GDP of Cyprus, after notable growth in 2007-2008, faced not such a big decrease in 2009 as other countries during the global financial crisis, in 2009 GDP of Cyprus decreased on 1,8 %. For example, Russian GDP fell on 7,8 % in 2009. However, public debt started to rise significantly from 56,5 % of GDP in 2010 to 79,5 % of GDP in 2012. Moreover, unemployment had grown annually since 2008.

**TABLE 1. DYNAMICS OF ECONOMIC INDICATORS IN 2007 - 2014 (MILLION EURO),
BASED ON DATA OF THE CENTRAL BANK OF CYPRUS
(ECONOMIC BULLETIN DECEMBER 2014; ANNUAL ECONOMIC INDICATORS 2014)**

Year/ Indicator	2014	2013	2012	2011	2010	2009	2008	2007
Nominal GDP	17506,3	18118,9	19411,1	19486,7	19062,9	18423,1	18768,8	17327,8
Change in %	-3,4	-6,7	-0,4	2,2	3,5	-1,8	8,3	9,4
Real GDP in constant values	15007,6	15353,9	16222,9	16619,2	16575,9	16348,5	16689,4	16106,2
Change in %	-2,3	-5,4	-2,4	0,3	1,4	-2,0	3,6	4,9
Public debt	18818,6	18518,8	15430,9	12869,3	10769,7	9964,9	8493,0	9370,2
% of GDP	107,5	102,2	79,5	66,0	56,5	54,1	45,3	54,1

Negative growth rates were recording by the secondary sector of the economy (Construction, Manufacturing), as well as in the sectors of Trade, Transport and Services (Public Administration, Recreational and Cultural Activities). Growth presented by the sector of Legal & Accounting Activities.

Furthermore, increasing part of government expenditures in the structure of GDP was also a problem. Increase in government spending and growth of budget deficit had been observing since 2009 and in 2011 reached 6 %.

The banking crisis on March 2013 should be considered as a consequence of instability and economic problems mentioned above. To receive financial support from the Eurogroup, the European Commission (EC), the European Central Bank (ECB) and the International Monetary Fund (IMF), Cyprus had to reorganize two recessionary banks. This implied liquidation of the “Cyprus Popular Bank” (Laiki Bank), and provision of assistance to the “Bank of Cyprus” using deposits more than 100000 euro in volume as a source.

“Cyprus Popular Bank” (Laiki Bank) has been liquidated, its guaranteed deposits, which were less than 100000 euro, have been transferred to the “Bank of Cyprus”. Non-guaranteed deposits, which were more than 100000 euro, have been converted into reorganized bank shares, money from the deposits has been used for recapitalization of the “Bank of Cyprus”. This increased bank capitalization, but reduced shareholders proportions, among these shareholders were many Russian investors.

**TABLE 2. DYNAMICS OF ECONOMIC INDICATORS IN 2007 - 2014 (MILLION EURO),
BASED ON DATA OF THE CENTRAL BANK OF CYPRUS
(ECONOMIC BULLETIN DECEMBER 2014; ANNUAL ECONOMIC INDICATORS 2014)**

Year/ Indicator	2014	2013	2012	2011	2010	2009	2008	2007
Budget surplus	-1045,3	-327,3	-563,3	-691,9	-516,8	-578,6	656,6	1050,3
Unemployment rate	11,1	11,0	8,5	6,7	5,5	4,3	2,9	3,0
Inflation rate	-1,4	-0,40	2,40	3,30	2,40	0,30	4,70	2,37

Consequences of these measures were essential for the Cypriot economy. Firstly, a decline in the banking sector caused decrease of GDP on 6,7 % in 2013. Rate of unemployment increased and reached 11,0 % in the end of 2013. Public debt also increased significantly by 20 % from 15430,9 million euro in 2012 to 18518,8 million euro in 2013 (table 1, table 2).

More importantly, Cyprus has lost its position of one of the best offshore jurisdictions for business activities. Russian investors, who often used Cyprus as a place to keep money, were the most affected by the restrictions on movement of capital. By implementation of the anti-crisis plan, Cyprus has shown its dependence from the EU. So companies and

investors no longer consider Cyprus as a reliable jurisdiction for keeping financial resources.

Some experts and researches were expecting changes in the Cypriot offshore economic model and considering resource-based economy as new model for the Cypriot economy. Earlier, offshore sector covered almost 60 % of GDP, officials argued that developing of energy industry may be perspective, the Ministry of Trade of Cyprus was estimating gas and other hydrocarbon compounds reserves in the shelf area on 300,5 trillion euro.

Despite the all positive predictions, in 2014 GDP of Cyprus in the current values reached 17506,3 million euro, by comparison, in 2013 it was 18118,9 million euro - 3,4 % decline in 2014. In 2012 GDP was 19411,1 million euro. Unemployment increased from 8,5 % in 2012 to 11,1% in 2014. Public debt increased from 79,5 % of GDP in 2012 to 102,2 % in 2013 and 107,5 % in 2014 (table 1, table 2).

Cyprus became the first and so far the only country in the eurozone, which imposed capital control when its banking system faced challenges in 2013 and depositors began to rapidly withdraw money. Cyprus had to write-off up to 80 % of funds on accounts of the major depositors of Cypriot banks to get 10 billion euro financial support from the European Union.

Restrictions on the movement of capital had imposed within the country, which have been removed in May 2014. At the same time, mandatory approval from the Ministry of Finance of Cyprus on large money transfers abroad by commercial organizations, as well as private individuals, if the transfer amount exceeds 10000 dollars, has been canceled.

According to the Central Bank of Cyprus, at the end of March 2015, 46,8 billion euro were on deposits in Cypriot banks. However, before the crisis, in December 2012, this amount was 70,2 billion euro (table 3).

Cancellation of restrictions on the movement of capital quickly caused change in the volume of funds placed on deposits in Cypriot banks. Many investors decided to withdraw money from their deposits as soon as it became possible, as Cyprus has lost credibility after adoption of the bank deposit levy.

**TABLE 3. TOTAL DEPOSITS AND LOANS GIVEN BY CYPRIOT BANKS IN 2007-2015
(BILLION EURO) (MONETARY AND FINANCIAL STATISTICS APRIL 2015)**

Date/ Indicator	Mar. 2015	Dec. 2014	Dec. 2013	Dec. 2012	Dec. 2011	Dec. 2010	Dec. 2009	Dec. 2008	Dec. 2007
Deposits	46,8	46,1	47,0	70,2	69,3	70,0	58,2	56,0	52,5
Change in %	+1,5	-1,9	-33,0	+1,3	-1,0	+20,3	+3,9	+6,7	+7,1
Loans	64,2	61,6	63,6	72,5	68,5	61,5	57,9	54,4	41,0
Change in %	+4,2	-3,1	-12,3	+5,8	+11,4	+6,2	+6,4	+32,7	+15,5

In addition, Cypriot banks have to restructure non-performing loans and it may require considerable time. This follows from the actual data of the Central Bank of Cyprus, prepared in accordance with the new methodology, this data shows that in two years since the start of the crisis banks have been able to restructure less than a quarter of problem and uncollectible debts.

Lowering non-performing loans will allow new credit to be extended to support economic growth. Recently adopted legislation on foreclosures will provide creditors with a credible threat against strategic defaulters - borrowers, who can pay, but decide not to - and will help restore a solid payment culture in the country. The foreclosure law needs to be complemented by a reform of the personal and corporate insolvency framework, allowing debtors to either restructure their loans or, for those who truly cannot pay, to write it off. The combination of the two sets of measures will encourage banks and

borrowers to move towards speedier solutions, which, in turn, will free up capital for new lending and support growth (Guzzo, 2014).

In March 2015 volume of given loans was 64,2 billion euro. Before the crisis, in 2007, volume of loans had been growing rapidly each year and in 2012 reached its maximum 72,5 billion euro.

According to the Central Bank of Cyprus, proportion of non-performing loans in total loan portfolio reached 47,8 % at the end of 2014, or 29,5 from 61,6 billion euro. And only 22,48 % from 29,5 billion euro has already restructured by banks. Level of restructuring loans for individual customers was 22,82 % from total amount of non-performing loans.

Loans for corporate customers are also troubled. By the end of 2014, banks have accumulated loans on 23,6 billion euro, more than half of them (58 %, or 13,7 billion euro) recognized as troubled. Level of restructuring reached only 28,6 %, but amount of write-downs exceeded 31 % of the amount of problem debts of corporate customers, that in absolute terms means a loss of 4,28 billion euro.

We can evaluate the scale of a problem with application of industry analysis. For example, loans given to construction companies reached 6,6 billion euro, 78 % of them (5,1 billion euro) are non-performing. However, banks already have wrote-off only 1,5 billion euro, so the rest of the problem debts requires restructuring or in the worst case should be assigned to losses in the current year.

Thus, the total amount of loans to be written-off as uncollectible debts at the end of 2014 was 9 billion euro, or 32,9 % of the total amount of given loans. According to the opinion of the IMF, in order to achieve recovery of banking system and average European level of write-downs, Cypriot banks will have to write-off of up to 50 % of the outstanding amount. That is to accept losses in amount of 4,5 billion euro. The best way is to try to restructure more non-performing loans.

To conclude, our analysis defined causes of the Cypriot banking crisis, which primarily caused by significant amounts of problem loans and losses on Greek bonds. To settle the banking system and to obtain financial assistance from the IMF and the EU, Cyprus had to restructure its two largest banks, and also convert non-guaranteed deposits in these banks into the shares of a new bank. These actions led to stabilization of the banking system of Cyprus, however, also to losses of depositors funds. Cyprus definitely lost investors' confidence after implementation of these measures. In addition, number of clients and value of deposits declined, GDP shrank, unemployment rose. However, non-performing loans remained and banks will have to write-off these debts if they will be not restructured. Therefore, it is early to expect full recovery and normalization of the economy of Cyprus.

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INDUSTRIAL POLICY AS THE MOST IMPORTANT FACTOR OF SUSTAINABLE DEVELOPMENT OF RUSSIA

Abstract

In modern conditions, the sphere of economic interaction of regions and improvement of their industrial policy (without which normal functioning it is impossible to speak about formation of uniform market and industrial space in the country) is insufficiently investigated. There is a need to study new approaches to interregional and integrational economic relations, which would allow to bring regional industrial policy to the new level in compliance with high scientific-technical, personnel and production potential. All these will allow to meet sanctions facing Russia nowadays.

Keywords

industrial policy, regional development, economic sanctions,
anti-crisis measures, modernization

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The base of sustained economic growth is macroeconomic stability of economy. Economic growth depends on many factors, among which the leading place belongs to industrial policy both at the level of the Russian Federation, and at the level of its subjects.

Formation of economic relations and regional markets in many respects depends on placement of productive forces and features of development of regional systems of various level, economical-geographical position. Russia represents the largest territory with a contrast environment and resource opportunities with deep distinctions in economic development and, respectively, with unevenness of industrial and agricultural production placement. All this leads to specialization of regional systems and strengthening of their dependence on interregional communications and integration processes.

Among variety of factors of reproduction process, we should note the ones that define territorial distinctions in formation and functioning of regional economic systems. Thus, extent of regional factors influence differs on types of concrete economic systems that causes dispersion in territorial differentiation of conditions of market relations formation and functioning in various regions of the Russian Federation.

The state needs to operate economic development in the new social and economic environment, purposefully and effectively influencing development parameters on the basis of the law power strengthening, carrying out the competent and thought-over personnel policy, creation of motivation conditions to increase educational level of the population. As new industrial countries experience shows, a little significant economic growth is impossible without it during globalization.

Structural factor, which defines mainly high-quality shifts in formation and functioning of regional economic systems, plays an important role in the industrial relations development. The regional structural policy is connected with target orientation of economic development of the territory. Transition to market relations formation predetermines the need of strengthening of the consumer market role. It means that capital investments have to be aimed at the development of consumer goods production and respectively at development of production of production means for needs of light and food industry branches.

Changes in economic structure of the region significantly change the market of production means. The material structure of import and export of production means changes. The market of production means is urged to provide uninterrupted, rhythmical process of expanded reproduction. As a rule, objects of the labor are consumed for one cycle of reproduction. Labor means repeatedly, usually for a number of years, gradually transfer the cost to again created product. Special nature of participation of labor subjects and means in the course of production define their specifics in regional reproduction process. At the same time, nature of reproduction influences on the principles of formation of the production means market.

In our opinion, the industrial policy of modern Russia has to represent system of measures for selective support of strategically important sectors of economy. These sectors are urged to become main 'engines' of economic growth and structural transformations.

For identification of priorities of the state industrial policy, the following criteria are offered:

1. Favorable combination of production factors and, especially, existence of modern 'know-how', rich scientific-technical potential capable to provide technological breakthrough, resources of qualified personnel, possibility to connect information networks, etc.
2. Existence of steady export 'niches' in the world market at the structure of internal production and demand, facilitating a turn of industrial sector to orientation to foreign markets of sale.
3. Possibility of inflow of foreign and internal investments for production restructuring.
4. The existence of the competitive adjacent and cooperated productions making possible to exchange qualified personnel and technologies between the sectors.
5. The stability of reproduction communications depending on import replacement potential in great extent.

Thus for financing of industrial policy programs can be the main source of the income from traditional raw export means. Respectively, achievement of strategic objectives of restructuring demands, first, prevention of leakage of the income from raw export and, secondly, creation of effective mechanisms of their 'modulation' in production investments.

Capitalization of the income from traditional raw export is, in our opinion, one of the most fundamental problems of industrial policy. Creation of specialized financial institutions with participation of the private national and foreign capital as corporations of development in the new industrial countries, which would assume functions of redistribution and investment of the export income, is essential.

At the same time, support of competitive sectors of economy has to be carried out along with a package of anti-recessionary measures. It is caused by the following circumstances:

1. The Russian high technologies, unclaimed in the world market (besides, not adapted for the international standards of economic efficiency) quickly become outdated and lose competitive advantages.

2. Continuous recession in production of energy carriers sharply reduces time allowed for structural maneuver by resources; if soon the export 'bases' realizing the Russian competitive technologies would not be created; the program of restructuring will easily 'choke' because of financial resources shortage.

The purpose of industrial policy is formation of conditions for expansion of production scales and realization of qualitative and competitive production, creation new import-substituting and export-and ecology-oriented knowledge-intensive and hi-tech production, and employment of the population and increase in receipts in the budget on the basis of restructuring of research and production potential, address measures of support and protection of the Moscow producers.

On our belief, the new breakthrough decisions capable sharply to increase rates of industrial production are necessary. New industrialization, comparable on scales and social-economic consequences with industrialization in our country in the 30-es, is necessary. Only methods and means of new industrialization have to be essentially new ones.

