Teoretičeskaâ i prikladnaâ nauka

Theoretical & Applied Science

Philadelphia, USA

Teoretičeskaâ i prikladnaâ nauka

nauka

Theoretical & Applied Science

Science

04 (84)

2020

ISSN 2308-4944

9 772308 494201

04

International Scientific Journal

Theoretical & Applied Science

International Scientific Journal

Theoretical & Applied Science

Clarivate Analytics   **doi**   **crossref**

Impact Factor ICV = 6.630

Impact Factor ISI = 0.829
based on International Citation Report (ICR)

40%	60%
Accepted	Rejected

The percentage of rejected articles:

QR – Issue   QR – Article

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THE ROLE AND IMPORTANCE OF INDIVIDUAL EDUCATION IN THE SYSTEM OF ORGANIZATION

Abstract: there are different forms of education in the world of pedagogical science and practice. Each new stage in the development of society has an impact on the organization of education. Currently, the following forms of education are distinguished: individual, individual-group, class-lesson, lecture-seminar and out-of-class, and out-of-school. They are divided into three main types according to their characteristics such as student coverage, organization of student activities, proportions of team and individual forms, degree of independence, and leadership characteristics of the learning process: individual; classroom; lecture-seminar.

Key words: education, pedagogical science, practice, activities, individual, classroom, lecture-seminar, experiences.

Language: English

Citation: Alimova, N., & Radjabova, M. (2020). The role and importance of individual education in the system of organization. ISJ Theoretical & Applied Science, 04 (84), 401-404.

Soi: http://s-o-i.org/1.1/TAS-04-84-69   Doi: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.69
Scopus ASCC: 3304.

Introduction

The oldest form of teaching that existed in ancient times was the individual form of education. The transmission of life experiences from ancestors to generations originated in primitive society. With the advent of writing, the head of the tribe taught his experiences to the youth using various symbols. Tutoring is an example of a direct and individual relationship between a teacher and a student. The individual form of education was the only method in antiquity and the Middle Ages, and was widely used in some countries until the eighteenth century. Individual education has a number of advantages, so this method has survived to the present day in the form of tutoring. Its advantage is the complete individualization of the content, method and image of the educational activity, allowing to follow its every action and operation in solving a specific problem.

Individual education requires a teacher to have high pedagogical skills.

II. Literature review

As early as the 11th century, Abu Ali ibn Sina, in a special section of his scholarly work, "Tadbiri manzil", entitled "Amuzish va parvarishi modrasas farzand", gave the following recommendations for collective teaching to students:

1) if students study together, they will not be bored, their interest in studying science will increase; they develop a desire to compete with each other so as not to lag behind each other, which helps the child's learning improve.

2) in conversations, students tell each other interesting information they have read from a book or heard from an adult;

3) when children get together, they make friends and respect each other; they not only compete, but also

help each other to master the learning materials; it makes children proud and learns good habits from each other.

Burhanuddin Zarnuji (12th century) gives advice on teaching in his scholarly work, "Bilim olish yo'lida o'quvchiga maslahatlar". This scientific work was created on the basis of his many years of teaching experience and was used in Central Asian madrassas until the twentieth century as a unique pedagogical and psychological textbook. The play states that the lesson at school should last about an hour. The teacher should select the teaching materials that can be understood and mastered in the school, and explain the materials studied in the lesson. The study material should be chosen in such a way that it is mastered twice. Therefore, he suggests dividing large texts into parts and repeating them in other lessons.

Muhammad Taragay Ulugbek continued the idea of organizing collective education in the 15th century. The thinker abolished the system of individual lessons in his madrassas and introduced a form of "community" close to the class-lesson system. The general lecture is given to a large group of 50-70 people, usually by a well-known scholar (teacher-professor), and the practical training is given by a small teacher (teacher) in a small group of 10-15 people. Important teaching methods are discussion and debate. The lectures at the Samarkand Madrasa were delivered by the scholar himself and other famous scholars such as Qazizada Rumi, Mavlana Muhammad, Ali Kushchi, Avaz Kirmani. Muhammad Taragay Ulugbek and his followers created new textbooks in mathematics, metaphysics, astronomy, geography, and history, which were written in a simple and understandable form. But the "community" approach also had its drawbacks. The collective method does not take into account the individual characteristics of mastery, as in the group-laboratory method, which was popular in the school of the twentieth century. Some students who have not mastered it well will graduate from a madrasah without being able to acquire the necessary knowledge, as they have advanced from one manual to another.

III.Analysis

In addition to the advantages of individual training, there are a number of disadvantages, which include:
- time-saving;
- limited teacher influence (teacher's task is to give the student a task and check its performance);
- limited ability to work with other students (which negatively affects the process of socialization);
- lack of teamwork experience.

For these reasons, the importance of individual teaching methods declined from the 16th century onwards, and was replaced by individual-group forms of education. Individual-group forms of education

began to be widely used in Europe in the 16th century. In Central Asian countries, this method was used in ancient times. An example of this is the Avesto period, during which the main textbook for students was the sacred source of Zoroastrianism, the Avesto (VII-XVI centuries BC). In the schools of the Avesto period, individual teaching was combined with group teaching. The mental exercises were conducted during the teacher's free conversation with the student. Physical training is carried out in the form of individual and group training. The purpose of physical education was to prepare young people for military service. Horseback riding, hunting, knowledge of the use of swords, swimming, running, javelin throwing, etc. were considered mandatory forms of military training. The learning process lasted from sunrise to sunset, with no homework.

The content of the individual-group form was that the teacher conducted the lessons not with one student, but with a group of children of different ages with different levels of preparation. The teacher takes turns asking each student the material, explaining new questions, giving individual assignments for independent work, and the rest of the children doing their own work. In this way, children could come to classes at different times of the year and at different times of the day. During the fifteenth and sixteenth centuries, the development of production in Europe was observed. These changes have led to the emergence of a mass form of education for children. One of them is group (collective) education of children. It was first used in fraternal schools in Russia (now western Belarus and Ukraine) and became the basis of the classroom form of education. These systems were theoretically substantiated and popularized in the seventeenth century by Jan Amos Comenius in The Great Didactics. The scientist introduced such concepts as pedagogical-psychological academic year, school day, lessons, breaks between classes, school holidays. Although the classroom system was founded 350 years ago, it is still widely used today.

The content of the classroom system as a specific form of organization of educational work is as follows:
- Students of the same age and with approximately the same level of preparation make up the class. This class maintains a regular order based on the overall duration of the school;
- Class activities are organized on the basis of a single annual plan and program, on a regular schedule, as a result of which children have to come to school at certain times of the year and at certain times of the day;
- The main unit of training is a lesson;
- The lesson is usually devoted to one subject or topic, so students work on one material in the classroom;

- The work of students in the class is supervised by the teacher, who evaluates the results of study in his subject, the individual knowledge of each student and at the end of the year decides on the transfer of the student to the next grade.

The classroom system is further developed by K.D. Ushinsky. He scientifically substantiated all the advantages of this form. The course, in particular, created a concise theory of its organizational structure and typology. K.D. Ushinsky distinguishes the following three parts of each lesson, which are connected in series:

- to realize the understanding of new knowledge on the basis of previously learned knowledge and to create a target guide for students to accelerate the reception of the material. This part of the lesson, according to KD Ushinsky, is a "door" to the lesson.

- focuses on solving the main problem and is an important, central part of the lesson.

- to summarize the activities carried out and to strengthen knowledge, skills and abilities. A.Disterveg also made a significant contribution to the development of the scientific basis for the organization of the course. He developed a system of teaching principles and rules relating to the activities of the teacher and the student, arguing the need to take into account the age capabilities of the students.

IV.Discussion

In the late nineteenth and early twentieth centuries, the issue of the emphasis on individualization in the teaching of students with differences in intellectual development became particularly relevant. Accordingly, a form of selective teaching emerged (Batov in the United States, Maingames system in Europe). In Europe and the United States in the early twentieth century, the effectiveness of many education systems aimed at ensuring individual, active, independent learning of students was tested. The individualized system of education, first used by teacher Elena Park Hearst in Dalton, Massachusetts, in 1905, was the most radical of these. This system went into pedagogical-psychological and school history under the name of color-plan. It is sometimes called a laboratory or workshop system. The content of this system is as follows:

- The success of educational activities depends on the pace of work at school, the ability of each student to adapt to their abilities;

- The traditional organization of learning, which is dominated by educational activities, is the center of independent learning activities of students,

- The role of the teacher is to organize activities in a polite manner,

- Replacement of class laboratories with workshops,

- Cancellation of classes,

- The teacher does not explain the new material,

- The student is able to work independently in the laboratory or workshops on the basis of assignments received from the teacher and, if necessary, ask for help from the teacher.

The system has been widely criticized for a number of shortcomings. In the 1920s, the School Research Institute of School Affairs began to promote a projected system of education. It was developed by the American U.Kilpatrick. The essence of this system of teaching is that students choose the topic of the project. It had to be connected to the existing real life and reflect the socio-political, economic-industrial or cultural-social aspects, depending on the specialization (direction) of the study group.

The Trump plan became very popular in the 1960s. It was developed by American professor and educator Lloyd Trump. This form of teaching offers classes in large audiences (100-150 people), in groups of 10-15 people, and individual work of students. 40% of the study time is spent on general lectures using various technical means. Classes in small groups - 20% for individual independent work in classrooms and laboratories - 40%. In the 1970s, the search for non-traditional forms of education continued. The search for experimental and test schools was primarily concerned with the idea of modernizing the classroom system. The main goal of the research was to individualize reading.

V. Conclusion

With the emergence of the first universities, a lecture-seminar system of education began to emerge. It hasn't changed much since it was created. Lectures, seminars, practical and laboratory work, consulting and internships in the chosen profession are still one of the main forms of training as a lecture-seminar system. The lecture-seminar system in its purest form is used in the practice of higher and postgraduate education. With the introduction of three-year secondary special, vocational education in Uzbekistan, the system of lectures and seminars began to be used in academic lyceums and professional colleges. Recently, elements of the lecture-seminar system have been used in the upper grades of high school.

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ANALYSIS OF TRANSFORMATION MOTIFS IN "THE MAGIC HAT" BOOK BY KHUDOYBERDI TUKHTABOYEV, THROUGH THE PRISM OF MIKHAIL BAKHTIN'S THEORIES

Abstract: *The article is devoted to the analysis of the "The Magic Hat" book, written by popular Uzbek writer Khudoyberdi Tukhtaboyev, from the position of classification elements introduced my famous Russian philosopher, literary critic and scholar Mikhail Mikhailovich Bakhtin. The analyzed points relate to transformation motifs, a category which was examined in detail by Bakhtin. The comparison of transformation motifs of "The Magic Hat" with the ones present in"The Golden Ass" by Apuleius, "The Metamorphosis" by Franz Kafka, "The Invisible Man" by Herbert Wells and "The Wild Ass's Skin" by Honore de Balzac, reveals the common concepts related to Metamorphoses. The comparison is performed in relation to the views of Mikhail Bakhtin.*

Key words: *Metamorphosis, transformation motifs, Mikhail Bakhtin, Khudoyberdi Tukhtaboyev, mythology, analysis, analogies, comparison, literature, Apuleius, Franz Kafka, Herbert Wells, Honore de Balzac.*

Language: *English*

Citation: Kadirova, N. A. (2020). Analysis of Transformation Motifs in "The Magic Hat" book by Khudoyberdi Tukhtaboyev, through the prism of Mikhail Bakhtin's theories. *ISJ Theoretical & Applied Science, 04 (84),* 405-408.

Soi: http://s-o-i.org/1.1/TAS-04-84-70   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.70

Scopus ASCC: 1208.

Introduction

Khudoyberdi Tukhtaboyev is one of the most famous modern Uzbek authors. His book "The Magic Hat" is very popular among younger generation. It is about a boy who found a magic hat that allowed him to be invisible. The storyline leads the reader through all his adventures with a single idea connecting all the events: Nothing in this world can be achieved without effort, even if you own a magic hat. Although the story might sometimes sound strange to people not familiar with the reality that was present in the country about 50 years ago, the overall message of author is quite vivid. The objective of the book seems to be the development of sense of responsibility and understanding the importance of hard work.