Creation of industrial zones of new type has to become a key link of new industrial policy, in our opinion. Having analyzed the experience of the leading regions of Russia on implementation of the enterprises transfer programs, we concluded that essentially new concept of industrial shape of the countries and its certain regions is necessary. The need to develop such concept is dictated by both social-economic, and political factors. The first factors are that the industry of certain regions was created chaotically, irregularly. Plants were under construction without development of this region. Fixed assets considerably became outdated, wear of the equipment exceeded by 60%. Production of the knowledge-intensive production, modern cars and the equipment, quality of products is not always high. Upon transition to the market relations, there was a problem of the maintenance of huge production territories. The transfer of the enterprises from the central regions of the large economic centers, the cities of regions is practically not carried out. The similar situation is in many regions of Russia.

The need of radical modernization of Russian industry is caused by the political factor, which is formed under the influence of sanctions.

In particular, construction of 'turnkey' modular plants with communications, transport, small enterprises on production of the completing spare parts, equipment, etc. can become one of directions for creation of new type industrial zones. In this scheme, it is easy to optimize management processes, technology, financial streams, freight traffics, marketing, advertising, etc. Following economic logic, transferring the enterprises from downtown to the new zones can minimize expenses. The logic prompts that the most optimum is creation of territorial and branch clusters (light and textile, food industry, industry of construction materials, etc.). Such approach allows not only to construct industrial facilities, but also to unite round them small business on the terms of subcontracting, profile scientific research institutes and constructor offices. Similar conglomerates will be able to enter the foreign market much more quickly and effectively.

Creation of new type industrial zones has to become not only a priority for the regional authorities, but also have to have the federal status. Revival of the industry based on the latest technologies, latest equipment and management will give a serious impulse for the fastest development of all Russian regions, especially in the conditions of the economic sanctions inflicted on our country.

Implementation of all these offers demands serious study at the level of the Russian government and the regional authorities, conclusion of the relevant intergovernmental agreements. In particular, the right of equipment of this or that enterprise by the equipment of the production under subsidies of own government can be granted to firms. Other mutually advantageous schemes, such as leasing, concessions, etc. can be realized.

The project has both economic and social value. Development of new type industrial zones will allow to create the new workplaces with the latest equipment. Management of an industrial zone will require competent managers and management companies. They should carry out broad functions: receive the land, create industrial production and operate it, to be able to render to the enterprises placed on a platform all complex of services -uniform accounts department, legal services, product sales, marketing, etc.

In our opinion, for creation of industrial conglomerates it is necessary to solve one more problem - to reorient a construction complex of the city from excess construction of housing to industrial construction. It can be reached under a condition when cost of construction and equipment of square meter of an industrial facility is higher, than construction of square meter of housing.

Creating the new workplaces equipped with the latest machines, equipment and computers, technologies we will be able to attract youth in real sector of economy.

To number the major tools of industrial policy, in our opinion, it is also possible to carry following measures:

1. Implementation of the tax reform aimed at replenishment of the budgetary income, first, due to expansion of base of the taxation and transfer of emphasis on development of large-scale projects in the sphere of real economy and the industry and small business, project management by various sectors of economy.

2. Stage-by-stage elimination of preferential crediting practice, the qualitative decision in technology of conducting of the credits interfering their transfer in speculative operations, and reduction of structure of soft loans distribution in compliance with priorities of industrial policy.

3. Expansion of opportunities of stock market, development of budgetary mechanisms in trade relations with regions and the partner states.

4. Differentiation of obligatory bank reserves norm depending on structure of bank assets: establishment of the raised rates on the short-term credits under financing of intermediary operations and their quantitative decrease for the long-term investment credits.

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GLOBALIZATION OF ECONOMY AND ITS INFLUENCE ON CYCLES OF DEVELOPMENT OF CORPORATE FORMATIONS IN MODERN CONDITIONS

Abstract

Features of corporate formations development in the sphere of constantly amplifying influence of globalization of world economy and features of its cyclic development gained the high importance nowadays. The theory of business cycles significantly dominates in studying of developmental processes, which cornerstone is the fundamental law of the investment cycles theory: laws of investment define phases of industrial cycle. According to the authors, the topical issue is studying corporate formations development in conditions of cyclically active environment, within coordination of forward economic development of corporate formations with cycles of global economy development by means of formation of corporate policy of cyclic fluctuations smoothing.

Keywords

business cycle, corporate formation, crisis, investments, public administration

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In recent years, the special attention is paid to features of corporate formations development in the sphere of constantly amplifying influence of processes of world economy globalization and features of its cyclic development. The theory of business cycles significantly dominates in studying of developmental processes. M. I. Tugan-Baranovsky's works are the cornerstone of the theory: he was the first, who formulated the fundamental law of the investment theory of cycles: laws of investment define phases of an industrial cycle. The violation of economic activity rhythm provoke the crisis phenomena in economic systems, which in turn arise because of violation, and often, because of absence of the parallelism principle of in the markets of different spheres during intensive positive development of economy. The violation of economic activity rhythm is caused by disproportions between the savings and investments caused by violations of proportionality of the prices movement on capital benefits and consumer goods.

Within this direction, in the first half of the 20th century, the Russian economist N. D. Kondratyev proved that in the long term (about 50 years) there is quite steady cyclic regularity. He added M. I. Tugan-Baranovsky's postulates and defined that in an upward phase of a business cycle rather prompt warming up of economy surely leads society to inevitable changes, which opportunities often seriously lag behind requirements of economic system of the specified society. As a result, development of economic system passes into a bearish phase. The bearish phase of a business cycle is that crisis catalyst, which stimulates reorganization of the economic relations helping the economy to take an upward phase.

If to speak about effective use of that theoretical and practical baggage, which is acquired by a number of researchers (Tougan-Baranovsky, Viksell, Spiethoff, Fischer, Schumpeter, Mises, Kondratyev) of business cycles for creation an effective control system of cyclic development, it is possible to allocate 2 global directions:

1) adequate and system planning of development of state regulation of economy, amplitudes of cyclic fluctuations promoting smoothing, i.e. during recession the state pursues policy of activation of all economic processes, and in the period of the economy overheating seek to constrain business activity.

2) adaptive management of corporate formation development taking into account amplitude of cyclic fluctuations of economic system.

The most topical issue for us is studying of corporate formations development in conditions of cyclically active environment. To be more exact, it is coordination of forward economic development of corporate formations with cycles of global economy development by means of formation of corporate policy of cyclic fluctuations smoothing.

Within the considered direction, the extremely interesting feature of the Tougan-Baranovsky's theory is that the general reduction of new enterprises number inevitably causes violation of proportionality in the sphere of productive forces distribution. The balance between cumulative demand and cumulative offer is broken for the reason that new enterprises create expanded demand for both goods of production appointment and consumer goods (the phenomenon connected with the animator's action). From this follows that of new enterprises number in delivering consumer goods industry also have reduction in demand as the branches delivering means of production. It should be noted that M. I. Tugan-Baranovsky assigned a special role to loan capital in the course of cyclic fluctuations of economy. He noted that increase of loan percent is a sure sign of lack spare loan capital in the country for needs of the industry. The conclusion from it is that the immediate cause of crisis is not surplus of loan capital (which is don't have application), but in its shortcoming.

Thus, based on the aforesaid, it is possible to carry out direct dependences between the number of really functioning enterprises / corporate formations in separately taken economic system both on regional/state, and world levels, and cycles of development. It is possible to allocate the following factors having the defining impact on recurrence of development:

- globalization of economy, and, as a result, trance nationalization of business cycles;
- formation of 'leaders' and 'the conducted' economic systems within business cycles;
- non-uniformed structure of causes and consequences of business cycle for its participants;
- need in creation the vertically integrated global control system of business cycles.

Certainly, the most important problem of effective system of public and municipal administration is formation of the global vertically integrated control system of business cycles, which would cover all levels of state and municipal management and consider the condition of business environment. If to speak about the vertically integrated control system of business cycles, it is based on two key 'pillars':

1) the vertical hierarchy, which is based on system of public administration and includes necessary interactions between all levels of the power within effective economic cycles management;

2) the integrated component, which assumes complex interaction with the key organizations, communities or participants of the corporate (business) environment within formation of the practical mechanism of business cycles management.

Special attention should be paid to complex interaction with key market players within the work. That key participants of the market relations in many respects determine amplitudes of cyclic fluctuations of economic system on the branch and regional levels

and, as a result, their activity is the defining activity in the course of business cycles formation.

We see the process of creation of the integrated component of economic cycles control system in development and creation of the unified analytical models of organizational-economic processes management in the company on the centers and points of responsibility (controlling points) with concentration at the top step of an analytical ladder (pyramid). The predominating representative of its pyramid should be a member of advisory council of branch, which head, in turn, would represent a position of branch in advisory council of the region. As a result, the head of advisory council of the region would represent its interests at the national level.

Thus, this structure ideally suits for the large participants of market/branch defining its rules. The structure has the analytical divisions specializing on their productive-economic cycle and both preparing operational analytical information for heads of divisions, and having opportunity to create information for advisory council of the region branch.

Basis of the organization of these analytical processes in the key companies of branch the is the use of multicomponent models, which are organic continuation of one-component models (they include one level of analytical responsibility assuming the analysis of macro-indicators of company's activity). The models bring analytical processes to qualitatively new level both on analysis depth, and on management susceptibility degree to the received results.

Multicomponent models of the organization of analytical processes in the company are based on an assessment of all range of analytical indicators with carrying out the deep factorial analysis. This model allows to analytically investigating all components of internal and external environment on both micro-external and macro-external levels. The definitions micro-external and macro-external environment of the market key participant are not used incidentally. This model of analytical processes organization has to take into account both the research of macroeconomic parameters of economic, political, natural, legal, etc. environment surrounding the company and the study of nearest environment of direct (local) business environment of market participant. The key elements of analytical model are the adaptively developed analytical tools; clear understanding of the carried-out analytical work for economic efficiency of company functioning at this stage of its development; interaction with branch partners for the purpose of formation the overall picture of economic processes at the current stage of economy development.

Thus, it is possible to note that formation of an analytical control system of forecasting and business cycles management demands rather laborious and system work with all key market players, which economic development has the defining character for branches of their functioning.

As a result, the state represented by the profile ministries and departments has to initiate the process of formation of the described analytical structure, which will assume the above functions. Perhaps, this process can take place under the auspices of the Russian Union of Industrialists and Entrepreneurs, which being the all-Russian organization represents interests of business community at both Russian and international levels; includes more than hundred branch and regional associations of key economic sectors (energy industry, mechanical engineering, investment-bank sphere, defense industry complex, construction, chemical production, light and food industry, services sector).

Respectively the huge resource of the Russian Union of Industrialists and Entrepreneurs within the studied question consists in possibility of implementation of the project on thousands of the largest Russian companies - representatives of the industrial, scientific, financial and commercial organizations in all Russian regions. The main objective of the Russian Union of Industrialists and Entrepreneurs consists in consolidation of efforts of the Russian industrialists and businessmen directed on improvement of the

business environment, increase of the status of the Russian business in the country and in the world, maintenance of balance of society interests, power and business. Forming tools of management of economy development cycles, we actually achieve the stated purposes of the businessmen union.

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PROBLEMS OF LEGAL REGULATION OF PUBLIC SERVICE IN HIGHER EDUCATION, AND CONFLICT OF INTEREST IN THE PUBLIC SERVICE OF THE RUSSIAN FEDERATION

Abstract

The paper is devoted to the analysis of problems of legal regulation of public service in education, and also to problems of legal regulation and types of the conflict of interests in public service of the Russian Federation.

Keywords

public service, higher education, conflict of interests, responsibility of public servants

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Education as service function of the modern State. Today in the scientific literature increasingly talk about service functions of a modern State, an example of which is the concept of «public services». These kinds of services, like social security, health care, and education are some of the main functions of a modern State, who proclaimed himself a social (art. 7 of the Constitution of the Russian Federation) and reflect the public in advance.

Educational function among other social functions is one of the dominant and particular interest in its effective implementation has both State and society. The latter is extremely interested in the presence of a high level of educational services, particularly in the field of higher education, that at this stage of development can only be achieved through a system of institutions that are created and managed at the State level.

As is known, the process of governance at various levels is associated with a redistribution of public functions and the subject of their performance are not only public authorities but also institutions. Regulation of higher education as a special phenomenon and the Institute of education, however, presents some difficulties, defined area, which adjoins educational organization in everyday activities. University as a system defined relationships, describes their «outer» and «inner» side. In the first case is the relationship of power and subordination, generated through the discharge of educational organization of public functions, and the second is the scope of the implementation of the autonomy of the private entity, where educational organization acts as an equal partner.

Moreover, this distinction has a very thin line, as public and private interests in education are often intertwined. However, the nature and form of some relations educational organization may be different, defined, first of all, the status of the owner-founder.

Subject category-public law in education. The solution to the problem of the nature of relationships within the University is not only theoretical, but also applied to determine the scope of applicable methods for regulation and development prospects of educational legislation. At the same time, being the subject of management, the institution has the right to determine valid methods to achieve the tasks entrusted to it, the most effective, in terms of economic, cultural and territorial characteristics, conditions of their activity. It seems necessary to consider the category of the subject of administrative law in relation to education, subject to the local level of educational organization.

D.n. believes Bachrach «subjects of administrative law should recognize the participants of social relations, where administrative law have provided for rights and responsibilities, ability to administrative-legal relations» (*Bachrach, 1994*).

Despite the priority public interest, is not denied the presence in the activities of the bodies and institutions and some private, which, while not changing public qualities of such entities (for example, in the provision of public services) (*Tikhomirov, 2005*).

It is no coincidence that foreign scholars recognize the possible effectiveness of decentralization of public administration in those areas and issues where the State does not require a uniform State policy (*Brèban, 1988*).

If the subject public administration operates in the Department form for immediate implementation of public tasks, according to several authors, in this case, the Administration should apply private law (*Verwaltungsprivatrecht*) (*Maurer, 1997*).

Characteristic of the administration of private law is the discrepancy form of activity of the subject public administration (částonpravová) with the aim of its activities (public law), resulting, according to A.f. Vasilyeva, the «coexistence» of private and public law» (*Vasiliev, 2007*).

In this regard, the French public doctrine of law recognizes the possibility of public relations with the subject private administrative law. It is no coincidence that, while in France the implementation of public functions in management can participate for a fee to private organizations to provide public and private administrative-legal activities (*Wedel, 1973*).

It is noteworthy that the French experience is associated with a high degree of centralization of higher education, which often leads to the identification of educational institutions with the authority of the public service, and individual studies is invited to even give the teacher a civil servant status, performing on behalf of the State authoritatively-administrative and supervisory functions in respect of students (*Kaplûk, 2007*).