Skipping the plot and the chronotope of the book, discriminating reader can notice a link between the structure of the storyline and the ideas of Mikhail Bakhtin relating to the concept of Metamorphosis in literature. The classifications introduced by Bakhtin almost a century agoprove to be right in relation to stories written by authors many decades later. Bakhtin named Metamorphosis (transformation) in oral and written literature as treasury of world pre-class folklore, stating that transformation and identity were deeply combined in the folklore image of a person, and from the folklore this interconnection passed to the literature of different times. In a particularly clear form, this combination is preserved in a folk tale. In case of Tukhtaboyev's story, the main hero – Khashimjan, after becoming invisible, still retains the character of an ordinary schoolboy. His identity did not undergo metamorphosis, and thoughts remain usual. However, within the process of the plot development, a much deeper transformation takes place in internal world of the main hero, and the surroundings. This point was also noted by Bakhtin, who stated that from man, the transformation motifs pass over to the whole human world - to nature and to things created by man himself. He explained his point of view through the works of Rabelais, but the proposed general standards perfectly fit Khashimjan's case as well. By trying to help people and himself to reach the goals that he personally considered as important, the main hero fails many times and ruins the plans of people surrounding him. Step-by-step the

understanding of the right way is shaped in his head. Thus a new, and a more significant metamorphosis occurs. Much more significant than the invisibility. To differentiate this two cases of transformation, and to review historical precedents relating to the use of transformation motifs in literature, a glance on the Bakhtin's works might come handy again.

Materials and methods/theoretical basis

Bakhtin figure out that the idea of metamorphosis has done a very complex and ramified development path. One of the ramifications of this path is Greek philosophy, where the idea of transformation, along with the idea of identity, plays a huge role, and the significant mythological sheath of these ideas were preserved until Democritus and Aristophanes.Another branch is the cultic development of the idea of metamorphosis (transformation) in the ancient mysteries, and especially in the Eleusinian mysteries. Ancient mysteries in their further development were more and more influenced by eastern cults, with their specific forms of metamorphosis. A third branch would be the continuing presence of transformation motifs in purely popular folklore. This folklore has not, of course, come down to us in its pure form, but we know of its existence through the influence it exercised: its reflection in literature (for example, in Apuleius' novella about Cupid and Psyche).And finally, a fourth branch is the development of the idea of metamorphosis in literature proper.(1)

This forth branch found its reflection in "The Magic Hat". Bakhtin states that transformation in literature could be of a single nature, or a chain of interconnected metamorphoses. Tukhtaboyev's story contains one element of so called "obvious" transformation and a series of "hidden", but quite more important transformations of the main hero and people surrounding him. Khashimjan thought that he can easily handle any profession he selects, because he was confident that the main thing in succeeding any work is the desire, but not the experience and knowledge. The main message of the storyline is to demonstrate the importance of education and hard work. So, in fact, the chronotope of the book plays almost no role in reaching its objective, the key point is the transformation motif.

Bakhtin claims that the concept of metamorphosis has undergone a significant change throughout the history before reaching modern literature as it is. On various stages of it formation the purposes and the scope of the term altered, becoming wider and narrower depending on period and author. For instance, the conception of metamorphosis in Hesiod, as in other early philosophical systems and classical mysteries, has far-reaching implications: the word "metamorphosis" itself, in Hesiod, is not used in the specific sense of a miraculous, instantaneous transformation of one being into another (a definition

bordering on the magical); this definition the word acquired only in the Roman and Hellenistic era. The word appeared with this meaning only at a later stage in the development of the metamorphosis theme. Ovid's Metamorphoses is typical of this later stage. Here the general idea of metamorphosis has already become the private metamorphosis of individual, isolated beings and is already acquiring the characteristics of an external, miraculous…(1)

Analyzing the work of Tukhtaboyev, and comparing its structure with the historical masterpieces, we can see a significant analogy with the Lucius from Apuleius' "The Golden Ass". The main hero in both works has undergone a shapeshifting, although in one case it happened unwillingly and in another the main hero was willing to transform. After the transformation both Lucius and Khashimjan became able to evidence private lives of various people, and both enjoyed their ability very much, trying to benefit from such an opportunity. However, their lives not only didn't improve by virtue of their new abilities, but got worse. Many times their transformations caused them troubles and thus taught them new lessons. And finally, at the end of both stories, the main heroes become better, "cleaner" in thoughts, and obtain unique experience in separating right from wrong. And in this point the can be said to undergo the most significant metamorphosis, because the change of physical appearance, and subsequent events led to changes in their inner worlds. Magic-bases metamorphosis gives rise to soul transformation processes.

Discussion

In fact, there are a lot of works where the structure is divided similarly into three stages: 1) before transformation, 2) in the state of transformation. and 3) "spiritual self-perfection" following the transformation. This is some sort of classical model for majority of stories aimed at teaching a lesson through the transformation motif. Similar situation can be observed in Kafkas "Metamorphosis", where Gregor Samsa has an ordinary life, then transforms into an insect and finally discovers a grim truth about the attitude off his family. Thus hytransforms twice within a single story line. First physically, then psychologically. In this matter Bakhtin states: "Metamorphosis or transformation is a mythological sheath for the idea of development - but one that unfolds not so much in a straight line asspasmodically, a line with 'knots' in it, one that therefore constitutes adistinctive type of temporal sequence".

Similarly, the image of Khashimjan, a boy trying to reach prosperity through his ability to be invisible, is a reflection of a complex hero moving along the line of time in search of a better world. However, his search teaches his many lessons, and finally he decides to give up invisibility and understands that the

real cause of his problems is the desire to find a simple solution to difficult questions, questions requiring efforts and time. Physical metamorphosis led to transformation of internal world of the schoolboy and as a result he felt "reborn" while giving up the Magic hat. A parallel line can be drawn between this event and Mikhail Bakhtin's views: "Metamorphosis serves as the basis for a method of portraying the whole of anindividual's life in its more important moments of crisis: for showing how anindividual becomes other than what he was. We are offered various sharplydiffering images of one and the same individual, images that are united in him asvarious epochs and stages in the course of his life. There is no evolution inthe strict sense of the word; what we get, rather, is crisis and rebirth".

In some cases, this so called "rebirth" is followed by the death of main hero. Usually, not in fairy tales but in science-fiction. For example in "The Invisible Man" by Herbert Wells, Griffin finds a way to make himself invisible, and tries to benefit from this ability. However, just like in case with Khashimjan, the reality opposes his wishes and creates unsurmountable obstacles on his way. Finally, Griffin's inner world transforms but unfortunately this happens too late and he dies without being able to revert to his original form. Kafka's Gregor Samsa is one more hero that died without transforming back to his original shape. And in "The Wild Ass's Skin" by Honore de Balzac, the main hero Raphael de Valentin also died at the end of the story, after passing all the stages mentioned by Bakhtin. First he was living unhappy life, then the transformation occurred by the help of magic, and finally the "rebirth" took place when he understood his mistakes and tried to fix them, however, did not succeed and died. In general, it could be noted that although in books written not for children the ending is usually not that happy, theirmessage is the same, so the structure similarities are obvious as well.

After attentive reading the above, a logical question might arise about why the ending of "The Magic Hat" is considered to have elements of "rebirth" or metamorphosis of the internal world of Khashimjan. The answer lies with the final part of the story, where the boy decides not to wear the Hat and become invisible anymore. In this part, Khashimjan understands that reaching the goals without any effort is not possible, even with the help of the Magic Hat. Still he did not give up his desire to become a professional, and chose to work hard to make the dream come true. This way, the main hero demonstrates that he has undergone significant changes in his views and attitude.

One more point deserving notion is that in majority of such cases as described above the main hero after the transformations becomes able to see, to spy the lives of others. Becomes familiar with their secrets and hidden lives. And usually such information is of a great interest for him. For instance, in Apuleius' "The Golden Ass" Lucius wishes to know others' secrets, so by transforming into ass he reaches his goal. The plans of Griffin in "The Invisible Man" by Wells are also related to the use of invisibility for gaining domination while staying unnoticed. Kafka's Gregor Samsa unwillingly heard a lot of information that would have remained unknown to him if he did not transform into an insect. Even Raphael de Valentin in "The Wild Ass's Skin" by Honore de Balzac, spied in the bedroom of Foedorato learn her secret. Khashimjan in "The Magic Hat" also obviously enjoyed listening and seeing others' secrets. On this topic Bakhtin states as follows: "The significance of legal-criminal categories in the novel, and the variousways they are used - as specific forms for uncovering and making private life public - is an interesting and important problem in the history of the novel…For the spying and eavesdropping on private life, the position of Lucius the Assis most advantageous". Also he noted that: "They pass through the everyday sphere of private life but do not participateinternally in it. These rogues are spies, charlatans and parasites, spying andeavesdropping on all the cynical aspects of private life".

Conclusion

As conclusion it must be noted that the ideas of Mikhail Bakhtin about the transformation motifs, depicted through the analysis of ancient literature, can be applied to modern works, as it was shown on the example of Khudoyberdi Tukhtaboyev's "The Magic Hat" book. The concept introduced by Bakhtin allowed to compare the seemingly unrelated works – the masterpiece of Apuleiuswith the story of Khudoyberdi Tukhtaboyev – and find strong correlation. From all mentioned above it becomes clear that the concept of Mikhail Bakhtin about the steps in transformation motif are quite universal and can be used to separate parts of many works created in genre of science fiction or fairy tale.Although in his research Bakhtin mostly focused on ancient literature, the overall ideas, as it can be seen by reference to Kafka and Wells, are of a common nature for many other works of different periods.

So as it can be seen on the basis of above, Mikhail Bakhtin's ideas relating to the transformation motifs are can be easily used to classify the events of the Khudoyberdi Tukhtaboyev's popular book "The Magic Hat". Such classification allows to deeper understand the structure of the work and to analyze the main hero's life from the position of applied transformation motifs. Although, basically "The Magic Hat" is a novel for children, but the message it carries has much deeper roots if examined from the position of Mikhail Bakhtin's views.

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IMPORTANT ASPECTS OF PROFESSIONAL DEVELOPMENT OF TEACHERS AND THE BENEFITS OF USING AN INTEGRATED SYSTEM

Abstract: one of the important tasks in the field of research is the development of professional qualities, which is a key factor in the effective implementation of professional activities, the successful acquisition of professional knowledge and skills. Professional qualities are one of the important factors in the success of pedagogical activity, they are purposefulness; perseverance; ability to focus; diligence; observation; development of pedagogical tact and pedagogical imagination; social activity; initiative; personal example; such as making a direct contribution to the further enrichment of universal and national values. The formation of professional qualities allows to ensure emotional unity with students, to create a communicative system of the lesson and a positive climate, as well as to successfully carry out pedagogical tasks.

Key words: professional qualities, knowledge, skills, pedagogical activity, pedagogical tact, communicative system, tasks.

Language: English

Citation: Kahhorova, S. S. (2020). Important aspects of professional development of teachers and the benefits of using an integrated system. ISJ Theoretical & Applied Science, 04 (84), 409-413.

Soi: http://s-o-i.org/1.1/TAS-04-84-71   Doi: https://dx.doi.org/10.15863/TAS.2020.04.84.71

Scopus ASCC: 3304.

Introduction

One of the most important aspects of the professional development of future teachers is the person's current work experience. In fact, work experience is defined as the sum of professional skills and competencies that result from professional practice. However, the lack of work experience of future professionals, especially future teachers, testifies to the fact that they have not yet tested their existing professional knowledge in practice, and do not have a clear idea of the real professional requirements. This impedes the content and methodological aspects of education, the definition of professional future plans, the creation of optimal practical conditions of the educational process based on individual capabilities. Therefore, the development and implementation of effective methodological aspects of the integration of theory and practice in the process of professional adaptation of future teachers leads to the formation of work experience in students, as well as an increase in the level of active approach.