Should, we believe, very careful about the mainstreaming of such practices on Russian soil. Fundamental principles of traditional historical organization universities define significant influence of the University on the development of society and the State. At the same time, public interest in education cannot be provided in the near future

without a public element in the activities of higher education institutions. With that said, believe possible, considering Institute of public services and in relation to education.

In a marked manner, should, in our opinion, based on the objectives of establishing educational organization that form the objectives of its activity. Tasks implemented by educational organizations in the immediate area of their activities are public, and can be defined as socially significant issues, the solution of which is the responsibility of the Organization to achieve the objectives of its functioning. Therefore, the basic nature of relationships within the educational institution is public, and is decisive for the whole "palette" linkages within the local organization of the legal person.

At the same time, if the concept of education in the Russian legal attempts to examine its future through harmonizing public and private interests, the French educational model is based on the general interest category. These concepts reflect different visions: liberal democracy is based on individual freedom and social-which is based on universal public interest.

Purely liberal or social approach cannot reflect the directions of the further development of democracy in the Graduate School of management. Principles of State policy expressed in the educational legislation define education as one of the most important functions of the State, shows the priorities of development of the Russian Federation. Finding a reasonable balance between autonomy and democracy is the main, if not the major challenge to be addressed in modern conditions of development of higher education.

Given the public profile of the graduate school, separate categories may have a staff public rights (powers) and responsibilities. First of all, this can be attributed to the Faculty (PPP) and Administration (Rector, Vice-Rector), which interact within the Organization and maintenance of educational process increasingly reflect a public entity University relations.

The conflict of interests in public service. Realization of procedure of the conflict of interests in public service of the Russian Federation revealed a number of the problems connected as with actually legal regulation, and right application of the specified institute. So, we will dwell upon some problems.

First, procedure of the conflict of interests mostly was copied from the foreign office legislation, and with rather weak adaptation for realities of public service of the Russian Federation, respectively, already initially in full degree the specified institute was disabled.

Second, the Federal Law of December 25, 2008 № 273 «On Combating Corruption» in Art. 10 defining the term «conflict of interest» (*Russian Federation Code, 2008*), in particular, uses the phrase «affect». And this is just lies significant error of the legislator, as conflict of interests - a situation that has not yet occurred, but can also occur on which the employee is obliged to inform the representative of the employer and, therefore, prevent it and to prevent. However, if such a situation has arisen, and there is, then it is not a conflict of interest, as a disciplinary offense or the offense, including corruption, followed by, in case of detection and punishment will follow a completely different measures of legal liability in respect of employee.

Thirdly, conflict of interest, in most cases the sanctions allowed a negative way, and certainly not in favor of the employee, even though, in fact, such a settlement should be to the mutual benefit of the parties, representative of the employer and employee. It seems that the regulation of conflicts of interest must be built from the use of softer measures to more stringent (depending on the availability of relapse in the actions of the employee, or other circumstances).

Fourthly, there is actually a mixture of legislative conflict of interest and misconduct. Conflict of interest is always related to yield potential of the material and financial benefits and potential material enrichment employee. At the same time, quite

a large number of situations in the state and municipal service, which bind to the conflict of interest - it is, in particular, errors or omissions in the information supply officials on the income, assets and liabilities of a material nature. Violations in filling these accounting documents (errors, inaccuracies, false information, etc.) - are disciplinary offenses, but not a conflict of interest. Once again I must reiterate that the basis for conflict of interest is material financial interest of employees who may be just, but does not have arisen, and in no way a disciplinary offense, continuing or completed.

Fifth, still remains a problem severity of the disciplinary penalties against an employee does not take measures to prevent and (or) the settlement of a conflict of interest, in particular, is it always in relation to the said employee should apply disciplinary action such as dismissal of art. 59.2 of the Federal Law of July 27, 2004 № 79 «On State Civil Service of the Russian Federation» (*Russian Federation Code, 2008*)? The law uses the phrase «subject to dismissal», but the final decision to dismiss an employee representative is accepted, an employer who can not apply such harsh disciplinary measure.

Next we look at some of the most typical (common) situations of conflict of interest in public service. Thus, in such a situation can be attributed.

1. Acquisition and possession of a civil servant, his wife (husband), relatives or close persons Securities organization (s) in respect of which (whom) a public servant carries out some functions of government.

2. Preparation of a civil servant, his wife (husband), relatives or close persons remuneration (including gifts, entertainment and holiday pay, payment of transportation costs, loans, services, etc.) from the persons or entities, or for exercising civil servants their official duties, or in cases where persons in respect of such public servant carries out (or carried), the functions of government.

3. Implementation of the civil servants of government functions in respect of those persons who before the civil servant, his wife (husband), relatives or close persons are property obligations, or, on the contrary, at the very civil servant, his wife (husband), relatives or close persons are property obligations to these persons.

4. Implementation of the civil servants of government functions in respect of those legal entities in which he has previously engaged in labor activity (as in management and in other positions), or the owner or holder of shares or other securities of which he is.

5. Receipt of the former public servant to work in those organizations for which he states in the public service, to carry out the functions of government (without authorization of the commission to resolve the conflict of interests of public authority).

6. Use of public servants proprietary information to benefit or advantage in the commission of the relevant financial transactions, or the transfer of this information to obtain benefits to third parties.

7. Preparation of public officials working in post, «the head» of gifts from subordinates, or, conversely, subordinates giving gifts to his superior officers.

8. Transfer of public servants of their business assets he owned up to enter the civil service, their relatives, friends, or others (in fact, in this case, it is not only a conflict of interest, but also the illicit enrichment, which the current legislation is not suppressed).

9. The situation where a public servant when certain irregularities in the conduct of supervisory activities recommended for their «guaranteed» to eliminate (and, consequently, to eliminate the violations associated with these problems) refer to those organizations, the founders or members of which are his relatives close and other related person.

10. Perform any other paid public servants working in the organizations financed from foreign countries or international organizations or with the participation of these entities.

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ROLE-PLAYING GAMES USAGE IN THE COURSE OF "BUSINESS ENGLISH" FOR STUDENTS OF NON-LINGUISTIC HIGHER EDUCATIONAL ESTABLISHMENTS

Abstract

The paper deals with the relevance of application of new methods of training, the most important of which is competence-based approach to education in non-linguistic higher educational establishments. The purpose of the paper is to revive the main signs of modern language formation which covers a large number of people studying foreign languages at the most various levels. The paper offers quite a wide range of methods and technologies which can be used for foreign language training through the role-playing usage and it also describes educational process basing on competence approach to education. The presented material will be useful for lecturers of higher educational establishments.

Keywords

education, cross-cultural communication, training and methodical complex (TMC),
role-playing games, traditional and communicative methods of teaching,
communicative competence, survival level, threshold level, socialization

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By the beginning of the XXI century the social and cultural context of learning of foreign languages had changed fundamentally in Russia. Educational and self-educational functions of the foreign languages, their professional importance in the labor market have increased significantly. As a result, it influenced the strengthening of the motivation in language studying for international communication.

The changes which are taking place in modern society, the creation of European cultural and economic environment, Russian involvement in these changes, the emergence

of new technologies providing unlimited opportunities for information and communication, make new requirements for the preparation of students. It is seen through the formation of an educated person who knows and respects the culture of his native country, tolerant, open for dialogues between cultures; the personality ready to realize the scale of variations in the society, his role in the implementation of these changes.

Our country is becoming more and more open, entering the international community as a partner. International relationships are expanding, as well as nationalization in all life spheres of our society. Foreign language is becoming really popular in human activities. It has become a factor of social and economic, scientific and technical and progress in general culture. Of course, all these raise the status of a foreign language as an academic subject.

In the context of strengthening the communicative orientation of the educational content in Russian higher education at its present stage of historical development in the country's language training is considered to be a priority way of higher educational modernization. The purpose of foreign language teaching in non-linguistic higher educational establishments is to help students of foreign languages to reach communicative competence at the threshold level (the term of the European Council): the ability and readiness of the future real experts to carry out foreign language communication and to come to an understanding with the native speaker.

All the foreign language teaching methods are divided into traditional and communicative.

The traditional method was the most widespread the foreign language teaching before occurrence of the communicative approach. Teaching on the given procedure is carried out by means of regular work on grammar and vocabulary which consists in systematical grammar studying with simultaneous work on reading and translation skills. The traditional approach assumes reading, translation and retelling of the text, a question and answer work, performance of lexical and grammatical exercises, the statement on the certain subject matter. Traditional training is extensive, stretched in time. The given method gives a high result in grammar, vocabulary, reading and letter-writing training.

Unlike a traditional method, the objective of a communicative one is in teaching oral speech. The given method is the latest and the largest achievement of a methodical science and assumes the language training as means of dialogue during the communication. Foreign researches in the field of a communicative method began in 60th of XX century. Firstly, the starting point was that the English language started to get the status of the international language communication. The society needed new methods of teaching which could assist multicultural progress in conditions of creating a single European economic market. Secondly, it turned out that the traditional widespread methods at that time have ceased to satisfy the needs of the majority people studying English as a foreign language. Actually, the reason was not so much in the old methods; it simply had a new contingent of students, the so-called 'pragmatists' with especially functional sight at language as on the tool of the communication. The system of deep mastering of studied language on which traditional academic programs have been directed was useless and a possibility of immediate practical implementation of the knowledge was required. But it turned out that the people, who had been learning the language to communicate, could not speak using modern informal conversation (not speaking about slang). They did not have the concept about speech etiquette. In a word, they felt helpless in a situation of actual dialogue.

To solve this problem, the European Council has charged to a commission of experts to study the possibilities of creating the system of foreign languages training for adult trainees which could become a basis of language teaching in any member state of the European Council. The result of their work was the set of the researches aimed at development of the concept which could focus attention to formation and progress of

capacity to communicate a foreign language in a context of the personally focused teaching. During the research the idea of threshold levels development as specific objectives of foreign language mastering was generated. It was initially intended for adult trainees but later it has been adapted for objectives and a content of training at other educational institutions with success.

The results of these studies were summarized and analyzed in the "Modern languages" document. This has extended the practical use of the developed approach on the functional and semantic basis and implementation of the basic principles in several areas: in the development of new methods and creation of new training materials, of complex technological training systems (multi-media systems), in the evaluation of self-evaluation, self-study system development based on the individualization (learner autonomy), in making recommendations for the foreign teacher training.

At the end of the twentieth century there had been a number of research projects that had the formation of a communicative language teaching system as their goal. The important place among them was occupied by the project "Learning and teaching modern languages for communication". Special attention in an integrated communicative approach, systematized on the basis of theoretical developments and practical experience of foreign languages teaching in the UK, France, Germany, Italy, Spain and other Western European countries is given to communicative purpose of the training sessions and is used for foreign language learning as a medium of communication training materials.

Three primary (base) levels for language acquisition were identified:

1. the survival level;
2. the waystage level;
3. the threshold level.

Detailed requirements and content of these levels for a number of Western European languages have been developed. Used in training materials should have formed communicative competence. Overall implementation of the programme "Language learning for European citizenship" had to give the Europeans the opportunity of free communication, removing language barriers, achieving mutual understanding and respect. Both levels are planned in carefully developed models (for a certain period of study) for foreign language proficiency as a means of effective communication (*Livingstone, 1988*).

Thus, we can say that the main goal of this approach is not just to teach speaking any foreign language, but also to understand the speech of the interlocutor and to express his thoughts to form communicative competence, which includes linguistic, sociolinguistic, social and cultural, strategic, and discourse competence. This can be achieved by teaching people in natural conditions or by creating similar conditions using communicative methods of foreign language teaching.

As we noted above, the purpose of language teaching in general and communicative method in particular is the formation of "communicative competence". "Communicative competence" is understood as the ability of the target language to carry out speech activity in accordance with the goals, objectives, situation of communication within a particular sphere of activity. The basis of communicative competence is a set of skills that allow the communicant to participate in speech communication (in its productive and receptive forms).

K. Livingstone identifies the following components of communicative competence:

- linguistic competence, which involves the mastery of a certain phenomenal amount of knowledge and corresponding skills related to various aspects of the language: vocabulary, phonetics and grammar;
- sociolinguistic competence is the ability to implement a variety of language forms, use them to convert them in accordance with the context, that is, to adequately solve the problems of communication in each case. To learn this, it is important to know the

semantic features of words and expressions as they change depending on the nature and style of communication, what effect they can have on the interlocutor;

- socio-cultural competence involves the formation of an international-oriented personality, conscious of the interdependence and integrity of the world, the need for intercultural cooperation and the solution of global problems of mankind, and in particular knowledge of the culture of the target language, including not only art, but also the nature of thinking and mentality;

- strategic competence implies a degree of familiarity with the socio-cultural context of the language functioning;

- discourse competence includes the ability to understand and to achieve connectivity the perception and generation of separate statements in the framework of communicative and meaningful verbal formations (*Livingstone, 1988*).

The leading component in communicative competence is speech (communication) skills which are formed on the basis of language knowledge and skills of linguistic and cross-cultural knowledge.

Communicative competence includes the following essential skills:

- to read and understand simple authentic texts (with the understanding of the core content and with full understanding);

- to communicate in standard situations verbally: work-study, cultural and domestic spheres;

- to tell about yourself, the environment; to retell, to express the opinion, assessment briefly.

- the ability to write and convey basic information (a letter).

So the minimum level of communicative competence in the state educational standard of foreign languages is identified (*Isaeva, 2007*).

How does the use of communicative method form communicative competence? The communicative teaching of foreign languages is the activity, since verbal communication is done through "speech activity", which is used for solving problems of productive human activity in terms of communicating people "social interaction" (*Tadtaeva, Bigaeva, 2014*). The participants are trying to solve the real and perceived objectives of the joint activities with the help of a foreign language.

The peculiarity of activity type of training contains its intended purpose and its essence is primarily associated with a distinct form of speech activity, so we see its widespread use when talking about the teaching of reading, listening, translation, etc. And only in one of the known methods, which tries to encompass the foreign language teaching in general and specifically in the communicative method, we find the main features of the activity type of training.

According to E.I. Passov, the author of the communication method, the communication involves speech, the focus on the educational process which is (in fact, all the trends of the past and present put such a goal) the path to the practical use of the language. Practical speech orientation is not only a goal but also a means where both dialectically "interdependent".

The speech partnership depends largely on the communicative behavior of the teacher which is also included in the aspects of speech training and orientation activity due to the nature of communication. In fact, all stages of the learning material have the communication learning. But there is a number of issues that require special training. So, for the ability to communicate a special role is played: the ability to communicate, roll it and resume; ability to conduct its strategic line of communication, to implement it in the tactics of behavior contrary to the other strategies to communicate; the ability of the account every time (several new) audio partners, the changing roles of the partners, or

the turning off the communication; the ability to forecast the behavior of the speech partners, their statements, the outcomes of a given situation (*Tadtaeva, 2013*).