II. Literature review

Researchers found that L.M. Mitina and O.V. In their research, Kuzmenkova formulated the concept of teacher professional development and its social explain important aspects and highlight a number of important factors that affect a teacher's professional training. In particular, one of the important factors influencing the process of professional adaptation of researchers, future teachers is the growth, formation, integration of professionally important personality traits and abilities, professional knowledge and skills, as well as their practical application in pedagogical work. while acknowledging that they need to find, but as a key factor - the intrinsic motivation and orientation of the individual to the pedagogical profession, which ensures successful performance in professional activities. They scientifically substantiate that the process of professional adaptation should be organized directly on the basis of the capabilities and needs of the individual.

III. Analysis

The full orientation of the level of professional knowledge, skills and abilities, professional (spiritual, personal and physical) opportunities and professional qualities of future teachers to the effectiveness of their work is a necessary condition for professional adaptation. In this process, the individuality of the individual is studied as one of the important criteria. Individuality (Latin individuum - indivisible, seed) - represents the unique uniqueness of the psyche of each person who carries out his activities as a subject of socio-historical cultural development.

1. One of the important features of the globalization process is determined by the improvement and development of the quality of the system of professional adaptation of future teachers on the basis of modern educational directions. At the same time, it is important to improve the content of the formation of professional flexibility of future teachers in accordance with modern requirements.

2. One of the most pressing issues is the modernization of the educational process in higher education institutions based on social requirements, democratic principles, as well as the qualification requirements of the production specialist.

3. One of the leading socio-psychological factors in the professional orientation of future teachers is their personal orientation and professional motivation, which accelerates the process of adaptation of students to the chosen field of activity.

4. Vocational training of future teachers is based on professional knowledge, skills, abilities and the necessary professional qualities. This justifies the need to increase the share of specialty subjects in the distribution of curriculum loads.

5. One of the important organizational and methodological conditions in the process of professional adaptation is the systematic organization of pedagogical practice and the creation of its methodological support.

6. The study and analysis of the current situation identified the need for a practical approach to the targeted use of innovative teaching technologies in the professional adaptation of future teachers.

Pedagogical Scholar V.A. Slasten's study of the formation of professional training of future teachers shows that high professionalism, i.e. the quality of education received on the objective factors of professional maturity, and the subjective factors on the ability of the individual, professional orientation, effective pedagogical tasks, introduces responsibility and expertise in solving.

There are also two categories of factors that affect the success of the process of professional adaptation of future teachers: subjective (internal) and objective (external). While the author connects the internal factors influencing the professional adaptation of the future specialist with his individual-psychological qualities, the objective factors suggest aspects related to the environment and educational conditions.

Innovative training is one of the criteria of professional training determined by the formation of an axiological, acmeological, creative, reflexive approach to pedagogical activity, the creation of an environment of creative cooperation in the educational process, the introduction of innovative technologies in the teaching process, active motivation for innovation, is considered.

Another important aspect of the process of professional adaptation of future teachers is the identification of a set of necessary conditions for the acquisition and full implementation of professional knowledge, skills and competencies in the above areas. Because a comfortable and goal-oriented pedagogical environment makes it easier to achieve the desired result in the process.

In his research, N.A. Muslimov emphasizes that the professional adaptation of a future teacher of vocational education is one of the important aspects of his professional formation, recognizing the following as important pedagogical conditions in this process:

- Material and technical conditions (availability of educational buildings, classrooms, a set of teaching aids, etc.);
- Educational and methodological conditions (state educational standards, curricula, study plans, etc.);
- Human resources (professors and teachers);
- Social and educational-technological environment;
- Consistent, continuous and systematic organization of organizational and educational activities.

Due to the specifics of the system of training of pedagogical specialists in higher education institutions, the study found that the provision of the following pedagogical psychological conditions will serve to improve the quality of professional training:

1. Informative-meaningful conditions. It is known that the content of education is a pre-designed system of professional knowledge, skills and abilities that must be mastered by the future specialist, which includes curricula, improved educational programs, lecture notes, educational-methodical complexes on the basis of educational technologies, scientific and educational-methodical, electronic textbooks, means of control: creative pedagogical tasks, situational issues, remote control, creative project work, course connected with specialization directions and project work has a special place.

2. Technological conditions. The purpose of the study was to develop and apply in practice the effective forms, methods and tools of professional adaptation of future teachers.

In the process of professional adaptation:
- problem-based learning;

- Game technologies (role-playing games, business games);

- training, video training,

- Problematic seminars;

- Solving and analyzing pedagogical problems;

- small group teaching, micro-lessons;

- creative research methods;

- Methods of designing lessons and educational activities;

- Special attention was paid to the development of methods for organizing and conducting self-training.

The technological basis of the professional adaptation of future teachers is theoretically justified; is based on the principles of a holistic approach to the content and organizational aspects of the educational process, systematization, taking into account the individuality and professional orientation of students in teaching.

3. Reflexive conditions. As a result of the created pedagogical conditions, special attention was paid to the creation of a reflexive environment (reflection, analysis, change, the level of self-assessment of the individual).

The content of the reflexive conditions for the professional adaptation of future teachers is defined as follows:

- development of active learning motivation;

- formation of creative skills;

- formation of pedagogical-psychological, methodical knowledge;

- professional self-awareness.

IV.Discussion

The results of the analysis show that pedagogical practice, independent learning, clubs, extracurricular activities, team activities, creative castings and other types of organizational activities are important tools for professional adaptation and development of students. In some studies, the authors limit themselves to listing the elements of the system, but do not disclose the purpose, method, and conditions under which the pedagogical process is used. As a result of our study of the basic concepts and basics of the systematic approach, one of the important features of a real being is the emergence of new qualities that are not specific to the objects of the initial period of interaction. was formed. It is a qualitatively new product - the emergence of integrity and system. The quality of a holistic system does not consist of the sum of its constituent qualities. The system is also characterized by new integral qualities that, in essence, represent its distinguishing properties. An integrated system actively influences the components it contains and modifies them to suit its nature. As a result, the initial starting parts undergo significant changes: in most cases, the previous ones lose their properties before they enter the system, their other features increase in importance, acquire new qualities,

as well as retained features quality and quantity change.

We can identify the main features of an integrated system.

1. The main feature of an integrated system is the existence of the system integral and the collective quality (or qualities) of its constituent components.

2. An integral feature of a holistic system is its components, since the system consists of them and cannot exist without them. However, components are not a collection of random objects. They are integrated with the system, which is exactly the structure of this system. A systematic approach is the study, design, and identification of the components of a system to ensure its proper functioning. The system-structural (practical, reasonable) approach involves considering the structural features of an object as a whole, divided into components over a given period of time.

3. An integrated system is a target system that seeks to achieve a specific goal. The goal arises in the system as one of the important factors that create it. However, the goal requires certain actions to be taken to achieve it. The actions that a system takes to achieve a goal in an environment constitute precisely its functions. Functions emerge as a way to achieve a goal. A system-functional approach to research and design in terms of the way a system behaves in an environment to achieve a goal.

4. No system is the same for all periods. He is absolute, not eternal, because the existence of contradictions is inherent in him as well. Every system not only functions, but also evolves; it has a beginning, it goes through a period of creation, it finds content and it develops. In systems theory, the lifetime of a system is one of its main descriptive features.

5. Research and design of a system in terms of its development over time is called a systematic approach.

6. Each system, in turn, is a component of higher metatism, just as it is a component of lower metatism. In other words, no system is isolated from others, but interacts with various other systemic and non-systemic associations with many connections. The system moves and develops in an environment that is relatively external to it, and is connected to it through many communications. It is called the system-communicative approach to the study of the system in terms of other systemic and non-systemic associations that exist in relation to it.

7. The system is constantly exposed to influences aimed at disrupting its stability. This effect is primarily due to the contradictions that exist within any system. However, there are also negative externalities, such as lack of resources and severe restrictions. Nevertheless, the system lives and thrives. This means that along with the specific set of components, the internal structure, etc., there are other factors that make up the system and protect the system. These factors that ensure the viability of the

system are called governance. It is called a systemic-organizational approach to the study and design of systems in terms of their purposeful functioning in the conditions of internal and external influences aimed at disrupting its stability.

8. System management cannot be imagined without the transmission, reception, storage and processing of information. Information is a way for the components of a system to communicate with each other and with the external environment of the system. In this sense, it is clear that the essence of systematization cannot be revealed without studying its informative aspects.

We think of many infinite interactions between a system and the external environment as a single inbound and one outbound relationship, depending on their importance in a given situation. During the incoming and outgoing communication between the system and the environment, there is an exchange associated with the transmission of material, energy, or information elements.

The study of the relationship between the system and the external environment has shown that the environment supplies resources to the system, and receives and consumes the final result of the activity from the system. It is important to note that the results of the system in principle can not be created in the environment (otherwise there is no need to isolate the system from the environment). The system is needed by the environment as a source of self-sufficiency.

The essence of professional adaptation is to develop the skills of mastering - understanding - shaping - adapting. In other words, the external environment is the source of the images that the individual creates by interacting with the environment. This means that the existence of a system is created by the unmet needs of the individual in the process of self-development, or in other words, the system is created to solve a problematic situation in the external environment.

It is well-known that self-development is the process by which a person becomes a subject of his

life. Subjectivity is an active independent state and status in human life. It is inherent in human beings from birth, and its first psychological manifestation is the resurrection of a child. With age, it changes its form, that is, a person develops moral, aesthetic, social and psychological motivations, and the person becomes less self-aware, behavioral and active. becomes an ect and discovers a personal 'I'. In this process, the educator acts as a designer of the personal development environment. That is, in the process of personal development, the environment between the teacher and the pupils becomes a specific meaningful form, where the communication environment is formed as a mechanism for the formation of the inner world of the future teacher.

Unfortunately, in most cases, the development of a person as a subject (goal, content) for educational activities is almost not considered. There is a perception that this process can take place during extracurricular activities. These views are incorrect, of course, because the involvement of students in the universal culture and experience, which is the essence of the educational process for the personal development of the child, is also a function of education. Without addressing these issues, education will not provide comprehensive information about the individual.

V.Conclusion

The source of a person's life and professional activity is embodied in his individuality. An individual with a developed individuality relies entirely on his own strength, and thus manifests himself as a free and independent person. A comparative look at the individual and the individual makes it possible to define the relationship between man and society (community and man).

So, in conclusion, the individuality, professional qualities, knowledge, skills and competencies of the individual serve as one of the important factors in the professional adaptation of future teachers.

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QR – Issue   QR – Article

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HISTORICAL REALITY CONCEPTS

Abstract: *The article reveals the content and defines the scope of the concept of "historical reality", which is used in historical science, philosophy of history and ontological studies of the existence of mankind in time. The idea that this concept, implying the development of mankind as a single organic whole, is single in its volume is substantiated. The scientific novelty of the research lies in the application of formal logic to characterize this ultimate philosophical concept.*

Key words: *historical reality; content of the concept; ontology; being; time; essence.*
Language: *English*
Citation: Sadullaev, D. B. (2020). Historical reality concepts. *ISJ Theoretical & Applied Science, 04 (84),* 414-419.

Soi: http://s-o-i.org/1.1/TAS-04-84-72   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.72
Scopus ASCC: 1202.

Introduction

Historical reality is the world of people and their creations. If we list the main features of the human world, that is, deductively reveal the meanings hidden in this laconic definition, we can get a more detailed definition - a complex, but convenient for working, detailed articulation of the content of this concept. Historical reality is humanity, existing and changing, developing in time, as a special spiritual and physical world of life together and the activities of people, in the totality of specific conditions and facts of its existence. This definition is the result of reflection, the problem of which was an attempt to understand what we are talking about when we talk about historical reality. Defining this concept with precisely these meanings, we proceed from the fact that "reality" is that which is, something that actually exists (in the most general sense, everything that exists), and "history is the being of humanity in time" [13, p. 59, 70]. In this definition, the term "humanity" means reality, that is, that which exists, that which is being discussed, and the rest of the words reveal signs or properties - characteristics of the existence of mankind, that is, criteria for the historicity of this reality.

In everyday thinking, in the mass consciousness, this is an indefinite concept with an unclear content and fuzzy volume, because it can be attributed to an indefinitely large number of signs,and each person in his own way understands the essence of the historical and the meaning of the word "reality". The certainty of this concept can be achieved by defining the meanings of its two terms and by agreeing on what it is applied to. Good questions that should be asked when drawing up its logical characteristics: how the content and scope of a concept can be determined and how they should be determined, by what methods and procedures, but at the same time so as not to be random and arbitrary, but logically valid, universal and necessary.