Modern communicative method is a harmonious combination of many methods of foreign language teaching, being probably at the top of the evolutionary pyramid of different educational methods.

At the present stage of foreign language teaching, the majority of teachers consider "communicative" as the most effective linguistic method and they criticize traditional techniques, working on the principle "from grammar to vocabulary, and then the transition to exercises for consolidation". Artificially created exercises do not form language speaker and language learners of this technique would rather say nothing than say the wrong phrase. And "communication", conversely, is designed to "unleash" the tongue.

Communicative method develops all language skills from writing and speaking to reading and listening. Grammar is mastered in the process of language communication: first, a student learns the words, expressions, language formulas and then begins to understand what they represent in the grammatical sense. The goal is to teach students to speak a foreign language is not only freely, but also correctly.

The rules, the meaning of new words are explained by the teacher with the help of the vocabulary, grammatical structures and expressions familiar to the student, with gestures and facial expressions, drawings and other visual aids. Computers with CDs, the Internet, TV programs, newspapers, magazines can also be used. Everything is done to the awakening of students' interest in history, culture and traditions of the country of the studied language.

At the lessons of a foreign language a teacher creates situations in which the students communicate in pairs with each other in groups. It makes the lesson more diverse. As a team, they show speech independence. They can help each other; successfully use the statements of the interlocutors for correction.

The teacher in the classroom assumes the functions of the communication organizer, asks questions, and pays attention to the original views of the participants, acts as an arbiter in the discussion of controversial issues.

The difference of communicativeness that is specially customize for active vocabulary and study grammar teaching texts, dialogues in it as the main technique is used to simulate real-life situations that are played in the classroom to arouse students maximum motivation for speaking. So, instead of endlessly repeating common phrases from the textbook students study the topic "Acquaintance" and begin to ask and discuss their questions.

The basic issues which students are familiar with in their native language are discussed: this enables them to focus on the development of communication skills, the ability to use the language spontaneously. They prefer the topics to be "burning" either associated or connected with the students' lives or with all aspects of modern life (ecology, politics, music, education, etc.). In Western textbooks, you can hardly find such "topics" at the Upper Intermediate level, as "Shakespeare's biography" or "The nuclear sciences". "Bookish" and "scientific" styles are used only at senior levels.

Unlike the audiolingual and other methods which are based on repetition and memorization, communicative method sets the exercise with "an open ending": the students do not know what the result of their activities in the class will be, everything will depend on reactions and responses. New situations are used daily. Thus the teacher supports the students' interest to the classes because everyone wants a meaningful way to communicate on a meaningful topic.

Most of the time in class is speaking (although reading and writing is also paid attention to). In this case, teachers talk less and listen more, only directing the activities of students. The teacher sets up the exercise and then having "warmed up" the students,

fades into the background and acts as the observer and arbiter. It is preferable to use only the target language.

The communicative method is to imitate the learning process of communication. It is based on the fact that the learning process is a model of communication but the basic parameters are adequate, similar to the real process of communication.

Everything said above about the communicative method of foreign language teaching suggests that a focus of study in this case is foreign language speech activity. There is a clear separation of the verbal skills of speaking, and suggests exercises for their consistent formation in this method. All this in turn suggests that the communicative method of teaching to speak is seen by E.I. Passov as an activity type of teaching.

The mastery of foreign language communication, even to the limited extent is a multi-layered process which has many aspects. As for the communicative competence acting as the desired learning outcome is a complex phenomenon.

The effectiveness of foreign language communication depends on the ability to take into account the cultural characteristics of the country's interlocutor, to foresee the course of conversation, to have the ability to change the tactics of communicative behavior in non-standard conditions or to change the situation of communication. In one word, the level of intercultural competence formation is the key to the problem. Learning of the foreign language communication should be aimed not only at the process itself but also at the result of the dialogue. So that to be not only competent but also productive. The skillfulness in foreign language communication should be a mandatory component of professionalism.

The expansion of international contacts have shifted the emphasis in teaching of foreign languages from learning lexical and grammatical aspects of the language to reading the special literature on training foreign language communication, as demonstrated by a number of studies of such outstanding researches as L.V. Makar and T.N. Astafurova (*Astafurova, 1997*).

The country has established the theoretical basis of communicational oriented teaching of foreign languages in the context of the cultural dialogue by V.V. Safonova, the technologies are developed and tested for the actual implementation of the communicative, social and cultural approaches in contemporary documents, subject curricula and textbooks by E.I. Passov and V.V. Safonova.

Problems of stimulation and motivation for the learning of any foreign language using entertaining materials and game methods of teaching which can be found in the scientific studies of many Russian scientists such as S.T. Zanko, E.I. Passov, P.M. Jacobson and many others. One of these methods of learning a foreign language is a playing method.

Game is an integral part of human life. Johan Haizing in his book "Homo ludens" ("A Playing Man") reflects on the play role in the life of the individual and in the life of the entire human civilization. There is a huge variety of games: athletic, smart, puzzles, computer and others (*Hutchinson, 1991*).

Role-playing games entered our life relatively recently. A role-play simulates real life, real professional activity. It allows participants to experiment the situation in the game, check the different ways of behavior and even make mistakes, which in reality cannot be afforded.

Today many teachers are looking for a variety of constructing forms for the new training sessions that differ from the standard ones. Daily a teacher faces various situations in which he cannot be just a performer but in each separate case must make his own decisions, to be the creator of the educational process. Among the various active methods which are used in educational practice, I want to highlight the role-play, as it activates students' mental activity.

Role-plays are built on the modeled life situation basis. With the help of the games the creative potential of each student is revealed. The experience of the role-plays has

shown that its process influences the exchange of ideas, information more intensively; it encourages participants to the creative process.

The usage of role-playing games is most obvious when we are talking about different aspects of communication. Role-play is a highly verbalized procedure; one of the critical remarks against it actually regarding its excessive dependence on linguistic abilities. It is ideally suited to any linguistic activity: the study of languages, literature, and social skill training. Acting out the scenes, especially the situations from everyday life in which the new vocabulary material is involved, students have the opportunity to use the language in a relaxed and entertaining manner. The development of language skills does not necessarily limit the foreign languages; using this technique can be improved and speaking.

Psychologists have proved that the game "justifies" the transition to a new language. It is interesting for the student and at the same time is a kind of work and analogue language exercises for teachers with the help of which the skills of all kinds of speech activity are developed. Recently, the aim of university education was to develop skills and abilities, and now there is a great demand for a new type of person who has five competencies: social, tolerance, communication, information and that very competence realizing the desire of people to learn all life. During the research it was found that the game has such a feature, as universality. The usage of game devices can be adapted to different goals and objectives. Game devices perform a variety of functions in the process of development of the individual student, facilitate the learning process, help to assimilate increasing of every year material, thus, developing the necessary competence unostentatiously.

The most extensive work on language occurs with high school student socialization during role-plays as it contains the relationship between people and people with a variety of organizations. Games are divided into linguistic and communicative. Sometimes it is impossible to differentiate them because in practice, the purpose of language games for students would be the implementation of communication. The game helps to train both types of oral and written speech practice. Nonverbal means of communication training belongs to the other sphere of language study such as cross-cultural communicating teaching material. Options of cross-cultural communicating games can be divided into 3 groups: games which introduce students to the cultural products; games aimed at studying the behavior of the native-speakers, their traditions; games that reveal the cultural values of different peoples.

The student learns to work independently, using different sources of information and new technologies. Thus, the elements of role-plays and communicative one facilitate the process of socialization, as games include not only competitive moments but also collaboration, partnership (social competence). The game tasks are prepared by students for oral and written communication simultaneously (communicative competence). Games help to realize the student a desire to learn more, develop the ability to solve the task independently, organize his work, to give his own assessment and self-esteem, the ability to compare, classify, select the main and filter out secondary information, to use additional material (informational competence). So it can be concluded that all five competencies of modern man can be developed with the help of games.

It is obvious that the formation of speech skills should go in conditions as close to those which may arise during the natural communication, and the learning process should be based on a system of communication problems by means of linguistic material. Means of pedagogical management of educational activities are communicative task with which the teacher invites and engages students in creative activities.

The game creates the ability to take independent decisions, evaluate your own actions, the actions of others, encourages to analyzing your knowledge. The main requirements for the game and the conditions of its implementation are:

- psychological requirements. Educational game should have relevance and have a personal meaning and significance for each of the participants. As any activity, game activity should be motivated, and students must have a need for it.

- pedagogical requirements are as follows: using the game as a form of (means methodological procedure) training, the instructor should be sure in the appropriateness of its usage. He should determine the goal of the game in accordance with the objectives of the educational process. Role playing should be a system, which implies a certain sequence and its gradual complication.

Game technology of role-play training is essential as it:

- allows you to move from the development of foreign language communication to its self-development, as the students learn to define themselves in a situation, to choose the means and methods of communication required to the language (lexical, grammatical) and legal material;

- provokes emotional response of students, forms and develops a creative, relaxed state of the individual, provides emotional recharge, creates a state of intellectual vigor.

- carries out a formal communication to the personal plan, promotes education and personal qualities of the person;

- almost immediately shows the result of learning; it forms conditions for individual creativity which are realized through the collective creativity;

- changes the role of the teacher, who out of the knowledge translator becomes a co-author in the formation of the student's personality;

- contributes the lasting, interesting important socio-cultural information, strategies, behavior and ethics of communication to the students' mastering because the nature of the game teaching method involves the process of design, modeling and discussion;

- it is the optimum system for the training and formation of speech and language skills of foreign language speech activity;

- it is ideal for checking the degree of language formation (lexical, phonetic), and language skills;

- allows students to develop thinking, not simply reproducing acquired knowledge but using them in a practice-oriented activities;

- makes the student an active participant in the learning process;

- a productive technology for the creative problem solutions having the communicative nature;

- provides psychological comfort, liberates the learner, allows him to hide behind the role-mask. It includes creative thinking, the scope of intuitive, unconscious, improvisational, and can be considered a productive communicative bridge to spontaneous unprepared speech (*Orlov, Tadtaeva, 2014*).

One of the effective ways of the communicative competence formation through enhanced educational technology is role-play allowing just to turn the process of foreign language learning into the students' future employment model.

In foreign pedagogy the term "role-play" means:

- a kind of exercises that simulate role-based communication;

- the shape of playing short scenes;

- a verbal learning task indicating mock situations to address specific learning problems;

- the acceptance of free student's improvisation within a given situation;

- a form of practical training which is a simulation of anticipation and real-life situations;

- simulation (modeling, playback), an indispensable element of which is the resolution of the problem (*Ter-Minasova, 2008*).

The analysis of Russian and foreign literature has allowed us to determine the nature of role-playing as social simulating real life. Role-playing is a simulation of employment state as well as certain aspects of life. Participants in the game do not bind the absence of real physical instruments and means of simulated operations. They are replaced with the imagination. As a result, the role play develops imagination and creativity (Alapieva, 1999).

Comparing role-plays with the traditional forms of foreign language learning, it can be concluded that the role-plays have a number of advantages:

1. A higher level of communication is achieved in the role-plays than in the traditional learning, as a role-play involves the implementation of specific activities (discussion of the project, participation in the conference, discussion with colleagues).

2. Role-play is a collective activity which implies the active participation of the entire group and each group member.

3. Fulfillment of different tasks leads to concrete results so that the trainees have a sense of satisfaction from the joint action, the desire to formulate and solve new problems.

4. Role-plays develop the skills formed to establish contact; correct perception and evaluation of the partner as a person; develop a strategy and tactics of communication selecting the most suitable shapes and means (*Tadtaeva, Zangieva, Tsirikhova, 2015*).

The improvement of the professionally-oriented students' skills is carried out through the game which is a simulation model of partners' communicative interaction. Moreover, the game is a form of imitation where the conditions simulate the atmosphere of the future professional work, thus, the players develop or improve professional skills and orientation.

During the role play an active conjunction of students' skills happen with the social and cultural reality of the target language which contributes the formation and development of durable knowledge and skills. But creative and spontaneous speech develops only in a role communication situation.

Role relationships are not interchangeable. Communicants may be carriers of the same social roles (for example, a student-a student). Then the communication is directed to the development of skills to discuss problems in the overall social context. Another aspect of the role relations is that the communicants are carriers of various social features (superior-subordinate). In this case, the verbal behavior of a partner is already built in accordance with the role of the partner and his status.

During the business course training of foreign language the role-plays can be widely used for professional practice training because they meet the task of developing professionally oriented activity or speech abilities in the course of action better. As a result it helps the person to make the decisions in different tasks.

Role play is a speech activity during where the students are invited to fulfill a role in which he will look for the possible solutions. Here the student is not free in his or her opinion or personal views on the issue he should choose and play a role.

A game method in the study of foreign languages and training opportunities has been known for a long time. If you use role-playing games you are sure to achieve the revitalization and systematization of the educational process developing creative abilities of students, their logical thinking, and the ability to work collectively. The game is based primarily on the communication of its participants, their ability to express their views and defend or change their point of views with the dialogue partner. In non-linguistic high school establishment role-play is an additional tool for the formation of future specialist, his professional and personal qualities.

By M.F. Stronin's definition, "a game is a kind of activity in terms of situations aimed at the reconstruction and assimilation of social experience which develops and improves self-management behavior" (*Stronin, 1994*).

By the nature of the pedagogical process games can be divided into educational, training, monitoring, summarizing types. If we look at the game in terms of game-play techniques, they can be classified into narrative, role, business, imitation. In our learning process we often use the role and business games. According to A.A. Verbitsky, a business game is a creative act in a form of recreation and objective social content of professional and other activities, systems modeling relationships. Personal development of the future professional specialist in the game is carried out by two types of rules of subordination: the competent substantive action and social relations in the team by achieving the didactic and educational tasks. The same thing can be said about the role-play, in the creation of which it is necessary to formulate and solve the same problem (*Verbitsky, 1991*).

We know that role-playing game technology includes several stages. They are a stage of preparation, and then the game itself and the stage of analysis and synthesis. The success of role play depends largely on the preparatory phase, so you first need to determine the subject, the purpose of the role-play and its intention to develop a detailed scenario, identify the problem, and enter the role of the participants in the game.

Talking about this problem Gillian Porter Ladousse notes that one of the most important principles of a role-playing game is the driving force which helps to deploy the game model. The solution contributes to the development of thought processes, organization of joint students' activities and communication of all its participants. Game developer should provide the system of tasks, situations, containing contradictions mutually exclusive information, the conflict should be resolved. However, the same function can perform the behavioral contradictions of the game participants in the following situations: different characters, mood, individual behavior, and others (*Gillian Porter Ladousse, 1996*).

The bank of game situations and role-playing games created at the Department of Foreign Languages in the Finance University under the Government of the Russian Federation over three years, includes role-playing games such as "An open day at the institute", "Protection of the business enterprise design", "My career", "TV program on service", "The best quick-service cafe project", "The best manager" and "The best technologist". All of these topics are closely related to the students' future profession. Despite the fact that the technique of creating a role-playing game, its planning, principles and stages are well developed, each time designing a new role-play requires a careful approach, the study of subject content, the search form of it, methodical equipment and system evaluation of each participant. In our opinion, the most difficult is staging the problem that students can decide at the particular stage on the basis of their language training and professional knowledge, and to find the optimal combination of regulations and the role of participants' spontaneous behavior.

According to this fact, the training and methodical complex are being developed, consisting of: 1) the program; 2) training and methodical manuals on cross-cultural communication "United Kingdom" in the form of multimedia presentations; 3) the textbook "Business English"; 4) workshop on business communication and training "Active Forms of Learning."

All course content is aimed at developing students' subject skills, the development of relevant professional and personal qualities. It must comply with the principles of functional and role professional activities, promote a positive attitude to the study discipline and the development of interest in the future profession. Functional and role construction of the content allows us to formulate a system of professional knowledge and ways of life subject that requires proper training and methodological support and the use of all available methods and tools for teachers including educational games, business situations, discussions and others.

The choice of topics and sequence of study we perform are based on the themes of the work program. Here is a list of topics that are used in the training and methodical complex (TMC):

I. A manual on regional geography and culture in the form of multimedia presentations: "United Kingdom"; "The Economy of England", "London and its Industry"; "Customs and traditions of the Englishmen"; "Culture and Art of the country the language is spoken"; "Education", "Holidays", "English food", "English Brands"; "The Banking System of England", "Types of English Organizations";

II. Textbook "Business English": a trip abroad; business meeting; business trip; rules in writing business and personal letters; filling of questionnaires and application forms; annotation and abstracting business records;

III. Workshop "Educational Role-Plays" contains games aimed at the development of communicational skills to communicate with foreign friends:

a) the 1st course: personal presentation; education. Institute; "Travelling around the UK and the USA", "Meeting foreign guests";

b) the 2nd course: "Political system of Great Britain and the United States", "Russia", "Visits, business meetings"; "Conference", "Teleconference"; "Auction" and a great variety of imitation and simulation games.

The overall structure of the program consists of three main elements: 1) an explanatory note (basic educational techniques, educational objectives, background science teaching positions are defined); 2) learning content (the main themes, ways for generating the special skills); 3) guidelines (assessment of knowledge and skills necessary for intercultural competence of students).

The achievement of the program goal is carried out by solving the following problems:

1) the creation of conditions for the formation of intercultural competence of students;

2) the formation of cultural concepts and readiness of the student to master the world of another culture; implement social and cultural development of students in the process of foreign language learning;

3) the formation of business communication culture bases;

4) the students' familiarizing to the cultural values of the country and the language is spoken.

The content of new quality indicator learning serves its cultural direction determined by: the importance of regional information to improve motivation and cognitive activity of students; the importance of cultural business communication; focus on students' personal development (*Lee, 1996*).

The subject method has always been the question of how to act in order to achieve certain results in the mastery of a particular activity. The basis of our methodology to be considered the development of students' intercultural competence by introducing a system of traditional teaching methods and active forms, such as gaming which may increase the effectiveness of foreign language mastering to form cultural personality rights.

This method includes:

1) the selection and ordering of methods, techniques and means of communicative development of students;

2) the definition of the forms and methods of the communicative interdisciplinary integration. Each lesson is built as communication, dialogue, as close to the natural conditions of communication as possible. For this purpose, we use the following methods of study: language and speech exercises; didactic, subject-role-playing, problem situations; widespread use of games, travel; consistent and purposeful introduction of materials leading to a culture of business communication.

From our point of view, the technology and the organization of training games must meet the following requirements:

- 1) to consider the communicative approach to the teaching process;
- 2) to organize activities to prepare teachers for the game.

Regarding the parameters of the gaming activities they should be the following according to our point of view: the didactic potential of the game; speaking skills; communicative orientation; social form, rules of conduct and didactic equipment. Didactic potential of the game is to combine communicative and cognitive aspects of learning.

Therefore, it seems appropriate to consider the game from the standpoint of criteria such as:

- a) the formation of abilities in one or another form of speech activity;
- b) the development of students' personal qualities.

A very important parameter is the social form of the game. They are: a) an individual, b) a pair; c) front, d) group form of social interaction. The stimulating nature of the game is equally inherent in all its social forms. At the same time the group-play and pair forms of social interaction are projected to create conditions for authentic communication, which is of particular interest to us. Didactic equipment game involves providing participants with the necessary means. In our teaching and methodical materials you can see a workshop containing educational games, some of which are business role-plays in the form of multimedia presentations. They are: "Auction", "Scientific conference", "Space bridge". Such games are aimed at the development and consolidation of professional skills, and in general contribute to a culture of business communication. Structurally, these games include: the availability of model-driven systems, reflecting specific social and economic environment (a firm or an enterprise can become such a model in a role play); the roles; different directional objectives of participants in the game, performing certain roles; cooperation roles; alternative solutions; the group or individual evaluation activities of the game participants.

As you can see, role-playing games is a form of training for a given scenario, which requires not only exploring the material but also the occurrence of a specified image.

In general, the technology and the communication game organization include the following stages:

- a) it describes the potential of the game in terms of the didactic and communicative appropriateness of its use during the foreign language in the classes;
- b) it differentiates the game by type of speech activity;
- c) it helps the teacher in the effective organization of the educational process.

The role-playing game "Job Interview" was developed and conducted in the course of "Business English". This theme is not accidental, since it allows you to combine and work purposefully on subthemes such as: "The Company and its structure", "Professions"; "Choosing a career", "Job hunting", "Advertising, adds for jobs", "Resumes and CVs", "Talking on the phone with the employers" and "Filling out the application form for a job". The final game compositionally has several stages. The finishing one was the creation of a recruitment situation, interviewing candidates to fill this position with the commission members.

According to the scenario, young people in search of work are sent to the "Employment Service", where they are able to obtain full information in the form of advertisements, brochures about the vacancies at the moment. The applicant receives the decision and viewed from a variety of offers to choose the necessary one. To make the chat correct at this stage in the game situation the students have to include the discussion of the problem with the consultants, with their friends, with family members.

Nowadays, it is also very important for students to have the skills for a well-written job resume. In this case, the applicants must first submit the documents filled out by all

the rules. In particular, the resume which is one of the most effective means of job search. It contains the necessary and sufficient information about the author: his personal data, education, work experience, additional information. Thus, it is the original personal card with the background information in it. While studying this topic the students' attention was drawn to the fact that the summary should be brief and clear, well-structured, designed in a business style, with an emphasis on their achievements in their working experience. Nevertheless, a good resume does not guarantee getting a job; however, it can cause a potential employer to invite you for an interview.

Interview is the main part of the role-playing game, where the major problem is the situation of having several candidates for the same position. Be aware of the information contained in the summary, members of the committee clarify some of the data, asking questions related to the future work, psychological issues, and others. Of course, in order this stage of the game could not only be held but it was also interesting, the participants should make a lot of effort in its preparation. Based on the answers, discussions of each applicant, the commission members take concerted collective decision, taking into account not only the education, work experience of the applicant but also his or her knowledge of foreign languages, computer skills, driving license.

Thus, taking part in role-playing games, the technology of which is developed by the teachers, the students gain experience in the game as the interaction and the role of verbal behavior and the ability to analyze, extend and modify the game situations. Attracting students to the preparation of methodical maintenance and development of role-playing cards allow diversifying and intensifying the vocabulary work.

Thus, the modern language formation covering huge number of people studying foreign languages at the most various levels offers quite a wide range of methods and technologies, which can be used for foreign language training.

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MEDIA SAFETY AND EDUCATION PROBLEMS

Abstract

Media education is the process of development and education of personality through and on the material of media. Media competence is the ability to use, critically evaluate and transfer media texts. Media competence includes consideration of the four leading indicators of the level of its development. To develop the ability for value-based judgment we used a modified model of the axiological analysis of a text of D. Mieth. Media education, in our understanding, is a process of development and self-development of a person critically using the materials of media.

Keywords

media education, media competence of students,
development student's evaluative, critical attitude to the media

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All discussions about media freedom need international co-operation in policy making and the inclusion of corporations and civil society along with the governments in order to keep the Internet a global open forum to exchange ideas across borders.

Another issue when it comes to safety of online media is the protection of minors. Young people today use media technology for entertainment, to learn, to buy, to communicate. Educators, government, library workers must teach young people important safety skills so that they can identify online hate in its many forms and understand the strategies used to target them. Young people should also be taught critical thinking skills and humanism core values. This is one of the aims of lifelong learning.

We would like to address three dimensions of media safety and security in online media:

1. Freedom of the media.
2. Safety of media actors.
3. Media education, protection of minors and young people.

How can the educational system prevent the threat of gradual, almost invisible, but total decrease in the level of critical assessment of the information used? Through the implementation of special educational programs you can achieve a harmonious balance between the growing technological might of the media and the collective values that determine the life activity of local cultural communities.

The idea of **media education** is now actively implemented into the educational and training process of contemporary educational institutions. According to UNESCO materials, media education is developing theoretical and practical skills for the purpose of mastering the modern means of mass communication.

Development of media and information literacy is one of the priorities of the strategic plan for UNESCO's program entitled "Information for Everybody." However, the modern concept of media education is aimed primarily at the introduction of new

technologies for obtaining information rather than at the development of critical thinking in students' and adequate psychological protection of their minds from aggressive information effects. Basic definition are:

Media education is the process of development and education of personality through and on the material of media.

The objectives of media education are:

- to develop the culture of communication, critical thinking and creative ability;
- to analyze and estimate media texts.

Alexander Fedorov is the author of the theory of media competence. He defines it in the following way: **Media competence** is the ability to use, critically evaluate and transfer media texts (Fedorov, 2015).

Media competence is understood as the ability to use media for personal purposes and without assistance, to understand and critically evaluate the content and various aspects of media, transmit, create and distribute media texts. (European Parliament Resolution of 16 December 2008 on Media Literacy in a Digital World) (European Parliament Resolution).

Fedorov's scientific school is based on the concepts of media competence as a new paradigm of education and problems of training future media teachers.

Media education is understood by A.V. Fedorov as a process for the purpose of developing the culture of communication with media, creative, communicative skills, critical thinking, skills of interpretation, analysis and evaluation of media texts, and teaching different forms of self-expression with the help of media technology.

Based on the conceptual approach of D. Baake, and the developmental model of media competence of K.P. Troymann, W. Zander, D. Meister, the concept of "*media competence*" can be described as a result of personal and subject-based acquisitions of a student in the process of formal and informal education, which characterizes the individual readiness of a person to deal with media (Treumann, Sander, Meister, 2007).

Fedorov offers the following a classification of indicators of a personality's media competence:

1. **Motivation** - motives of contact with media and media texts: genre, theme, emotional, epistemological, hedonistic, psychological, moral, intellectual, aesthetic;
2. **Contact** - frequency of communication (contact) with the media and works of media culture;
3. **Information** - knowledge of the terminology, theory and history of media culture, the process of mass communication;
4. **Perceptual** - ability to perceive media texts;
5. **Interpretation (evaluation)** - the ability to critically analyze media texts of different types and genres based on certain levels of development of media sphere and critical thinking;
6. **Motivation** - motives of contact with media and media texts: genre, theme, emotional, epistemological, hedonistic, psychological, moral, intellectual, aesthetic;
7. **Contact** - frequency of communication (contact) with the media and works of media culture;
8. **Information** - knowledge of the terminology, theory and history of media culture, the process of mass communication;
9. **Perceptual** - ability to perceive media texts;
10. **Interpretation (evaluation)** - the ability to critically analyze media texts of different types and genres based on certain levels of development of media sphere and critical thinking;
11. **Practical operational (active)** - the ability to choose certain media and media texts, to create and distribute their own media texts, skills of self-education in the media field;

12. Creative - the presence of creativity in different aspects of the activities (games, art, research) associated with the media.

When forming media competence, the priority is the development of media perception and the ability to analyze and evaluate media texts.

Media education, in our understanding, is a process of development and self-development of a person critically using the materials of media.

The study of the problems of students' media competence includes consideration of the four leading indicators of **the level of its development:**

1) media criticism as an *axiological phenomenon* focused on improvement of a person's readiness to the assessment activities at analytical, reflective, and value based (socially responsible) levels;

2) knowledge of media at informative and instrumental- technical levels;

3) media consumption with competences of perception and interactive activities;

4) media design at the innovative and creative levels.

According to the conception of media competence, students must be trained:

- Media culture as the expansion of cultural experience;
- Media criticism as the development of critical skills for analysis and evaluation of media texts;

- Media creativity as the development of creative skills and use of media for self-expression and communication.

According to a survey conducted by such experts in the field of Russian media education as E.A. Bondarenko, S.N. Penzin, it was discovered that media competence is understood as the development of students' ability to think critically. Because media today is an important factor in the process of individualization of young people, an ethical aspect of critical reflection should be given greater attention in the debates about media competence. In the process of developing the media competence of students, it is expedient to use the axiological approach, thanks to which the value-based self-identity of a student's personality is achieved, which represents a process of finding the meaning, goals and resources of one's own life in the time and space of education.

As a value-digital matrix for the development of students' media competence, we used A.V. Kiryakova's idea about the consistency of action for mechanisms ensuring the ascension of a person to values: search - evaluation - selection - projection (*Kiryakova, Olkhovskaya, 2012*). The value-based and meaning-based attitude of students was formed through the development of an ability of the value-based argumentations, which, according to G. Marcy, Behnke and M. Rath, expressed as a media critic, is a major element in the development of students' media competence. To develop the ability for value-based judgment we used a modified model of the axiological analysis of a text of D. Mieth (*Mieth, 1999*). The author substantiates the development of values in children and young people through the didactic use of analysis of text narration outside the scope of the narrative ethics: Analysis of the model - "What is being narrated? What is it all about?"; Analysis of the practice of narration - "How is it narrated? In which form the story is told?"; Analysis of the moral of narration - "Why is it narrated? What values are we talking about and which dilemma shows these values? How does the author try to achieve this?"

Second-year undergraduate students were asked to analyze the movies "Academy of death". Students were being interested the film "Academy of death" because the problem of neo-Nazism relevant today as ever. Student essays of film "Academy of death" had been analyses of content-analyses metodics and presented in table.