LITERATURE REVIEW

In formal logic, "a concept is considered defined when it has a clear content and a clear volume ", while" the content of a concept is the most important signs of the object that it expresses, and volume is the number of objects covered by it "[4, p. 20]. Work on the logical characterization of the concept of "historical reality" shows that the certainty of this concept depends on the concept within which this concept is used.According to idealistic concepts, historical reality is, first of all, spiritual reality, in which the spirit develops in time, accumulating and processing all its past experiences and conditions as the cumulative experience and knowledge of all mankind. Spirit exists and acts primarily as a human

mind. Such an interpretation of the historical we have in the writings of Hegel, Berdyaev, Croce, Kollingwood, Rickert, Dilthey and other thinkers [2; 3; 8;9; 12]. Idealistic concepts justified such characteristics of the historical as spirituality (rationality), the reduction of the historical to the human, for only man has reason. So, Hegel wrote that "reason is a substance" and "reason rules and rules the world" [3, p. 486, 491]. Accordingly, world history is a work of creative mind, "world history takes place in the spiritual sphere" and, in essence, it is "the development of the mind-consciousness of its freedom" [Ibid., P. 492, 535]. Hegel interpreted the correlation of natural and spiritual as follows: "the world embraces the physical and mental nature; physical nature also plays a role in world history ... But the spirit and the course of its development are substantial "[Ibid., p. 492]. A concrete expression of the spirit of the people is the state, which is "the form that is the full realization of the spirit in being" [Ibid.]. From this, a conclusion was drawn about the "prehistoric" past of the peoples that had elapsed before the creation of states — this past was carried beyond the bounds of history. "What precedes state life is prehistoric," wrote Hegel [Ibid., P. 577]. The general thought expressing Hegel's concept was the statement that "world history is generally a manifestation of the spirit in time" [Ibid., P. 543].

The materialist understanding of history, developed in the teachings of Karl Marx, Friedrich Engels and their followers, presents history as a natural-historical process, part of the development of the natural world, the basis of which is the production of material goods to satisfy human needs [15, p. 19]. Marx and Engels wrote that "this understanding of history is based on the material production of direct life, to consider the actual process of production and to understand the form of communication associated with this mode of production - that is, civil society at its various levels - as the basis of all history; then it is necessary to depict the activities of civil society in the field of public life, and also to explain from it all the various theoretical products and forms of consciousness, religion, philosophy, morality, etc. " [10, p. 418]. The ontological prerequisite for such an understanding was the thesis that "consciousness can never be anything other than conscious being, and the being of people is the real process of their life" [Ibid., P. 402]. From this it was dogmatically, arbitrarily inferred that "consciousness does not determine life, but life determines consciousness" [Ibid., P. 403]. "This understanding of history ... does not explain practice from ideas, but explains ideological formations from material practice" [Ibid., P. 418]. Thus, we see that, denying the substantiality of spirit (consciousness), the materialistic concept of the historical process does not reject spirituality (rationality) and, therefore, humanity and sociality as characteristics of the historical, but, showing the dependence of consciousness on nature, also considers them as the most important components and signs of the historical world.

Marx and Engels believed that man and nature are not two "things" that are separate from each other and cannot be considered opposites; "" The unity of man with nature "has always taken place in industry" [Ibid., P. 426]. "We know only one single science, the science of history. History can be viewed from two sides, it can be divided into the history of nature and the history of people. However, both of these parties are inextricably linked; as long as people exist, the history of nature and the history of people mutually determine each other "[Ibid., p. 391-392].Some kind of habitual duality in understanding the essence of the historical is present in the works of the classics of Marxism. On the one hand, in the broad sense of the word, history means the process of movement in time, the process of change and formation, passing through various qualitative stages. For example, Engels writes: "And animals have a history, namely the history of their origin and gradual development to their current state" [15, p. 18]. From these words it follows that Engels considered volatility and development of the essential characteristics of historicity. According to this understanding, everything that does not change and does not develop is not historical. Everything that changes and abides in becoming is historical, and, so to speak, as material nature develops, it also belongs to the world of history. On the other hand, Marx and Engels narrow the historical world to the development of human society, which we see in passages such as "together with man we enter the field of history" [Ibid], "Civil society is the true center and arena of history "[10, p. 416], "History is nothing but a successive change of individual generations" [Ibid., P. 428].

ANALYSIS

Analysis of existing concepts (both articulated quite clearly in different versions of the ontological philosophy of history, and often implicit, implied in the sciencesabout culture and serving as the basis of scientific works on history) allows us to distinguish such general and gradually established in modern culture signs, criteria of historicity, such as humanity (correlation with a person, a person is a central element, an atom of history; the world of history is the world of man), sociality (history does not study a lonely person, but the diverse phenomena of people's life together, their connections and relationships), spirituality (certainty, constitutionality by consciousness, reason, ideas; immateriality of a number of components of this real notion), variability (processuality, formation, development), temporality, concreteness, individuality and belonging to the past. This well-established set of signs of historicity (or historical) can be obtained by referring to texts in which the word "history" is present - to historical

works, scientific works on history, sociology and cultural theory, as well as works on epistemology and ontological philosophy of history and agreed to call its existence history, then historicity for us is determined by all that is characteristic of a joint life of people. From here rationality, spirituality, freedom, variability, development and temporality are deduced. Concreteness and individuality are characteristics of historicity based on the initial meanings of the word history in the sense of "information" about something: information must be specific so as not to confuse this object during "inquiry" with another object of this kind. Taking into account the scientifically obtained characteristics of the object and the conventional use of its name, we understand why we now use the phrase "historical reality" to denote the world of people and have the right to use this concept not as the fruit of an individual arbitrary fantasy, understandable only to the author, but as a philosophical concept that exists in the culture of mankind and has the epistemological foundation of universality and necessity.

The attribute of being related to the past as a characteristic of the historical essence is not ontologically correct and requires reservations. Since history is being made in the present with a view to the future, so far the historical exists not only as a human past, but also as a present entering the future, and is thus an organically integral fabric of being in which causal threads of events connect this reality into an organically integrated whole. Therefore, historical does not coincide only with the past and historical is not our past alone, but we constantly live historically. To be historical does not mean to be only the past, because historical events do not occur in the past,but in the present, and they are guided by dreams, goals and plans for the future.

You can see that the meaning of the concept of "historical reality" in many respects coincides with the meaning of the concepts of "social reality" and "society". These concepts are often rightly used as synonyms. They denote the same object - society in its entirety. The difference in values, apparently, consists in the fact that in the concepts of "social reality", "society" the static of elements and their interconnections in the world of people is more often thought, moreover, it is thought abstractly from concrete facts, and in the concept of "historical reality" we emphasize the variability of this world, individuality and originality of its constituent elements in all the specifics of their existence. How do concepts come about? Usually we initially empirically perceive homogeneous objects and in contemplation we notice their similarity, the common that is inherent in all of them. So, through consideration of many particular cases of a certain phenomenon, we inductively come to the realization of common features for all these isolated cases and get a general concept, which we give a name. So we make up the concepts of "lightning", "tree", "house", "man",

"book", "tool", "whiteness", "courage", "road", etc. We see these things, notice that some of them are similar to each other, and divide them into groups according to common attributes. But do we come to the concept of historical reality? No.

Firstly, it is not a material thing, secondly, it is not given to us empirically all at once in its entirety, thirdly, it is not one phenomenon in a series of similar phenomena, we do not have a number, since the historical reality in its integrity is a single object, and, fourthly, it is so complex, multi-layered and mobile that it is impossible and inconceivable to have a complete synthetic "photographic" representation about her as an idea of a lemon or an apple. Therefore, the concept of historical reality is not created by the inductive way of comparing and generalizing the data of experience. However, one cannot think that this is a completely a priori concept, arbitrarily coined by an idle mind and not having a referent outside the bounds of pure reason. The joint life of people is an objective fact of world existence, along with the existence of nature, and not someone's idle fiction [7, p. ten]. The world of people is both spiritual and material at the same time. It is like an ontological crossroads of two worlds - matter and spirit (consciousness with its ideas). Material nature serves as a habitat and object of transformation for the spirit, and the external physical side of human activity is a manifestation and expression of thoughts. These are the physical expressions of our thoughts and relationships that we observe in experience. Empirical intersubjective observation also contains texts - material carriers and spokesmen of the spirit. We have the experience of observing human activities, experiencing historical events and situations, the experience of conversation (direct exchange of thoughts and feelings), cooperation, joint activities, consent and understanding. Therefore, we not only think about historical reality, but also experience it, and when we comprehend it, our mind remains in the reliable field of processing experience data, which makes it possible to avoid arbitrariness and dogmatism in the formation of the concept of it [5, p. 54, 89, 90, 138, 333, 481].

Nevertheless, historical reality is not so much felt by the senses as it is comprehended by reason, since it is "mostly immaterial" [13, p. 72]. Relations of people: friendship, love, camaraderie - this is something immaterial. In addition to physical things and processes, the components that form historical reality are non-material, and therefore invisible thoughts, feelings, values, interests, needs, desires and passions of people, ideas as patterns and projects of activity that govern principles and norms , state laws, human ties and relationships, large and small social groups, public institutions and institutions - all that is called the spirit and its forms in the idealistic concepts of history discussed above. Historical reality is not an isolated thing, like an ax or a pencil, perceived in

experience as some single given integrity. Moreover, we do not perceive a number of such holistic objects, with the help of which we could compare, compare and determine what is common to them. L. A. Mikeshina rightly notes that "such social entities as society or economics, capitalism or a nation, language or legislative systems, we cannot observe and sensually perceive their signs and properties - they are not given in the form of" natural units ", Which are perceived by our feelings as similar" [11, p. 219]. The structure that they have, and the order that they form and in which they can be related to each other, are determined not so much by the physical world as by the intelligible meanings of human relations and theoretical constructions. Therefore, the concepts of such objects are formed not by inductive generalization, but otherwise.

DISCUSSION

L. A. Mikeshin, examining the problem of the illogical formation of concepts on the examples of the works of E. Cassirer, F. Hayek, A. Schütz and J. Sörl, notes that often in the humanities and social sciences the concepts were not "deduced" by induction, in a generic way ", but" introduced "by imagination, common sense, intuitive hunch - hypostasis in various forms" [Ibid., p. 216]. So, for example, the concept of "republicanism", which arose at the beginning of the 18th century on the basis of "tension between the current political situation and the ideal that is possible in the future ... contains an important element - expectation; this concept refers to the future "[Ibid., p. 215], becoming his project. Many other humanitarian and social concepts, such as "communism", "liberalism", "democracy", "patriotism", "nationalism", "rule of law", "justice", "harmony", have had and have projective meaning , "Eternal peace", etc. They do not so much summarize in themselves already present signs of political or economic systems, but express social dreams, aspirations and ideals, regulate thinking and activity, and constitute historical reality. The concepts from the sphere of "practical reason" reflect not what is, but what should be, and are the result of not so much logical procedures of analysis and synthesis as expectations and design.

Using Kantian terminology, we can say that the concept of "historical reality" is not an empirical concept, it is a concept of reason - a synthetic unity of an object, obtained as a result of applying a priori principles of organizing material to existing ones and semantic data [5, p. 128, 129, 130, 282]. Material that expresses not the logical, but the actual volume of the concept of "historical reality" is immensely diverse, complex and large [12]. What images arise in the head when thinking about history? The ruins of the Parthenon and Roman antiquities, Egyptian pyramids and silent steppe mounds, ancient Indian temples, Chinese pagodas and the Great Wall of China, dense Germanic and Slavic forests and endless steppes of nomads, squares and streets of old cities filled with many-voiced homon, on which unfolded numerous voices dramas of life. There are many examples of such dramas: the wanderings of ancient Jews in the desert and the voyage of Christopher Columbus, the Greco-Persian wars, the campaigns of Alexander the Great, the Roman legions and hordes of Attila, Genghis Khan, Batu and Tamerlane, the great migration of peoples and the inconspicuous daily labor of farmers, shepherds, artisans and factory workers, crusades and popular uprisings, Napoleonic, world, civil and domestic wars, travels, great geographical discoveries and Reformation, the development of the Russian North, Siberia and America, economic and political reforms, scientific, social and cultural revolutions. We contemplate nations, classes, and estates; in this mass of people - peasants in homespun linen shirts and artisans in leather aprons, knights in armor and monks in robes, nobles in silk and furs and naked slaves in chains, poor artists, philosophers, poets and scientists, the bourgeoisie in cars and factory workers. We contemplate an endless string of faces.