Criterion	Opinion	Number of sample
Analysis of the model - "What is being narrated? What is it all about?"	About life in the Academy "Napola"	2
	There are two lines of the story - life in the Academy, friendship between boys	3
	Friendship between boys	6
	About Friedrich, his formation and life values	4
Analysis of the practice of narration - "How is it narrated? In which form is the story told?"	The story goes through Outlook on the life at the Academy	5
	Through relationships between boys, dialogue	6
	Through a look at the life in the Academy, then the dialogue between Frederick and Alberta, and at the end the monologue	4
Analysis of the moral of narration - "Why is it narrated? What values are we talking about and which dilemma shows these values? How does the author try to achieve this?"	Friendship	15
	Moral values	13
	Human dignity	12
	Kindness	2
	Mercy	1
	The choice between serving the Fuhrer and friendship, universal values	14

Motivating students to identify the moral dilemmas presented by the author and expressed through the clash of values, stimulates them to turn to their own life, to analyze their values and construct own axiological position and identity. Practicing reasoned evaluative judgment of the author, thinking about the clash of values of the characters, we develop students evaluative, critical attitude to the media, and hence to their own life path generated subjective stance. Thus, the model axiological analysis of text can be used the program on the development of critical thinking and, therefore, media competence of students.

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MATHEMATICAL MODEL FOR REMOTE MONITORING CONTROL TECHNOLOGY BIOPRODUCTION PROCESSES IN WATER ECOSYSTEMS USING FLOATING PLANTS

Abstract

The urgency of the problem being studied due to the need to develop a wide range of control technologies and correction of bioproduction processes to address emerging threats in emergency situations Biosafety drinking and other uses, located in the vast territories of aquatic ecosystems, in particular - the technology is used for the correction of floating plants and remote sensing - to monitor the status of the aquatic ecosystem. The purpose of the research is to study using the original having the world novelty, the mathematical apparatus, the structure of relations colorimetric parameters of the water surface, measured remotely with a relatively simple and inexpensive methods. The leading method to the study of this problem is a formalized description of this structure with the help of a new class of mathematical models, called discrete models of dynamic systems - DMDS. Our results show the possibility of using the DMDS, certain aspects of bioproduction processes in aquatic ecosystems, aspects that are important in terms of technology to eliminate, with floating plants, water consumption biosecurity threats in extreme conditions. Article submissions may be helpful to a better understanding of the systemic aspects of the functioning of aquatic ecosystems and, in practical terms, to create technologies control and correction of character bioproduction processes in reservoirs and streams to eliminate, in extreme situations, threats biosafety consumption.

Keywords

discrete models of dynamic systems, water ecosystems,
remote determination of the ecological status, ponds and streams,
water consumption biosecurity threats

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Introduction. Serious threats to biosecurity drinking and other water uses in the conditions of global climate change, may be due to imbalances processes, not related to human activities in aquatic ecosystems. The resonant example of this kind was observed in the summer of 2013 in the Kharkiv region (Ukraine) on the Seversky Donets River and the White Lake in a conservation area, near the Biological Station of Kharkiv National University named after V.N. Karazin.

Floating tropical plant *Pistia stratiotes*, cultured in medium latitudes only in aquariums and ornamental pools, which fell, unknown, in the Seversky Donets, it gave her a flash of biomass, which in a different place would pose a serious threat to biosafety - caused by the release of failure the water intake, which scored this living and dead biomass.

Experts do not rule out the threats of biosafety related to the creation of favorable conditions for the development of the dying biomass of microorganisms - causative agents of dangerous infectious diseases. It should be noted that the development *Pistia stratiotes*, as well as other floating plants, in many cases relatively easily regulated by simple means - such as floating barriers. It is practiced in the tropical and subtropical regions of the world where cultivated *Pistia stratiotes*: as a fodder plant, or, as in some parts of Central Asia, for purification of waste water. But the massive development of mid-latitude tropical plant is a sign of disturbance of homeostasis of aquatic ecosystems - natural mechanisms to protect, for the time being, by threats biosafety that may arise as a result of outbreaks of biomass is much more dangerous than *Pistia stratiotes*, organisms - alien or mutant.

For example - toxic cyanobacteria development which is an important source of drinking water for Israel Lake Kinneret, it creates now a major concern of biosafety threat. And in other cases, not the least we can talk about the threats biosafety drinking water, which can lead to other threats - public and national security. Parry these threats will require in the near future the development of technologies of water ecosystems - in cases of catastrophic breach of their natural homeostatic mechanisms.

The above example of such violations suggests at first glance - a paradoxical, the idea of using such technologies *Pistia stratiotes*, used as described above for purification of wastewater. and abilities, he tells us said a sad but instructive precedent in a short time to complete its entire surface biomass such as the Seversky Donets River for more than ten kilometers, By creating this huge over the surface of a biofilter with a complex organism, promotes mineralization of organic substances and disposal of waste water. Note that a biofilter would be very useful in the same Kharkiv region in the summer of 1995, during the catastrophe at Dikanevskoy biological treatment plant. When the river in Kharkov was thrown a huge amount of untreated wastewater, What experts say NATO has created a real danger of epidemics of infectious diseases, not only in Ukraine and neighboring countries, but also in Western Europe, the biofilter of *Pistia stratiotes* or other floating plants in such a situation would have to function over a wide area. Its operation will require methods of control and correction - in order to optimize processes increase plant biomass, acting as agent, water purification and removal of excess biomass, acting as agent, water purification and removal of excess biomass, which can be a source of secondary pollution of water by the withering away and cause a malfunction in the hydraulic structures.

Control of the vast water areas is also necessary to prevent pressure uncontrolled development of aquatic plants, which can cause ecological catastrophe - like above the Seversky Donets River in the summer of 2013. The vastness of the area controlled by making use of perspective in the case of a relatively simple and inexpensive methods for determining the distance of aquatic ecosystems (hydrobiocenoses). Such, for example, digital photography from the board of light unmanned aerial vehicles (UAVs). Digital photography was used for this purpose during the experiment on introdutsirovaniyu *Pistia stratiotes* in one of the ornamental ponds Kharkov Zoo (1).

In this case, digital photography, with the fixation of the colorimetric parameters associated with the presence in the water of the pond chlorophyll and other plant pigments that give factual material for mathematical modeling of the dynamics of bioproduction processes hydrobiocenoses. As a result of the simulation was to explain the causes for which, *Pistia stratiotes* in the pond, although received some development, but not as massive as the at the same time in the Seversky Donets. To simulate the use of genuine having world novelty developed in Kharkiv National University named after VN Karazin class of mathematical models, called discrete models of dynamic systems (DMDS) (1-7). DMDS allows the structure analysis of correlations between the system components, to give a qualitative description of the structure of the formalized interconnect

relationship ECOTOR structure can be represented as a matrix or graph. In her (it) can be the basis for a certain combination of the initial values of components built idealized trajectory of the system (ITS), which reflects a shift, characterized by different combinations of the values of the components of the phases. In some cases, there is no need of constructing DMDS in a series of observations of the modeled system over a period commensurate with the cycle of changing its states (5, 7).

This is possible when we observe practically simultaneously a certain set of objects that can be described by the same DMDS and have the same ITS, according to which vary in one and the cycle, but are in different phases of its - components differing values. Along with the components, physical and biological meaning of which is known prior to the construction of DMDS is used (1, 7) latent components (LK) for which initially know is that the values of their correlations with other components - zero. Such correlation values are observed, in particular, when relationships between the components of the feedback type "+, -" characteristic, established the principle of Le Chatelier's a state of dynamic equilibrium relationship of components within a pair, whose members can be interpreted as indicators of the performance and the result of a process. This type of communication can be described as the relationship "predator-prey". As a result of DMDS corresponding interpretation of LC can be an expert to operate the system of information decision support system information support of decision-making (IDSS). As part raised in this article concerns biosafety focus should be on developing IDSS possessing databases (DB), which contain a variety of environmental information, including - get remote methods. With the use of DMDS using imaged with a digital photograph factual information, you can simulate the conditions, where *Pistia stratiotes* can quickly increase its biomass and fill it all the mirror of water.

This is necessary for activities to prevent pressure endanger Biosafety different types of water consumption catastrophic outbreaks of *Pistia stratiotes* (and other floating aquatic plants), and to determine the conditions necessary to create in emergency situations as soon as possible in natural waters biofilters *Pistia stratiotes* using as a water treatment agent. Based on the results of mathematical modeling using remote sensing methods of collecting the factual material, methods for determining these conditions must, in our view, be an essential component of the knowledge-based biotechnology perspective of water ecosystems using floating aquatic plants. This mathematical modeling is the subject of this paper.

Materials and Methods.

DMDS was performed using pirrsonovskoy correlation and ideology based on Liebig's law (3), using the results produced by natural sunlight white digital photography disc diameter of 100 mm and dive to a depth of 200 mm in the water two decorative ponds Kharkov Zoo. In one of them, hereinafter referred to as the pond N1, *Pistia stratiotes* although pprisutstvovala, but takes no more than one or two percent of the water surface, basically - the coast. In the other, hereinafter referred to as the pond N2, *Pistia stratiotes* occupied more than half the area of the mirror pond. Photographing performed at distances of 2 to 3 meters from the fifteenth of July to 15 August 2013 of camera Canon E OS - D Mark III 22.3 MN .

Photos were processed using the software package Image processing Toolbox MATLAB. As the values of the three "color", reflecting the color of the phytoplankton, the system components, were the following values: G / B , identified with the concentration of chlorophyll (the living, young, actively dividing cells of algae) in the water of the pond, R / G , identified with the "yellow-green index" reflecting the ratio of chlorophyll and yellow-orange plant pigments, $(R + G) / B$, identified with the total concentration in the water of the pond live and dead cells of algae, where R , G and B - the number of the red,

green and blue pixel elements. The fourth was a latent component (LK) - the value of the correlation coefficient is all the first three ("color") is equal to zero.

Results. As a result of using DMDS mathematical modeling was carried out a formalized description of the structure of relations between the components, characterizing the state of bioproduction processes in the pond N1, where no significant development of *Pistia stratiotes* in the pond, N 2, where it has developed considerably. These are the following components named above under , see ""Materials and Methods". Three "color" colorimetric: G/B , R/G , $(R+G)/B$, as well as LK. Thus, the correlation coefficient values with all three aforementioned colorimetric zero, which may be an indication of a connection type "-", "+". The resulting simulation graphs relationships between these components, for the two pools are presented in Figure 1 and Figure 2.

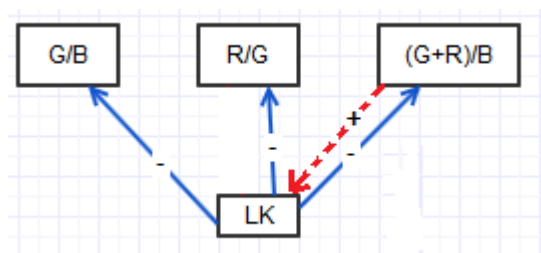


FIGURE 1. GRAPH OF RELATIONS BETWEEN THE COMPONENTS OF THE AQUATIC ECOSYSTEM IN THE POND N1. THE BOXES - COMPONENTS. THE SOLID ARROWS INDICATE THE DIRECTION OF THE NEGATIVE EFFECTS OF INTERCONNECT, INTERMITTENT - POSITIVE

From Fig. 1 shows that the main role played by the influence of latent component colorimetric components whose relationship with colorimetric components allow us to interpret it as an indicator of development in the pond zooplankton organisms are filter feeders: population growth that occurs in high concentrations in the water, both living and dead cells of microalgae ($(R + G) / B$), the power of filter reduces the concentration of zooplankton (values G / B , $(R + G) / B$) and providing the prevalence of young actively dividing "green" cell reduces the R / G .

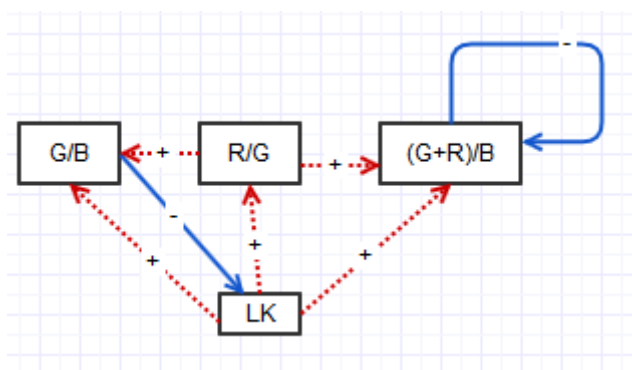


FIGURE 2. GRAPH OF RELATIONS BETWEEN THE COMPONENTS OF THE AQUATIC ECOSYSTEM IN THE POND N2. THE BOXES - COMPONENTS. THE SOLID ARROWS INDICATE THE DIRECTION OF THE NEGATIVE EFFECTS OF INTERCONNECT AND VNUTRIKOMPONENTNYH, INTERMITTENT - POSITIVE

Column relationship shown in Fig. 2, latent component, a positive effect on G / B , $(R + G) / B$ and R / G and the associated G / B according to the "+, -", can be interpreted as an expression of the concentration of microalgae in water available forms of nutrients, which contribute to high values: ascending concentrations in the water of the living and the dead cells of microalgae (LK positive effect on G / B and $(R + G) / B$), and, in this case - "aging" phytoplankton increase therein proportion of dead and old unable to actively dividing and nutrition, cell microalgae (ascending values R / G). The negative impact of G / B on the LC corresponds to the absorption of water young, actively dividing and feeding, microalgal cells available for phytoplankton forms of biogenic elements.

The comparison graphs relationship shown in Fig. 1 and Fig. 2 may state an important distinction structures relations components of aquatic ecosystems ponds N1 and N2. Namely, in the pond N2 are connected by direct dependence of growth of phytoplankton (increase value G / B and $(R + G) / B$) and its "aging", reduction of the share in it of young, actively dividing and feeding, the cells of algae (increased values of R / G). In the field of relations of components in the ecosystem of the pond 1 N signs direct dependence of phytoplankton growth and "aging" no.

Based on the graph relationship shown in Fig. 1 and Fig. 2, to determine the initial values of the components built idealized trajectory of the system, reflect a cycle of component values. Fig. 3 and 4 shows that are based on those of the ITS, directed graphs that reflect these cycles in the phase shift differing nature of the changes in the values of components associated with the growth of phytoplankton (G / B) and its "aging" (R / G). The edges of a directed graph indicate the direction of phase change, which corresponds to the vertex of the graph. The phases are different nature of the change component values at the current step, compared with the previous, and in some tops, component values. As with conditional steps ITS time, these specific values are given in conventional points: low - one point, the average - two points, high - three points.

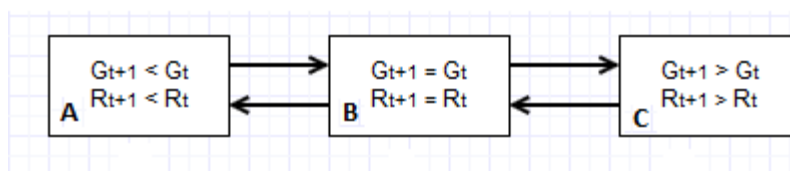


FIGURE 3 DIRECTED GRAPH OF PHASE CHANGE CHANGES ITS POND ECOLOGICAL SYSTEM N1; ARROWS - EDGES OF A DIRECTED GRAPH, RECTANGLES - THE TOP OF IT; $G_t + 1$ - VALUES OF G / B AT THE CURRENT TIME STEP IS CONDITIONAL, G_t - THE PREVIOUS, $R_t + 1$ - VALUES OF R / G AT THE CURRENT TIME STEP IS CONDITIONAL, R_t - THE PREVIOUS. A, B, C - LETTERING GRAPH VERTICES

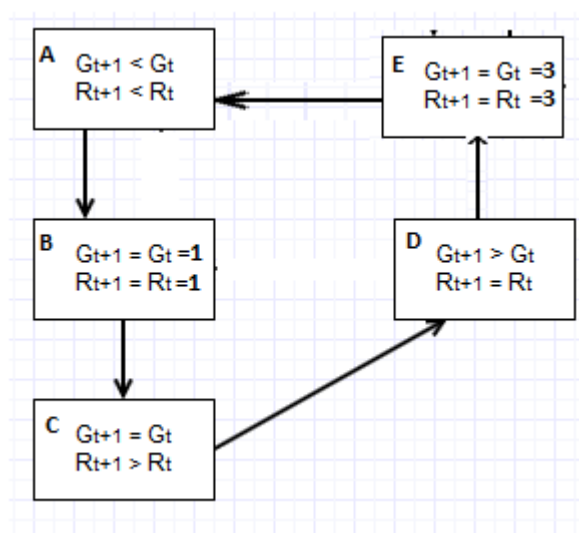


FIGURE 4. DIRECTED GRAPH OF PHASE CHANGE CHANGES ITS ECOLOGICAL SYSTEM OF THE POND N2; ARROWS - EDGES OF A DIRECTED GRAPH, RECTANGLES - THE TOP OF IT; $G_t + 1$ - VALUES OF G / B AT THE CURRENT TIME STEP IS CONDITIONAL, G_t - THE PREVIOUS, $R_t + 1$ - VALUES OF R / G AT THE CURRENT TIME STEP IS CONDITIONAL, R_t - THE PREVIOUS. A, B, C, D, E - LETTERING GRAPH VERTICES

From a comparison of Fig. 3 and Fig. 4 shows that the dynamics of the ecosystem of the pond N1 present phase change (from the top edge to the top in C), at which the "aging" of phytoplankton growth ahead of it in the number of active young cells of algae. Zooplankton-filter-alike consume both young and old and dead cells of algae, saturating the water with their metabolites, that are available for phytoplankton form of nutrients. By the active removal of the water of these metabolites can only young cells of algae. Therefore, in situations where the "aging" of phytoplankton growth ahead of it, likely to accumulate in the water available for plant nutrients forms. This creates a favorable environment for the development in the water, along with other plants, phytoplankton, in our case, *Pistia stratiotes*.

As follows from the results in this paper mathematical modeling, the advance growth of phytoplankton its "aging" is accompanied by detectable using DMDS changes in the structure and dynamics of the relationship of the measured values of the color of the remote pond water. These are the parameters fixed by remote digital photography - using a relatively simple and inexpensive equipment that can be establish, for example, on board a light UAV. This, in our view, suggests the prospect of application DMDS to address threats biosafety related to the violation of stability bioproduction processes in aquatic ecosystems.

Discussions

The subject of this article from the perspective of theoretical biology refers to the problems of the organization at the level of biological communities. More specifically - to the research nature of the relationship of structure and dynamics of communities with their resistance. Including - with resistance to factors that promote conditions for accompanying flashes of some organisms violation of the existing biological equilibrium. Such studies have long been used by a wide range of mathematical methods, among which should be noted is still popular with environmentalists methods based on indicators shennovskih diversity (8). R. Margalef, one of the first to propose such an approach, once wrote, "ecologist sees any expression of diversity as possible to build a system with feedback" ("the ecologist sees in any measure of diversity an expression of the

possibilities of constructing feedback systems, or any sort of links, in a given assemblage of species") (9). As used in this work allows the unit DMDS based on relatively small in terms of the actual material to give direct formal description of the structure of feedback systems between the components of different nature (1-7), including - biological communities (1, 2, 7). Possibility of using DMDS, to also formalized description of the idealized cycle value changes of system components allows you to explore the relationship between the stability of the system and the parameters of its diversity. R. Margalef at the time showed that aquatic ecosystems for these parameters, along with others, can act, reflecting the ratio of plant pigments in it (10). As part of this operation such as parameter the ratio R / G , which is determined in such a relatively simple and inexpensive manner as a digital photograph. The structure of the feedback that other parameters of phytoplankton modeled using DMDS.

In connection with the practical task of determining the extent related to the possibility of a mass of toxic cyanobacteria, threatening drinking water consumption biosafety conducted studies of phytoplankton and its relations with other components of the ecosystem of Lake Kinneret mentioned above. The results of these studies are reflected in the works Hambright K., Pinchasov Y., Recknagel F (11-13). We know of no papers on aspects of solutions to major biosecurity threats such as Lake Kinneret waters through technology using floating aquatic plants, technologies, for understandable reasons, in such cases difficult to be realized. We know of no papers on aspects of biosafety decisions threats on large bodies of water such as Lake Kinneret, through technology, using floating aquatic plants, technologies, for understandable reasons, in such cases difficult to be realized. The closest to the content of this article is to work Grygoryev A. (1), which is devoted to mathematical modeling of bioproduction processes in a small pond, which has been introduced *Pistia stratiotes*. Presented in this work model, which is built using the DMDS and data obtained by a digital photo of the colorimetric parameters of phytoplankton, it describes the conditions under which the possibility of a mass in the water *Pistia stratiotes* absent, but does not describe the conditions are favorable for such development. This paper presents and compares models describing both favorable and unfavorable conditions for mass development of *Pistia stratiotes*. What matters for the development of technologies to eliminate the dangers of water consumption using Biosafety *Pistia stratiotes* and to prevent pressure uncontrolled its development - carrying such threats.

Conclusion The results obtained in this paper are the results, in our opinion, some interest from the point of view of theoretical biology - creating certain prerequisites for the expansion of ideas about the structure and dynamics of the feedback parameters of the aquatic ecosystem. However, these results are also highly relevant to the present time associated with the pressing problems of biosafety practical value - to develop, with the use of DMDS, relatively simple methods of remote control of bioproduction processes in the aquatic ecosystem. It's about control methods needed to address, with a rapidly increasing its biomass of floating plants, water consumption biosecurity threats arising in emergency situations, as well as - in situations where these threats arise from uncontrolled development of these plants.

Can recommend The results presented in this article are, in our opinion, have a certain interest to specialists in the field of theoretical biology. Their practical importance due to the elimination of threats to biosecurity and prevent pressure water consumption through the use of emergency biofilters of floating plants. Technology of creation of biofilters and remote monitoring of their operation on large areas is often difficult terrain must be equipped with the new structures with comprehensive capabilities and powers that effectively provide liquidation and prevent pressure biosecurity threats of various

kinds of water consumption resulting from natural disasters and man-made disasters. The need to create such structures in the near future in the interest of not only environmental, but also social and national security. For such structures should be developed DSS, allowing, in particular, to determine the optimal strategy to use, along with other agents of self-purification of water, also floating plants, taking into account the information received by remote methods, to implement some of which are described in this article.

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INFORMATIONAL-STATISTICAL METHODS IN MACHINE INDUSTRY, ECONOMY, ECONOMETRICS

Abstract

A new method of the econometrics computation, based on application of methods of information theory and new statistics « entropy of distribution » is offered. It is shown, that the entropy is the universal statistics, allowing to solve all problems of simulation of complex economic processes, the analysis of stochastic processes, including identification of the law of allocation and solving the problem of discrimination.

Keywords

econometrics, entropy, information theory, analysis, modelling

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During several decades in an economic science, as a whole, and in an econometrics, in particular, methods of research based on such concept as "entropy" are used.

Many publications of such scientists as V. Burlachkov (*Burlachkov, 2007*), E.T. Jaynes (*Jaynes*), R. Kümmel (*Kümmel, 2011*), O.J. Ljubimtseva (*Lyubimtseva, 2011*), V.V. Glushchenko (*Glushchenko, 2011*), S.D. Hajtun (*Hajtun, 2000*) and others may be mentioned. One of co-authors also applied the similar approach in examinations of processes of monitoring and control «The Informational analysis » (*Yudin, 1995*) where the analogy between function of a normal distribution in mathematical statistics and function of a free energy of Gibbs in a statistical physics has been lead.

The offered method draws an analogy between economic and thermodynamic processes, that, on the one hand, allows to achieve some new interesting outcomes having practical value, but, on the other hand, not always allows to draw new results and to size up a significance of models. The authors offer the new approach which is based on methods of an information theory, grounded by Claude Shannon (*Shannon, 1963*) and Norbert Wiener (*Winer, 1983*).

The jolt to wide application of methods of an information theory has been gained at study of operations of G.P. Basharin (*Basharin, 1956*) and S. Kullback (*Kullbak, 1967*).

In the foreword to book of S. Kullback (*Kullbak, 1967*) academician A.N. Kolmogorov wrote: «... The analytical means of an information theory has been created when the building of mathematical statistics was in the cores, finding the widest application, parts is already built and codified. But new thoughts and an analytical means of an information theory should lead, apparently, to appreciable reorganization of this building ».

The starting point, enabled to apply statistician H (an entropy of distribution) at a solution of applied problems, were articles of G.P. Basharin (*Basharin, 1956*) who have shown that this statistician has asymptotically a normal distribution, and papers of T.A. Azlarov, R. Muhamedhanova operations (*Azlarov, Mukhamedkhanov, 1982*) and A.M.Zubkova (*Zubkov, 1973*), generalized his results.

The analysis of the literature devoted of informational control theory, leads to a leading-out, that «... The informational approach gives the uniform point of view on all aspects of control, irrespective of its purpose and type of control of system » (*Petrov & others, 1970*) and allows to research objects of the complicated nature on rather simple and obvious mathematical models.

Universality of concept "information" and "entropy", connection with the classical thermodynamics, indicated in articles (*Ryopke, 1990; Yudin, 1995*), give the foundation to suppose, that methods of a mathematical information theory are not simply useful abstract models, but also adequate exposition of an objective reality.

Let's consider some relations from an information theory.

Let some system has a discrete gang of states x_1, x_2, \dots, x_k , which it can accept with probabilities p_1, p_2, \dots, p_k . Then, according to C. Shannon (*Shannon, 1963*), the measure of indeterminacy or an entropy of system has following numerical value

$$H = h = -\sum_{i=1}^k p_i \ln p_i \quad (1)$$

The probabilities used in expression (1), as a rule, will be determined by practical consideration, therefore, at calculations, instead of exact values it is necessary to use the empirical estimations calculated through frequencies of observations of appropriate states, i.e. as an estimation of an entropy magnitude will be used

$$H^* = -\sum_{i=1}^k p_i^* \ln p_i^*, \quad (2)$$

Where $p_i^* = \frac{f_i}{n}$ - frequencies estimations; f_i - frequencies of observations of appropriate states; n - an amount of observations (sample size).

As it has been shown by G.P.Basharin (*Basharin, 1956*) statistical estimation of an entropy (2) has asymptotically a normal distribution with parameters

$$\begin{cases} \mathbf{M}(H^*) = h - \frac{k-1}{n} \\ \mathbf{D}(H^*) = \frac{a^2 - h^2}{n} \end{cases} \quad (3)$$

Here

$$a^2 = \sum_{i=1}^k p_i \ln^2 p_i \quad (4)$$

Parameters a^2 and h in the further we shall name as entropy parameters of the distribution.

At study of economic processes it is necessary to deal not with discrete, and with continuous distributions of the random quantities describing factors and dependent values. In this case formulas (1)...(4) are immediately inapplicable. The way out is given by H.Harmut's article (*Harmut, 1989*).

He noted that «... Always it is possible to fulfill only a finite number of measurings. Besides if we wish to lead measurings in various points of space and a time the distance between these points should be finite» (*Harmut, 1989*). This assertion enables to justify necessity of a digitization of the continuous random quantities.

S. Iudin has shown, how it is necessary to spend procedure of a digitization (*Yudin, 1995*).

Let $W(x)$ - a probability density function of some aleatory variable X with variance s^2 .

We ration aleatory variable X and we shall introduce the new $\tilde{X} = X / \sigma$ having a frequency function $w(x)$. We shall divide a range of an aleatory variable into intervals breadth Δx . We shall enumerate these intervals from lower up to an upper bound numbers of the positive integers from 1 up to k . Let probabilities of hit in each interval are equal accordingly $p_i, i = 1 \dots k$.. We shall introduce entropy parameters of an abrupt distribution as follows:

$$\begin{cases} h = - \int_{-\infty}^{\infty} w(x) \ln w(x) dx \approx - \sum_{i=1}^k p_i \ln p_i + \ln \frac{\Delta x}{\sigma} \\ a^2 = \int_{-\infty}^{\infty} w(x) \ln^2 w(x) dx \approx \sum_{i=1}^k p_i \ln^2 p_i + 2h \ln \frac{\Delta x}{\sigma} - \ln^2 \frac{\Delta x}{\sigma} \end{cases} \quad (5)$$

The less breadth of intervals Δx , the more exact the equality in formulas (5). The variance of an empirical entropy also is presented by expression $D(H^*) = \frac{a^2 - h^2}{n}$, where n - a sample size.

The empirical entropy of the continuous distributions which have transited procedure of a digitization, discovered by results of experiences, has a normal distribution with the parameters computed under formulas (3), (4) in view of (5).

Besides the above-stated property of an empirical entropy that allows to introduce new measure of identification of an aspect of a distribution law, methods of an information theory enable build-ups of adequate models of nonlinear processes.

Let's consider two-dimensional aleatory variable $Z = (X, Y)$. Let X - an independent value, and Y - a dependent value. Let us digitize ranges of one-dimensional random quantities X and Y . Let p_{xi} ($i=1 \dots k_1$) - probabilities of hit of values of random quantity X in appropriate intervals, and p_{yj} ($j=1 \dots k_2$) - the same for Y . We shall designate through p_{ij} probability of hit of random quantity Z in an appropriate cell.