The picture of world history is woven from the countless deeds of people, driven by intentions and certain meanings on the endless and diverse natural landscapes in the spiritual atmosphere of various religions, legal and moral norms, in the element of language, which is the "house of being" [14, p. 266]. If we look at the historical ideas in our thoughts, "then we will see a huge picture of changes and actions, infinitely diverse formations of peoples, states, individuals ... a general thought, a category, which first of all appears during this continuous change of individuals and peoples that exist for some time , and then disappear, is a change in general "[3, p. 543-544].

Reviewing all these specific and unique personalities, peoples, acts and events, we organize these objects, distributing them according to such structural subsystems of social reality as the personality system, society and culture, systematize the material according to the spheres of society: economic, political spiritual and social, by geographical location and chronological sequence of existence - by years, periods, eras, eras and centuries, by the methods of production that form socio-economic formations, and local civilizations. The limit to the systematization of all this obscure and heterogeneous material is the concept of historical reality as the most general thought that embraces all this. Introducing this ontologically and logically almost ultimate concept, we organize all the heterogeneous and vast empirical material and basic theoretical knowledge into one object, one construction that can be worked out theoretically and practically [5, p. 125].

In its scope, the concept of "historical reality", implying the integrity of mankind, is singular, because

"humanity" is a singular concept denoting only one object. Just as a person's hands and feet are parts of his body, and the simultaneous streams of summer rain on Sadova and Tverskaya in Moscow are not different rains, but parts of the same rain, the "historical reality of Russia of the 17th century" or "historical the reality of 18th-century France "is the essence of a part of one whole, and the relation of these objects is the relation of parts to the whole, and not the logical relation of species to a common genus. This understanding is obtained as a result of the awareness of the unity of mankind on one planet Earth, the integrity and integrity of historical reality, all of whose components ontologically interpenetrate each other. This gives reason to logically qualify the concept of historical reality as a unit in volume.

In carrying out the logical characterization of a concept, it is fundamentally important to take into account in what respect the object is thought. If this is not taken into account, then a violation of the law of identity and a sophisticated confusion of thought are possible, in which we will vaguely think about different things, using the same term [1, p. 213, 215]. You may notice that in one respect the concept of "historical reality" is singular in volume, and in another respect it is general. We can limit it to the introduction of additional features, say, an indication of a place in space or the lifetime of an object. It may turn out that the general generic concept of "historical reality" includes such individual species concepts as the "historical reality of Russia of the 17th century" or the "historical reality of France of the 18th century", or general species concepts of the type "historical military reality" time (the period of restoration of the national economy, the period of globalization, the Bronze Age or the Hellenistic era). " But here it is necessary to take into account the fact that in all such concepts, historical reality is conceived not in relation to the whole of humanity as to integrity, but in relation to any part or time of existence with specific conditions of a certain chronological period. In this case, the determination of the subject of judgment occurs by adding those values that were absent in the definition of historical reality as the whole of humanity, existing in time. If we introduce the circumstances of place and time, as well as any circumstances in general, then we begin to think of historical reality not as humanity, but rather as a specific set of conditions characteristic of the existence of a particular society (people) at a certain time, in a certain place (country), in certain circumstances. In fact, there is a different semantic filling of the concept and a typical case of paralogism with a violation of the law of identity is visible, when, using the same word, we think about different things: there are several objects, and the term is one.

To give an analogy, we give simple examples: the concept of "writer Leo Tolstoy" is a single concept that denotes only one object, but we can think of it as a young and beginner, or as a mature author. Or the "Russian people" as a historical social integrity - this is one object, and the long-suffering or prosperous Russian people denote the various states of this single object, and, in fact, we think here not so much of the people themselves as of their characteristics - the states or situations that they are experiencing. At the same time, the speech stereotype hides the substitution of the meaning of the concept from the mind, and formally we can consider that when we add features that limit the volume of features, we get the kind of concepts that come under the same gender, although in reality we think about different things: substance and -distances, about essence and accidents, that is, about the people, as about the substance and condition in which the people are.

CONCLUSION

Thus, the work on the logical characteristic of the concept of "historical reality" shows that it is a unit in volume concept whose content is determined by such signs, historical criteria as correlation with a person, sociality, spirituality, variability, temporality, development, concreteness and individuality , reference to the past. The synthesis of these signs gives a definition according to which historical reality is humanity, existing and changing, developing in time as a special spiritual and physical world of life together and human activity, in the totality of specific conditions and facts of its existence. The certainty of this concept is a theoretical product of the conceptual approach within which this concept is conceived.

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AN ANALYSIS OF ARTISTIC AESTHETICS IN OSCAR WILDE'S PORTRAIT OF DORIAN GRAY

Abstract: *This article analyzes the artistic aesthetics in the Portrait of Dorian gray by Oscar Wilde.*
Key words: *Dorian gray, artistic, Portrait.*
Language: *English*
Citation: Salomova, M. Z. (2020). An analysis of artistic aesthetics in oscar wilde's portrait of Dorian Gray. *ISJ Theoretical & Applied Science, 04 (84),* 420-423.
Soi: http://s-o-i.org/1.1/TAS-04-84-73   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.73
Scopus ASCC: 1208.

Introduction

Portrait of Dorian Gray is the author's only work in the novel genre, in which Wilde's talent is fully expressed. This work is connected with art and his life. Throughout his career, he has been famous for his stories, in which only goodness reigns and ends in goodness. Unlike the stories of Oscar Wilde, he decided to create a work that would show the ugliness of the inner world of man. His work is The Portrait of Dorian Gray. Oscar Wilde's novel Portrait of Dorian Gray was written in 1891 and was highly regarded by literary critics and readers.

Literature Review.

His work is The Portrait of Dorian Gray. Oscar Wilde's novel Portrait of Dorian Gray was written in 1891 and was highly regarded by literary critics and readers. However, critics of the time criticized it as corrupt and poisoned the minds of readers. The work sheds light on the experiences of Dorian Gray and his life. Through this work, Oscar Wilde vividly illustrates the psyche of people who are unable to fight the evil forces living within them and the consequences of this. Oscar Wilde writes about this work:

"Every excess must be punished and reality cannot be excaped." is also one of the most important problems, and every reader should draw the necessary conclusions from this work. The following points from the work are also proof of our point. "The horrible, corrupting picture could be seen as a symbol of the immorality and bad conscience of the victorian middle class".

These comments make Dorian's portrait a symbol of how horrible and frightening the Victorian middle class was. Ozod Sharafidinnov's translation of the novel into Uzbek was another important step in promoting the work of the English writer among Uzbek readers.

Analysis.

Aesthetics is one of the oldest concepts. Also, the aesthetic movement in Europe began in France in the late nineteenth century. This movement was manifested as a movement against materialism and the bourgeoisie. The essence of this movement is the concept of "beauty within beauty" and puts beauty at the forefront. The greatest representative of aesthetics in England was Walter Peter, whose works were highly revealing of aesthetics. The art of aesthetics also began to be used in English literature in the 19th century. The essence of the idea of aesthetics dates back to the 1860s. However, this idea did not gain popularity until 1880, and very few artists wrote on the basis of this idea. The idea of aesthetics is derived from the French term "fin de siècle" or "end of the century" means the beginning.

That is, the beginning of a new era in England marked the end of the Victorian era and the rise of new aesthetic traditions. In particular, Oscar Wilde's contemporaries, Walter Pater, Dante Gabriel Rosetti, and Algern's Charles, created the idea of aesthetics in

Clarivate Analytics indexed

a few works. Poetry was also the main focus of aesthetics at that time, because the glorification of beauty played a key role in poetry. Romanticism The first half of the eighteenth century, which originated in European and American literature and art in the nineteenth century and became widespread around the world, was also called decadentism. Unlike other arts, aesthetics did not criticize society. As for the concept of neo-romanticism, neo-romanticism promotes beauty and spiritual wealth. Aesthetics is also the transfer of content and idealism in art to external forms, putting them aside.

Apart from England, writers from other countries also mastered this art form in the 19th century. Aesthetics, therefore, its history spans two and a half to three thousand years. However, it received its current name in the XVIII century. Until then, the views on beauty and art, which were the main problems of this science, were reflected in pamphlets, works on philosophy and theology on various types of art.

It should be noted that in the tales of Oscar Wilde, especially in the tales of "Selfish hero and happy prince," there is exemplary wisdom. The famous English writer Oscar Wilde's fairy tales are interesting stories, and the interesting stories behind them attract both children and adults.

Although Oscar Wilde's portrait of Dorian Gray was written in 1891, it has aroused great interest among literary critics and readers. Ozod Sharafidinnov's translation of the novel into Uzbek was another important step in promoting the work of the English writer among Uzbek readers.

Dorian Gray's portrait is the author's only work in the novel genre, in which Wilde's talent is fully expressed. This work is connected with art and his life. Throughout his career, he has been famous for his stories, in which only goodness reigns and ends in goodness. Unlike the stories of Oscar Wilde, he decided to create a work that would show the ugliness of the inner world of man. This is the only work by Oscar Wilde based on the idea of aesthetics. However, critics of the time criticized it as corrupt and poisoned the minds of readers. The work sheds light on the experiences of Dorian Gray and his life. Through this work, Oscar Wilde vividly illustrates the psyche of people who are unable to fight the evil forces living within them and the consequences of this.

Discussion.

The work was completed in just three weeks as a result of Oscar Wilde's one-man pledge. (The hostage-taker told the writer that he could never write a novel.) With the publication of the work, the author began to be accused of immorality. Wilde then responds to the criticism with a wise phrase in the preface:

"There are no moral or immoral books. Only good or bad books can be written. Tomom-vassal. " he answers. Before analyzing the work, it would be useful to talk about its characters. The protagonists of the play: Dorian Gray is the protagonist of the play, a man who falls under the influence of the beautiful Lord Henry and causes his own destruction. Basil Halward is a smart, thoughtful man who drew Dorian's beauty and painted her portrait. The portrait of Dorian Gray is one of his horn works.

Lord Henry Woftonn is an aristocrat who envies the beauty of Dorian, Basil's elevator friend. Sibl Ven is a talented actress and singer from a beautiful but poor family, Dorian's lover. His love for Dorian extinguishes his interest in his profession. Dorian kills himself when he realizes he doesn't love her anymore. Lord Henry likens her to Ophelia in Hamlet. James Ven- sible's brother, a swimmer living in Australia. Dorian tries to protect him, believing he will harm his brother, and tries to kill Dorian after the assassination of Sibl, but the hunter accidentally shoots James. As Oscar Wilde pointed out, if a work of art is controversial, then it has something allanechuk complex and important. But when taken seriously, the novel seems to be the first time that critics have discovered the beauty of Dorian as he looks at the portrait, and from that moment on, under the influence of Lord Henry, Dorian begins to turn into another Dorian.

"*Lord Genri looked at him . Yes, he was certainly wonderfully handsome, with his finely- curved scarlet lips, his frank blue eyes, his crisp gold hair. There was something in his face that made one trust him at once. All the conder off youth was there, as well as all youth passionate purity. One felt that he had kept himself unstopped from the world. No wonder Basil Hallword worshipped him. He was made to be worshipped*".

It creates ambition, the desire to be young for life. How sad! I'm getting old, I'm going to be a disgusting ugly person, and my picture will always be young. He will never be older than he is today iyun. Oh I wish it was the other way around? This is a picture of me as I get older and I will stay forever. I even give my life for it! While wishing for these intentions, another fantasy world appeared in him, and the desire to be eternally young led him to selfishness and ambition. The artist Holloward also felt this. Pointing to the portrait as they leave: I reply that I will stay next to the real Dorian.