Let's compute entropies of all three magnitudes:

$$H(X) = - \sum_{i=1}^{k_1} p_{xi} \ln p_{xi}; \quad H(Y) = - \sum_{j=1}^{k_2} p_{yj} \ln p_{yj}; \quad H(Z) = - \sum_{j=1}^{k_2} \sum_{i=1}^{k_1} p_{ij} \ln p_{ij} \quad (6)$$

The amount of information transmitted from independent value X to dependent sample Y , is equal to

$$I(X \rightarrow Y) = H(X) + H(Y) - H(Z) \quad (7)$$

It is possible to show, that in case of statistical independence of random quantities X and Y the entropy of two-dimensional random quantitie Z is equal to the total of entropies of one-dimensional quantities, and in case of the determined monotone association of one-dimensional quantities all three entropies are equal. So it is possible to introduce the parameter «coefficient of informational relation»

$$q = \frac{I(X \rightarrow Y)}{H(Y)}, \quad (8)$$

which is equal to null at statistical independence of one-dimensional quantities and equal to unity at the determined monotone relation.

F. Attneave (*Attneave, 1991*) and A. von Eye (*Eye, 1982*) are shown, that empirical information $I^*(X \rightarrow Y)$ within a constant factor has χ^2 -distribution:

$$2n I^* = \chi_m^2, \quad (9)$$

that allows both to size up a significance of correlations, and to define a confidence interval for coefficient of informational connection.

Here $m = (k_1 - 1)(k_2 - 1)$ - an amount of degree of freedoms; k_1, k_2 - an amount of intervals of a partition of entering and output parameters accordingly; n - a sample size.

TABLE 1

Parameter	The analysis of variance	The Informational analysis
Indeterminacy	Variance $\mathbf{DX} = \sigma^2$	Entropy \mathbf{H}
Interacting	The Covariance $m_{ij} = \text{cov}(\mathbf{X}_i, \mathbf{X}_j)$	The Information $\mathbf{I}_{ij} = \mathbf{I}(\mathbf{X}_i \leftrightarrow \mathbf{X}_j)$
Coefficient (measure of connection)	The second power of a coefficient of correlation r^2 $\left(r_{ij} = \frac{\text{cov}(\mathbf{X}_i, \mathbf{X}_j)}{\sqrt{\mathbf{DX}_i \cdot \mathbf{DX}_j}} \right)$	Coefficient of informational connection $q_{ij} = \frac{\mathbf{I}_{ij}}{\mathbf{H}_j}$
Regression	$\hat{\sigma}_i^2 = \sum_{k \neq i} b_{ik}^2 \sigma_k^2$	$\hat{\mathbf{H}}_i = \sum_{k \neq i} c_{ik} \mathbf{H}_k$
Coefficients of the equation of a regression	$b_{ik} = -\frac{m_{ik}^{-1}}{m_{ii}^{-1}}$	$c_{ik} = -\frac{\mathbf{I}_{ik}^{-1}}{\mathbf{I}_{ii}^{-1}}$
Multiple connection	$r^2(\mathbf{X}_i; \text{all others}) =$ $= 1 - \frac{1}{m_{ii} m_{ii}^{-1}}$	$\mathbf{H}(\mathbf{X}_i; \text{all others}) =$ $= 1 - \frac{1}{\mathbf{I}_{ii} \mathbf{I}_{ii}^{-1}}$
Deviations because of not considered factors	$F = \frac{\sigma_i^2}{\hat{\sigma}_i^2}$	$F = \frac{\mathbf{H}(\mathbf{X}_i)}{\hat{\mathbf{H}}(\mathbf{X}_i)}$

The table of analogies between dispersing and informational analyses (tab. 1) is above presented.

Thus, the possibility of usage of a statistician "entropy" for a solution of manifold problems of an econometrics is justified.

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THE INFORMATIONAL CRITERION OF IDENTIFICATION OF THE DISTRIBUTION LAW

Abstract

The new informational criterion of the distribution law identification is offered. It is shown that this criterion is universal and allows to test any hypothesis but not only Gaussian processes as the Pearson criterion. It is shown that the informational criterion is more powered in comparison with the Pearson criterion and has a smaller beta error.

Keywords

econometrics, entropy, distribution law, criterion

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Till now the main method of identification of the distribution law is the method of the Pearson grounded on application statisticians χ^2 . It apply at the analysis of almost any random variables. The problem consists that the structure of criterion of the Pearson is the next - it is intended for inspection only one hypothesis: whether the given distribution is normal?

Other criteria have not received due propagation.

Authors suggest to apply informational criterion (Yudin, 1995).

Let's assume that the value space of the continuous random variable X is divided into a finite number k parts (intervals) $A_i: x \in (x_{i-1}, x_i)$, where $x_i (i=0... k)$ - boundary points of intervals. Let p_1, p_2, \dots, p_k - appropriate values of a probability function, so

$$p_i = P(x \in A_i); \sum_{i=1}^k p_i = 1 \quad (1)$$

The system X having a finite number of states, is characterized by the uncertainty which value is defined by a measure of the Shannon-Wiener (entropy):

$$H = h = -\sum_{i=1}^k p_i \ln p_i \quad (2)$$

The probabilities used in expression (2), as a rule, are defined by practical consideration, hence, at calculations, instead of exact values it is necessary to use the empirical estimations calculated through frequencies of observations of appropriate states, i.e. as an entropy estimation value will be used

$$H^* = -\sum_{i=1}^k p_i^* \ln p_i^*, \quad (3)$$

where $p_i^* = \frac{f_i}{n}$ - relative frequencies; f_i - frequencies of observations of appropriate states; n - an amount of observations (sample size).

As it has been shown by G.P.Basharin (*Basharin, 1956*), the statistical estimation of entropy (2) has asymptotically normal distribution with parameters

$$\begin{cases} \mathbf{M}(\mathbf{H}^*) = h - \frac{1}{n} \\ \mathbf{D}(\mathbf{H}^*) = \frac{a^2 - h^2}{n} \end{cases} \quad (4)$$

Here

$$a^2 = \sum_{i=1}^k p_i \ln^2 p_i \quad (5)$$

Parameters a^2 and h we will name further entropy distribution parameters.

Let's generalize reduced outcomes for the analysis of continuous distributions.

Let $W(x)$ is a density function of probability of some random variable X with a variance σ^2 .

We normalize random variable X and we will introduce the new random variable $\tilde{X} = X / \sigma$ having a density function $w(x)$. We will divide a random variable range into intervals a breadth Δx . We will enumerate these intervals from lower to upper bound numbers of the positive integers from 1 to k . Let probabilities of hit in each interval are equal accordingly $p_i, i = 1 \dots k$.

Let's mean

$$\begin{cases} h = -\int_{-\infty}^{\infty} w(x) \ln w(x) dx \approx -\sum_{i=1}^k p_i \ln p_i + \ln \frac{\Delta x}{\sigma} \\ a^2 = \int_{-\infty}^{\infty} w(x) \ln^2 w(x) dx \approx \sum_{i=1}^k p_i \ln^2 p_i + 2h \ln \frac{\Delta x}{\sigma} - \ln^2 \frac{\Delta x}{\sigma} \end{cases} \quad (6)$$

It is possible to display that the variance of empirical entropy as before is described by expression $\mathbf{D}(\mathbf{H}^*) = \frac{a^2 - h^2}{n}$, where n - a sample size.

The estimation of entropy \mathbf{H}^* has a normal distribution with parameters $\mathbf{M}(\mathbf{H}^*) = h$ and $\mathbf{D}(\mathbf{H}^*) = (a^2 - h^2)/n$.

Values of entropy parameters for some types of distributions are reduced in tab. 1.

TABLE 1. INFORMATIONAL PARAMETERS OF SOME DISTRIBUTIONS

The distribution law	h	a^2	a^2-h^2
The exponential distribution $w(x) = \exp(-x); x \geq 0$	1	2	1
Normal (Gauss) distribution $w(x) = \frac{1}{\sqrt{2\pi}} \exp\left(-\frac{x^2}{2}\right)$	1.4189380	2.5133850	0.5
Rayleigh distribution $w(x) = x \exp\left(-\frac{x^2}{2}\right) (x \geq 0)$	0.9420343	1.2986621	0.4112334 77
Maxwell distribution $w(x) = \sqrt{\frac{2}{\pi}} x^2 \exp\left(-\frac{x^2}{2}\right) (x \geq 0)$	0.9961067	1.4270493	0.4348207 45
The the normal centered distribution $w(x) = \sqrt{\frac{2}{\pi}} \exp\left(-\frac{x^2}{2}\right) (x \geq 0)$	1.2319012	2.0175806	0.5
Weibull distribution $w(x) = \gamma x^{\gamma-1} \exp(-x^\gamma), (x \geq 0)$	$1 + C \frac{\gamma-1}{\gamma} - \ln \gamma$	$a^2 = 1 + (1 - \ln \gamma)^2 -$ $-2 \frac{\gamma-1}{\gamma} (C \ln \gamma + C + 1) +$ $+ \left(\frac{\gamma-1}{\gamma}\right)^2 \left(C^2 + \frac{\pi^2}{6}\right)$	

Here $C=0.5772157$ - Euler's constant.

Let's consider value

$$J_c = \frac{H^* - h + \ln \frac{\Delta x}{\sigma}}{\sqrt{\frac{a^2 - h^2}{n}}} \quad (7)$$

Here a^2, h - entropy parameters of a prospective parent distribution; Δx - a breadth of intervals of a partition of a range of a random variable X ; σ - its average quadratic deviation; n - a sample size.

At coincidence of empirical distribution with prospective theoretical distribution of parameter J_c will be Gaussian with a unit variance and zero expectation.

The choice of limiting value J_c at which the estimation of entropy H^* should be in a confidence interval, depends on the selected significance level α . This value is from a known ratio:

$$P(J_c \leq t_{1-\alpha}) = \frac{2}{\sqrt{2\pi}} \int_0^{t_{1-\alpha}} \exp\left(-\frac{x^2}{2}\right) dx \quad (8)$$

For the purpose of reliability assessment and a potency of informational criterion its comparing with criterion of the Pearson χ^2 has been led.

Comparing of a potency of criteria by a simulation modelling method has displayed that a potency of informational criterion same, as at criterion of the Pearson while probability to reject a true hypothesis slightly more low (Yudin, 1995).

Let's consider an example of usage of informational criterion.

Observations over failures of servers at the large enterprise are reduced in tab. 2.

TABLE 2. INPUT DATA

Number of observa-tions	Value	Number of observa-tions	Value	Number of observa- tions	Value	Number of observa- tions	Value
<i>i</i>	<i>x_i</i>	<i>i</i>	<i>x_i</i>	<i>i</i>	<i>x_i</i>	<i>i</i>	<i>x_i</i>
1	31.9	26	2045.4	51	95.4	76	984.3
2	1600.9	27	797.0	52	313.4	77	3146.5
3	654.9	28	4.3	53	262.2	78	21.1
4	2023.1	29	1645.2	54	1468.6	79	1158.8
5	134.5	30	377.8	55	1321.0	80	3217.7
6	3704.3	31	404.0	56	1238.8	81	2397.9
7	743.2	32	988.0	57	283.7	82	729.8
8	49.9	33	2573.2	58	209.0	83	582.7
9	1143.2	34	205.4	59	2871.1	84	22.4
10	262.2	35	857.9	60	682.2	85	381.5
11	372.2	36	773.5	61	917.6	86	522.3
12	128.9	37	220.9	62	3008.5	87	3010.2
13	1203.0	38	563.8	63	2217.6	88	5917.8
14	474.8	39	775.7	64	1372.8	89	2066.9
15	191.0	40	2331.8	65	806.1	90	291.4
16	401.5	41	52.8	66	1642.7	91	1652.0
17	762.1	42	455.3	67	1507.1	92	3078.7
18	39.6	43	105.9	68	3475.2	93	1025.0
19	1507.8	44	1976.1	69	400.8	94	250.9
20	42.7	45	240.5	70	1171.6	95	422.5
21	595.7	46	20.3	71	863.3	96	340.9
22	30.1	47	797.6	72	1590.5	97	880.8
23	31.9	48	1736.0	73	225.0	98	353.6
24	1600.9	49	1407.2	74	1199.2	99	734.3
25	654.9	50	107.3	75	1379.3	100	310.6

The data contains convergence on duration of non-failure operation, i.e. slice of times from one failure to another (in hours). It is necessary to lead data analysis for the purpose of identification of the distribution law by means of criterion of the Pearson. It is necessary to mark that the researched random variable, according to the common reasons, should submit to exponential distribution.

Statistical sampling parametres have following values:

$$\text{Arithmetic average- } \bar{x} = \frac{1}{100} \sum_{i=1}^{100} x_i = 1025.5;$$

$$\text{Average quadratic deviation- } S = \sqrt{\frac{1}{99} \sum_{i=1}^{100} (x_i - \bar{x})^2} = 1037.46;$$

Maximum and minimum values in sampling: $x_{\max}=1039,8$; $x_{\min}=945,1$.

Algorithm of creation of the histogram is the following.

1. We divide a range of a researched random variable into intervals breadth S (tab. 3).
2. We calculate the histogram, i.e. it is defined, how many time the random variable X gets to each interval (tab. 4).

TABLE 3. INTERVALS OF A PARTITION OF A RANGE OF A RANDOM VARIABLE

	INTERVALS					
Number	1	2	3	4	5	6
Range	0-1025	1025-2050	2050-3075	3075-4100	4100-5125	5125-6150

TABLE 4. THE HISTOGRAM

	INTERVALS			
Number i	1	2	3	4
Frequency fi	63	23	8	6

Entropy is defined from given tab. 4 under the formula

$$H = -\sum_{i=1}^k \hat{p}_i \cdot \ln \hat{p}_i = -\sum_{i=1}^n \frac{f_i}{n} \ln \frac{f_i}{n} = 0,99997.$$

Exponential distribution has following values of entropy parametres (tab. 1): $h=1$; $h^2-a^2=1$.

The informational criterion settles up under the formula

$$J_c = \frac{H - h}{\sqrt{\frac{h^2 - a^2}{n}}} = \frac{0,99997 - 1,00000}{\sqrt{\frac{1}{100}}} = -0,00003.$$

Critical value of informational criterion is defined through a normal distribution function:

$$t_\alpha : P(|x| > t_\alpha) = \alpha; \quad \alpha = 2 \cdot \frac{1}{\sqrt{2\pi}} \int_{t_\alpha}^{\infty} \exp\left(-\frac{x^2}{2}\right) dx.$$

Here α - a fiducial probability. At $\alpha=0,05$ the quantile $t_\alpha=1,96$.

Since $|J_c| < t_\alpha$ ($0,00003 < 1,96$) a null hypothesis about exponential distribution of a researched random variable it is accepted.

Thus, it is shown that the informational criterion exceeds criterion of the Pearson and it will be used at the analysis of complicated systems.

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