In conclusion, for the artist Holloward, the portrait he worked on showed his inner world. Dorian Gray was not really a bad person, he was easily influenced by Lord Henry due to his inexperience and lack of opinion. Every time Dorian tried to change, when he said he would act according to his conscience, he would fall into his own trap under the influence of Lord Henry, and again he would do foolish things.

The picture of Dorian's change of heart begins with Sibila Wayne's day of cruelty: the disgust looked mixed. There is always something funny in the pain of a person who has lost his love. Both Sibila's words and

her tears made Dorian look very stupid and upset her. " It is clear from these lines that Dorian's psyche had changed, that Sibyl Weil's true pure love had been despised, and that such vices as arrogance and selfishness had awakened in his heart. The changes in his heart, in his inner world, began to be reflected in his portrait, which can be seen in the following passage from the work:

"So I have murdered Sibly Vane " said Dorian Gray, half to himself,- murdered her as certainly as if I had cut her little throat with a knife. And the roses are not less lovely for all that. I am to dine with you, and then go on to the opera, and sup somewhere, I suppose, afterwards. How extraordinary dramatic life is! If I had read all this in a book, Harry, I think I shouldhave wept over it. Somehow, now that it has happened actually, and to me, it seems far too wonderful for tears."

The secret of his life is sealed in the portrait. The portrait can be made public at any time. The portrait taught him to love his own beauty, and if this portrait taught him to hate himself a little, no matter how he looked at the picture. Dorian sees his heart in the portrait and tries not to sin. This portrait has since served as his conscience. The portrait helps Dorian realize that he was treated unfairly because he was more cruel than Sibyl Wayne. At this point, the portrait detail serves as a symbol of conscience, a symbol of decay, a proof that a person can destroy a little soul.

After the changes in the portrait, Dorian tries to act conscientiously. This can be seen from his answer to Lord Henry:

"Yes Mr. Gray, the gods have been good to you. But what the gods give they quickly take away. You have only a few years in which really live. When your youth goes, your beauty will ga with it, and then you will suddenly discover that there are no triumphs that the memory of your past will make more bitter than defeats every month as it wanes brings you nearer to something dreadful. Time is jealous of you, and wars against your lilies and your roses. You will become sallow, and hollow cheeked, and dull-eyed. You will suffer horribly."

Concluding from the above lines, it can be said that the portrait is a detail of the human spirit. As soon as every event in Dorian's life takes place, their message reaches the portrait. The portrait does not reflect the actions of the living Dorian, but the changes in his psyche and heart. The seal of every

misdemeanor that Dorian committed as a homicide is photographed. Gradually, the picture becomes incredibly ugly. The portrait is a magical mirror for Dorian. He once saw his true face in this mirror for the first time, and now he sees his heart.

"There was the madness of pride in every word he uttered. He stamped his foot upon the ground in his boyish insolent manner. He felt a terrible joy at the thought that someone else was to share his secret, and that the man who had painted the portrait that was the origin of all his shame was to be burdened for the rest of his life with the hideous memory of what he had done."

One of the visual aids that helps to visualize literary heroes clearly is their portrait. A portrait is a depiction of a literary hero's appearance, appearance, clothing, behavior, demeanor, etc. in works of art, depicting members such as the face, eyes, eyebrows, lips, and nose in the creation of a creative portrait. not only pays great attention to activities related to the human psyche, such as posture, hand, head movements, tone and speed of speech, laughter, crying (mimicry in these situations).

There are two sides to an artistic portrait: the external appearance of the image and its inner individual-psychological image. This kind of classification is, of course, conditional, and in both cases the writer tries to penetrate the psyche, the character of the protagonist. In particular, Dorian Gray Portrait illuminates a person's inner world through his appearance, but it is also important to never judge a person by his appearance. Through this work, Oscar Wilde illuminates the vices of man's inner experiences, such as selfishness and arrogance, and raises one of the most pressing issues of his time, not only at that time, but also today.

Conclusion.

In short, no matter what genre or artistic idea each work is written in, it is not only the work of the author, the product of the work of the creator, but also the reflection of the thoughts of thousands of readers, or the life of society. is one of the factors that expands its sphere of influence for, and certainly encourages goodness. At the heart of every work of art is a great idea, an indescribably high skill, and again, there is a magic that attracts the reader's attention. The artists, who are engaged in artistic creation and decorate their works with high skill, have always aimed to show their unique creations to the fans.

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THEORETICAL ASPECTS OF STUDYING THE PSYCHOLOGICAL PREPAREDNESS OF TEACHERS TO INNOVATIVE ACTIVITY

Abstract: The article deals with the theoretical aspects of the study of psychological preparedness of teachers to innovative activity It analyzes the psycho-pedagogical works devoted to the study of the given phenomenon and makes an attempt to single out the structure of psychological preparedness of teachers to innovative activity, which will make it possible to define and work out psycho-pedagogical technologies of its formation in practical teachers.Also touched upon are the concepts of the level of pedagogical activity that requires a restructuring of the motivational sphere of the teacher's personality, his value orientations, goals, attitudes, hierarchy of external and internal incentives, orientation, claims, and interests. In this regard, readiness for innovative activity is considered as a necessary universal quality of a teacher, the main condition for effective professional activity in a high tech innovative society.

Key words: preparedness; psychological preparedness; structure of psychological preparedness to innovative activity; innovative activity.

Language: English

Citation: Kurbanov, I. H. (2020). Theoretical aspects of studying the psychological preparedness of teachers to innovative activity. *ISJ Theoretical & Applied Science, 04 (84),* 424-427.

Soi: http://s-o-i.org/1.1/TAS-04-84-74   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.74
Scopus ASCC: 3304.

Introduction

Taking into account the circumstances of rapid and constant changes in the educational system of Uzbekistan (the formation of universal educational activities, changing the requirements for the unified state examination), new requirements are being put forward for the personality and professional competence of the teacher, prompting him to actively and continuously participate in the innovative activity. There is no doubt that successful pedagogical activity is based not only on innovative approaches, but also on the teacher's willingness to take part in innovative pedagogical work. At the same time, the pace of changes in the education system does not allow the teacher to consciously and timely reorganize his knowledge, skills, learn new professional experience, the result of which is the "innovative fatigue" of the teacher, which manifests itself in the rejection of innovation or in imitation of innovation activities. All this actualizes the problem of supporting innovative activities, as well as developing and maintaining

psychological readiness for innovative activities in an educational institution. It seems to us important to develop programs for the formation of psychological readiness for innovation.

2. LITERATURE REVIEW

The phenomenon of "readiness for innovative activity" is widely represented in psychological and pedagogical research (T.AVaiser, V. And Dolgova, M. Yu. Elagin, O. M. Krasnoryadtseva, I. E. Piskareva, E. A Podvigina, V. A. Slastenin, E. N. Frantseva, etc.).

Currently, in the psychological and ¬ pedagogical literature, the problem of psychological readiness for activity is considered from the perspective of functional and personal approaches. In the framework of the functional approach, psychological readiness is understood in its relationship with the psychological functions necessary to achieve high results in activities (E. S. Kuzmin, V. A. Yadov). In the personal approach,

psychological readiness is studied in connection with personal prerequisites for successful activity (K. M. Durai-Novakova. M. I. Dyachenko and L. A. Kandybovich). In the studies of M.I. Dyachenko and L.A. Kandybovich, the dynamic structure of psychological readiness was determined, including the following components:

1) awareness of their needs, the requirements of society, the team or the task;

2) awareness of goals, the solution of which will satisfy the needs of the task;

comprehension and assessment of the conditions of activity, actualization of experience that is associated with solving problems in the past and fulfilling similar requirements;

1. ANALYSIS

Based on the analysis of psychological and pedagogical literature, we define the psychological readiness for innovative activity as a complex holistic process of the personality, characterized by the teacher's confidence in his abilities, the ability to mobilize his personal and professional resources in the situation of innovative activity emotional uplift, activity in achieving set goals and objectives. In the presented pedagogical research, the structure of readiness for innovative activity, its technological and personal sides are systematically integrated, which ensures the necessary integrity of the image of a teacher-innovator. The level of development of personality structures directly or indirectly determines the quality of the operational components of innovative activity, since it is the teacher's attitude to innovations, awareness of their importance that determines the success of the implementation of innovations in the practice of work of general educational institutions.

The factors of manifestation of readiness for innovative activity by V. I. Dolgov include activity, orientation, individual and psychological characteristics, individual style of activity, setting, self-concept, value orientations and relationships, the ability to creative activity, innovative important personality qualities, professionalism, risk preparedness.

Considering the structure of the teacher's readiness for innovation, we relied on the approach of V. A. Slastenin and L. S. Podymova, according to which the teacher's innovative activity has four components: motivational, creative, technological and reflective. [4, p. 152].

Having analyzed the existing approaches to the study of psychological readiness for innovative activity and its components, taking into account the possibilities of psychological support of its development, we consider it appropriate to highlight the following components of psychological readiness for innovative activity:

1) motivational component - attitude to pedagogical innovations, as well as motivational readiness of a teacher to improve his own professional activity;

2) the cognitive component - the knowledge and ideas of the teacher about innovative technologies and about their own innovative potential;

3) volitional component - the ability to arbitrarily control one's actions, feelings, behavior in conditions of innovative activity;

4) reflective-evaluative component - self-control and reflexivity, necessary for the teacher to reflect on the experience of their own innovative activities;

5) personal qualities that contribute to the inclusion of a teacher in innovative activity (tolerance to uncertainty, intellectual lability, stress tolerance, mobility, creativity) [5, p. 20-23].

4. DISCUSSION

On the basis of experience and assessment of the conditions Kryukova EM, activity, the most optimal ways of solving tasks are determined;

1) predicting the manifestation of their intellectual, emotional-volitional, motivational processes, assessing the correlation of their capabilities, the level of attempts and the need to achieve a certain result;

2) the mobilization of forces in accordance with the conditions and assignment, self-hypnosis regarding the achievement of goals [1].

According to this approach, the state of psychological readiness has a complex dynamic structure and expresses the intellectual, emotional-volitional and motivational aspects of the human psyche in their relation to emerging conditions and future tasks. The distinguished components of a person's psychological readiness for activity determine the success of a person performing professional functions, while pointing to the dialectical unity of long-term and situational readiness - namely, that long-term readiness is determined by the effectiveness of the implementation of situational readiness in specific circumstances. Researchers M.I. Dyachenko and L.A. Kandybovich also indicate that the most important indicators of long-term readiness are related to the motivational sphere of the personality and are manifested in the need for successful fulfillment of the assigned task, in interest in the object of activity and the method of its implementation, as well as the pursuit of success. At the same time, a sense of responsibility, confidence in one's actions, faith in success, self-regulation, mobilization of all forces to solve a task and the ability to concentrate on it are associated with emotional-volitional components of psychological readiness.

Considering the psychological readiness for innovations in pedagogical activity, E. N. Frantseva defines it as an "integrative mental education, representing the unity of cognitive (knowledge of

innovations, methods of their application, etc.), affective (positive attitude to pedagogical innovations) , empathy, the prevalence of positive emotions in professional activities, etc.) and the conative (activity) components, where the activity component acts as the system-forming component, and the main characteristics th system is creativity " [2, p. 17].

Entering the innovative level of pedagogical activity, first of all, requires restructuring the motivational sphere of the teacher's personality, its value orientations, goals, attitudes, hierarchy of external and internal incentives, orientation, claims, interests. That is why the readiness for innovative activity is considered as a necessary universal quality of a teacher, the main condition for effective professional activity in a high-tech innovative society. However, the current level of a teacher's personal and professional readiness for creativity in professional detail, making non-standard decisions, taking initiative and excess activity does not correspond to the expected level of innovation in education required in the light of the process of updating target, substantial and procedural characteristics of education.

In psychological and pedagogical studies it is noted that the personality and professional features of the teacher as a subject of innovative pedagogical activity largely determine the structure and content of his readiness for innovative activity, which is determined by the presence of the motivational value attitude of the teacher to professional activity, possession of effective ways and means to achieve pedagogical goals, the ability to creativity and reflection. In this case, preparedness acts as the basis for an active social and professional-pedagogical position, prompting innovative activity.

In the works of V. A. Slastenin, the teacher 'readiness for innovative professional activity is understood as the integrative quality of a person, which, representing the unity of personal and operational components, ensures the effectiveness of this activity; in the readiness structure, motivational, creative, technological, and reflexive components are distinguished.

I.V. Gavrish defines the teacher's readiness for innovative professional activity as the integrative quality of his personality, which manifests itself in the dialectical unity of all structural components, properties, relationships and relationships in his studies. This is most fully consistent with her understanding of as a complex personal education, is a condition and a regulator of the successful innovative professional activity of a teacher. The

readiness structure turns out to be identical to the structure of the functional psychological system of innovative pedagogical activity and includes the following components: motives, goals, informational basis and program of activity, as well as a decision-making unit and a subsystem of professionally important qualities personality. In her study of psychological readiness for innovative activity as a characteristic of the educational environment, O. M. Krasnoritseva notes that "psychological preparedness for innovative activity reflects the dynamic characteristics of the multidimensional life world of a person (initiative as a person's willingness to act in conditions of unpredictability results of activity, rely on your own strengths (trust in yourself) and be responsible for the results; openness to changes; willingness to change; ease of adjustment) [3, p. 152].

A. L. Zhuravlev offers three components for measuring attitudes toward new innovations: readiness (motivation), preparedness (skills) and real activity. At the same time, there are studies showing that a high level of psychological readiness (social attitude) for innovations is not consistent with real behavior and activity in which this attitude is not implemented.

5. CONCLUSION
We believe that the psychological activity of the targeted formation of the selected components of psychological readiness for innovative activity will reduce the resistance of teachers to innovation, ensure the activation of innovative activity in an educational institution, and will also help teachers create their own military innovation projects and enrichment of innovative activity in an educational institution.

The involvement of the future teacher in innovative activity in the process of studying psychological disciplines helps to increase the level of professional competence, activates his desire to acquire new knowledge, self-expression, self-realization in solving pedagogical problems, and the development of creative potential. [6, p. 98].

V.I. Zagvyazinsky, T.A. Strokova noted that the teacher's professional activity can hardly be called full-fledged if it is based only on the principles of reproduction of previously learned working methods. Such an activity is not effective due to the fact that it does not use the existing innovative opportunities that can achieve better results in education. [7, p. 176].

The pedagogical process, built taking into account modern educational needs and characteristics of students, stimulates students' interest in academic subjects, helps to increase academic performance, to develop professional competencies of a teacher.

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CRITICAL STYLE AND GENRE DIVERSITY

Abstract: in literary criticism, the writer's style is often considered when thinking about style, and most studies study the writer's individuality, style. But the problem of the style of the literary scholar or critic is one of the less studied issues. The article discusses theoretical issues related to the method of literary criticism. There are a number of factors that determine the style of scientific and literary thinking, which indicates the specificity of the genre, language, methods of analysis, problem statement and solution of critical articles. Ibrahim Hakkulov is one of the critics who have a special place and style in literary criticism, the article analyzes the review-article, portrait-article, and essays of the critic, his contribution to the development of such genres, and his unique style unlike other literary critics. The study used analysis, comparison, and biographical methods.

Key words: literary criticism, scientific-literary thinking, style, skill, critical style, review-article, portrait-article, essay.

Language: English

Introduction

Scientific and literary thinking is a unique type of creation that arises from the merging of two fields, such as science and art. In this form of thinking, if every word the artist says is based on some basis, scientifically substantiated, and scientific conclusions are drawn, then the accepted text becomes a creative idea, reflected in his worldview, and re-created within the limits of his thinking. None of the true works of art duplicate each other, each is unique. For this reason, it is possible for several literary critics to conduct research on a single text, discover new aspects of its meaning, and present it to the reader. However, they differ from each other in some respects. This difference is primarily reflected in their style. In literature, the issue of style is one of the most complex theoretical problems and is often studied side by side with the issue of the creative method. So far, although these two concepts are related, they are not exactly the same phenomenon. Russian literary critic L.I. Timofeev explains these two issues as follows: "The method highlights the commonalities that connect the writer with other writers close to him, and the style distinguishes them from each other: his personal experience, talent, tone of voice, and so on, will be manifested "(11, 411).

II.Literature review

Even when the object of research and the method of analysis are the same, the style of the literary scholars differs from one another. There are many reasons for these differences, the following are the most important of them.

First of all, the diversity of the scientific level of each artist, because each scientist analyzes within his scientific degree, the second difference is related to the purpose of analysis, some scientists are more interested in art, some are more interested in ideological issues, others focus on the creative laboratory . Theorist M.B.Khrapchenko states that "Style is a way of expression of figurative mastery of life, a way of convincing and delighting the reader" (13.98). Another important difference in the work of

literary critics, which defines the style, arises from this definition of the scientist, the use of language tools.

III.Analysis

According to B.V. Tomashevski, style means some kind of originality. "Whether this peculiarity is the peculiarity of artistic language, the peculiarity of the means of language, or the peculiarity of 'human behavior' in the figurative sense, originality is the first sign of the meaning of the word 'style'" (12,11). Of course, having such originality requires knowledge, talent and skill from the creator. V.G. Belinsky, who understood this deeply, said that "style is a talent, an idea ... a person in style: style is the clarity and perceptibility of thought. The style is always as original as the personality, the character. That is why every great writer has his own style "(14,79) emphasizes personality, which is the sum of all the characteristics that define a style.

A separate personality is individuality. Although the individual style is manifested in various forms and means, the main factor that determines its characteristics is life, the period to which the creative belongs. Social life undoubtedly influences style as a key factor. Social life plays an important role in shaping the creative worldview. And it should be noted that each artist relies on what tasks the period to which he belongs belongs to him. The uniqueness of the artist is directly related to folk culture, literary heritage, literary influence, and so on. For this reason, I. Hakkul's style is based not only on the individual features that distinguish him from other literary critics - Najmiddin Kamilov, Matyokub Kushjanov, Naim Karimov, Ozod Sharafiddinov, Ibrahim Gafurov, but also on the fact that they studied his work, benefited from his achievements. As it continues to shape its own style, it is both independent, private, and at the same time related to them. A number of features that distinguish Ibrahim Hakkul from other literary scholars, such as deep thinking, consistency in analysis, sharpness of observations, depth of theoretical knowledge, mastery of the art of proof, a unique mix of scientific and artistic style in the narrative, are also associated with them. However, although these signs have something in common in one way or another, they are not repeated in the same case in the scholar.

The private style realizes the uniqueness of the creative ability, the uniqueness of the intellect, the perception, feeling, comprehension and interpretation of the analyzed text.

In the work of each scientist, words and expressions appear in a unique way. It acquires new facets of meaning based on creative thinking and scientific outlook. Every literary critic must have his or her own signature in this regard. It is appropriate to emphasize a scholar's language skills as one of the components that determine his style.

The mixture of scientific and artistic thinking in the work of I. Hakkul, while in some articles pure scientific language is used, in others the charm of artistic language can be seen. For example, if we look at the scholar's problematic article "On Oybek's Poetry and Personality" devoted to the analysis of Oybek's lyrics, we see the uniqueness of the language of the article, the scholar skillfully uses various metaphors: "Olamni munavvar qilgan nur va yolqin oftobdan taralgani bilan uning ayni o'zi emas-da" [6,275]. This analogy belongs to Oybek's heart, and through this sentence he emphasizes the infinite ocean of the critical poet's heart, which, no matter how much he describes it, cannot be fully expressed in its entirety.

In addition, the descriptions given to Oybek as "undiscovered mystery", "magician of words", "mystery poet" clearly show the critic's boundless love and devotion to the poet, as well as his knowledge of Oybek's work.

One of the most important aspects reflected in the creative style is talent. Many of the features reflected in style are related to talent. Since scientific and literary thinking is directly related to both science and art, it requires a double responsibility and talent from the creator. First of all, it is important to correctly understand the ideological purpose of a particular work, the talent to feel its art, and secondly, the originality and skill in re-presenting to the reader what he understood and felt.

IV.Discussion

Literary scholar Ibrahim Hakkulov states, "To have a personal style is to have a special personality." Indeed, when studying the articles and researches of I. Hakkul, who accepted style as a personality, his individual style, unlike other literary critics, became obvious.

I. Hakkulov's work is unique not only in the scope of themes, but also in the diversity of the genre. His work includes research in various genres of literary criticism. Genres such as review articles, discussion articles, research articles, literary portraits, essays, and literary conversations play a leading role in the scholar's work.

The review article examines the works of a certain period or the works of artists belonging to the same direction in a generalized way. Poets, writers or works of art (poems, novels, stories, etc.) that are the object of this genre are studied on the basis of the leading principles of the period, and it is important to draw generalized conclusions based on in-depth scientific analysis. Most of I. Hakkulov's review articles are devoted to the study of Uzbek poetry, which show such qualities as in-depth analysis, logical consistency, clarity of truth, generalization.

Critic's article "Let the Word Give Life" (8.178) is a scientific-theoretical review, which looks at the Uzbek poetry of the twentieth century and analyzes

the style, skill and mastery of the creators of the period. While Hamid Olimjon's sensitive perception of the "spirit of language" in Zulfiya's poems has attracted the scholar's attention, Shukrullo's "passion" has been critically acclaimed. The correct choice of words in the poems of E.Vakhidov, A.Oripov and the correct and appropriate use of words in the works of a number of young poets U.Azim, H.Davron, Sh.Rahmon, T.Jura, Yuldash Eshbek are in the works of all poets. the fact that they are not the same, that they are superficial in their choice of words, that they are chosen incorrectly, and so on, are highlighted in the works of some poets on the basis of in-depth analysis.

For example, the rubai of Ramz Babajan have been analyzed, and the reasons for the inconsistency of the words in the rubai have been proved by in-depth analysis.

In addition, the negligence of poets such as Husniddin Sharipov, N.Narzullaev, Sayyar in the use of words, the colorless, dull meaning of words, the critic laments the value of the word. For example, in the poems of Sayyar "Sen piyoz artganda, men ko'zyosh bo'ldim", "Tog'da yer qazidi, obod qildi tog'ni tuproqdan", "Tiklab qo'ydi jimjima shiypon, Shipda jimir-jimir qilar suv" deprived of content. After all, the question is, "Obod qilingan tog'ni tuproqdan deyish mumkinmi?" (8,186).

One of the peculiarities of the critic's method is that he asks the reader a question and then answers it, but in this case the critic does not deliberately answer the question. Because it is clear to everyone that a mountain cannot be built without soil without any explanation. The situation that has led to the critic's objection is, in fact, the misuse of simple words, the neglect of their meaning, the rhetoric, the deprivation of words of their meaning.

The article clearly reflects I. Hakkulov's scholar, who deeply observes the meaning of words, and cares about the future of Uzbek poetry. He emphasizes that "True poetry is the word that lives in the heart of the reader" (8, 187) and harshly criticizes the work of poets who do not know the value of words and do not penetrate into the heart of the reader. With boldness and courage, he reveals the imbalances of meaning in the poem. The article contains all the features of the scientific-theoretical review article:

1. The analyzed works are approached on the basis of the leading principles of the period, related to the studied literary phenomenon (the last periods of Uzbek poetry of the XX century) "literary evidence is analyzed on the basis of consistent practical-aesthetic logic" [3,46].

2. The poems analyzed in the review article are evaluated according to the criteria of art.

3. Theoretical conclusions are generalized on the basis of the analysis.

This article by I. Hakkulov was written in 1983. How relevant his views on contemporary poetry are today is confirmed. The works of slogans recognized by the scientist are still loved by our people, and the names of the poets who caused the criticism are almost unknown and can not be mentioned today. It seems that the scientific-theoretical problems presented in the review article have been solved.

Portrait-articles also play an important role in the work of Ibrahim Haqqul. This genre has gone through three stages of development in Uzbek literature.

1st period is classical literature: in this period, although the portrait-article was not fully formed as a genre, its peculiarities can be seen in the structure of manoqib, holot and tazkira.

2- The emergence of the press in the late nineteenth and early twentieth centuries brought the development of the genre to a new level. During this period, the portrait-article was created mainly in two different ways and purposes:

a) to provide comprehensive information about the work and life of a writer or poet, although short, with little information about his life and work;

b) to create lines for the portrait of the artist, and then to prepare the ground for the creation of a literary portrait [3.51].

3- The post-1920s phase. From this period, portrait articles began to be created and developed in a new way. Now they began to be written mainly in the form of forewords, in the form of portrait-memoirs, on the occasion of the anniversary of the death of an artist or writer, as well as on the occasion of the publication of a book [3.56].

Portrait-article is divided into several types according to form and content, such as portrait-memory, portrait-letter. When we look at the work of literary scholar Ibrahim Hakkul, we come across different forms of portrait-article in terms of form and content. Among them are portrait memoirs written on the occasion of the anniversary. Especially important are the portrait articles of the scientist, such as "Abduqodir Hayitmetovning o'zbek adabiyotshunosligidagi mavqei", "Ma'rifat darg'asi", "Tolmas tadqiqiotchi va nuqtadon olim" with their significant content and originality of expression.

"Abduqodir Hayitmetovning o'zbek adabiyotshunosligidagi mavqei" is a portrait-memoir, in which information about the life and work of the scientist is described figuratively and impressively on the basis of living memories. The critic begins the article with a specific node: "Ko'hna tarixning deyarli hamma davrlarida, xassotan, sovet davlati hukm yuritgan zamonlarda ilm va ijod yo'li bilan butun bir mavqe, balandroq martabaga erishish yoki katta unvon, oily mukofotlarga davogarlik qilmoq uchun biror guruhgami, to'dagami, albatta mansub bo'lish, xushomad, yaltoqlik, riyo va madhiyago'ylikning yozilmagan qonun-qoidalariga mohirlik bilan amal qilish shart hisoblangan"(7,214)

Such a situation, which the scientist considers a disaster and humiliation, directly refreshes the reader,

makes him curious about what is going on, and encourages him to know more quickly how this sentence is related to the life and work of the scientist. He also points out that during the period of Abdukodir Hayitmetov's work, literature was under various political influences. It is no coincidence that in the introductory part of the article A.Hayitmetov noted that he has become a symbol of hard-working science, ingenuity and devotion.

The critic reveals the scientific image of A. Hayitmetov through information about his scientific activity, works, and the qualities of humanity on the basis of memories associated with him. In particular, the memory of I. Hakkulov's dissertation defense, which clearly reflects the inner world, accuracy and honesty of the scientist in the event of Abdukodir Hayitmetov's participation. The article also contains memoirs of A. Hayitmetov's scientific experience, as well as his wisdom, through which the image of the scientist and the attitude of the critic to him became even clearer.

The article recognizes the services of the scientist in Navoi studies, evaluates his place in Uzbek literature on the basis of concrete evidence, provides a brief but consistent account of the scientist's biography, and reveals the leading and unique qualities of the scientist's personality and work, is important in that generalizing conclusions are given.

I. Hakkul's portrait-article "Tolmas tadqiqiotchi va nuqtadon olim" dedicated to the leading literary scholar Naim Karimov focuses on the spiritual image of the scientist and the leading features of his work. The article was written on the occasion of the anniversary and aims to shed light on the inner world of scientific activity, rather than the biography of the critical scientist. The scientist's work is described in the context of complex landscapes of the period in which he created. In any case, it is noted that the scientist, unlike his other colleagues, was not subject to political adaptation. He also spoke about the peculiarities of N. Karimov's method, innovations in analysis and interpretation.

In particular, he emphasizes his differences from other Uzbek scholars: "In many places, the scientist uses Oybek's personality as a mirror that reflects the various realities and essence of his work" (7,235) points out that there are few scientists who can be compared to N. Karimov in the effective application of the biographical method in the analysis. In his analysis of Shaykhzoda's work, he noted that "the writer's skill in revealing inner truths and situations by focusing on external beings" (7,242), Cholpon's essays on Mirtemir, "The power of figurative expression, the creation of colorful scientific landscapes". Munaqqid Naim Karimov's work reveals its peculiarities, as well as deep philosophical observations about true science, devotion to science and enlightenment. The freedom of expression of the scientist is also noteworthy, he also uses poetic mantras in the creation of portraits, in the description of it, in the analysis of his works to clarify ideas.

In short, in creating a portrait, I. Hakkul does not dryly record the facts, no matter to which artist he is devoted, he narrates them in a simple way through figurative expressions, vivid memories. Also, in all his portrait articles, the character of the protagonist reveals his inner world on the basis of life scenes that the critic has seen with his own eyes, participated in or was directly related to himself, which further enhances the reader's confidence in critical thinking. No matter who the critic writes about, his place in the literature, his unique style, focuses on the most important aspects of his personality, which can serve as an example for everyone, and provides the reader with new, interesting facts about the artist whose portrait is created.

The genre of essays attracts a lot of attention in literary criticism due to its wide range, the combination of scientific and artistic, the leadership of the author's "I", figurative thinking. This genre has a number of features, such as critical free thinking, disobedience to various stereotypes, freedom of imagination, which critics often refer to this genre.

Essays can be philosophical, journalistic, literary-critical, historical-biographical, pure fiction. Literary essays are often aimed at biting the core of socio-psychological observations about life events. Literary-critical essays cover the processes related to the life, psyche and works of the artist [5,375].

There are many examples of the genre of essays in Uzbek literary criticism.

In particular, the essays of Naim Karimov, Sh. Kholmirzaev, Ozod Sharafiddinov, Ibrahim Gafurov are well known and have a strong place in our literature. In the essay, personal reflection clearly reflects the power, level and scope of the author's artistic memory, life experience, wisdom, thinking ability [3,147]. For this reason, although there are many examples of this genre in our literature, they never repeat each other.

Literary scholar and critic I. Hakkul's work also contains several examples of the essay genre, most of which are literary-critical essays. Essays on Uzbek literature, such as "Ahmad Kalla", "Abdullah Qahhor jasorati", "Ilm shukuhi", dedicated to the classics of world literature, "Buyuk qalb muhabbati", "Hayot san'atkori", are examples of creativity that reflect the critical heart [16,1249].

Most of the essays in our literary criticism are dedicated to Uzbek writers or scholars. Essays are "scattered" on paper due to an impulse when the feelings in the heart are aroused, when the thought is ripe [5,374]. Ibrahim Hakkulov's essay "Hayot san'atkori" about the great Russian writer was born because of this "motivation". The heartbreak of the critic, his love for Chekhov, his influence on his works, his pain from the sufferings he endured, are ignited on every page of literary thought.

The epigraph chosen for the essay also invites the reader to observe without reading the article: "Qani edi, barcha odamlarning g'am-g'ussasi meniki bo'lsaydi…" The fact that this sentence was not canceled during the reading of the essay, "the root, the unifying basis of all facts" (B. Nazarov), these words are Chekhov's groans. When analyzing Chekhov's works, the critic first focuses on the points that unite them. It is to look at life with the eyes of the heart, to get to the essence, not to lose the dream of a mature person, no matter how complicated life is.

The critic uses these ideas as a key in analyzing stories. Many critics approach the subject on the basis of the biographical method (M: N. Karimov's essays). One of the peculiarities of I. Hakkulov's style is that in the process of analyzing the object of his work, the writer enters the creative laboratory, the analysis of the literary text reveals the inner world of the protagonist of the essay, Chekhov, and creates a portrait of him.

In the essay, the critic analyzes Chekhov's story "Hasrat" in a unique way. He remembers the first time he read the work. The critic thinks about the hero's plight, the helplessness of the person, and looks for the reasons why the protagonist is in this situation: "Iona – noshud, notavon, tashlandiq. Iona – badbaxt, kulfatzoda… bularning barisi to'g'ri, lekin ichdagi uning odamlik javhari qani? Odam sifatida u suyanadigan ma'ni qayoqda? Izvoshchida bular yo'q. Balki oldindan bo'lmagani bois u shu holga tushgandir"[8,110]. At this point, the scientist reveals to the reader the pain that tormented Chekhov, the facts that forced him to hold a pen. The reader is shaken by the consequences of spiritual poverty. The essay analyzes several of the writer's stories. The main purpose of the analysis is to draw the reader's attention to spiritual growth, self-awareness. However, this is not a dry advice, but a reference to the reader on the basis of in-depth analysis.

In the process of creating a portrait of Chekhov, I.Hakkulov connects the theme with the ideas of courage in the ancient "Futuvvatnoma". The writer compares his qualities with the ideals of the peoples of the East, and it is clear from the comparisons that most of them are embodied in Chekhov's heart. The purpose of this comparison is to bring the writer closer to the reader, to encourage him to observe that the topics he covers are not unfamiliar to us.

The essays discussed above do not repeat each other, the style, gloss, color are unique. Still, there are points that unite them. It is the concept of life, truthfulness, accuracy, deep thinking of the heroes of the critique. This also shows the uniqueness of the critic in the choice of the protagonist. Critical essays are not written just to introduce a writer or creator to the reader. What the scholar wants to draw the reader's attention to is their exemplary life, to emulate. Analyzing the inner world of the heroes, Ibrahim Hakkulov evaluates them in terms of their humanity, their high nature. This is why they are not approached on the basis of specific criteria, dividing them into western or eastern. For example, in an essay on Shakespeare, we come across hadiths, views on the subject of dervishes, an analysis of the ideas of Ibn Arabi, Yassavi, or in an essay on Ahmad Donish, a story about Chershevsky, the views of Western scholars. Every opinion of the critic is stated reasonably and convincingly, so that there is no objection in the reader.

The choice of epigraphs that cover the topic of each essay is also one of the hallmarks of a critic's work. Ibrahim Hakkulov's essays are important for their vividness and art, depth of observations, the life and work of the chosen heroes, and their relevance to this day. No matter who the critic wrote about, he could say something new about him. He avoided idealizing the heroes of the essay and tried to show them as they were, to bring them closer to the reader. The critical essays have a generalized meaning, in which the opinions expressed are vital observations made not only in relation to the protagonist, but to all readers.

V.Conclusion

When a literary scholar thinks about the style of a scientist, first of all, his uniqueness in the deep understanding of the work of art and in conveying its content to the reader becomes clear to us. Especially noteworthy is his contribution to the development of genres of literary criticism. By reading the portraits of I.Hakkul, both the reader and the specialist will have enough information about the life of the artist, the evaluation of them, the principles of evaluation of the work.

Although the above-mentioned articles and essays of the scientist show such features as understanding the nature of words in A. Qahhor, demandingness, courage like in A. Kadyri's articles, not giving in to artificiality as in N. Karimov's work, new methods and principles of deep and comprehensive analysis of the work of art are revealed, we will see.

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QR – Issue   QR – Article

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ABOUT THE VOICE SONGS OF THE CHULPAN

Abstract: the national Uzbek poet Chulpan has a special place in the development of the Uzbek classical and modern art of singing. His poems in a love theme, such as "Beautiful", "Love of the Kalandar", "Sleep" are sung by famous Uzbek artists. The article analyzes the features of the poet's poems that are transformed into a song.
Key words: Chulpan, art of singing, chorus, climax, size, aruz, barmak.
Language: English
Citation: Madrimov, B., & Uzakova, M. A. (2020). About the voice songs of the Chulpan. *ISJ Theoretical & Applied Science, 04 (84),* 434-437.
Soi: http://s-o-i.org/1.1/TAS-04-84-76   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.76
Scopus ASCC: 1208.

Introduction

Abdulhamid Chulpan is one of the most prominent representatives of the new Uzbek literature. His poetry is especially important for its traditional and innovative aspects. The poet's creations are so soulful that even composers and singers are not indifferent. In particular, his poems such as "Beautiful", "Sleep", "Love of the Kalandar" were sung by Uzbek singers and enchanted fans of art. There are several reasons why these verses turned into songs. The poems "Sleep" and "Love of the Kalandar" were written in the gazal genre, "Beautiful" in the size of a barmak.

II. Main part

It is known that Chulpan sought to enrich Uzbek poetry with novelty, to find new art forms. At the same time, he continued the rich traditions of many centuries of Uzbek classical literature. In particular, his works in the gazal genre are clear evidence of this. The gazal of the poet "Love of the Kalandar" was sung by the famous singer Mukhmujon Azimov. This gazal is created in the style of musammani mahzuf (mafoylun, mafoylun, mafoylun, foylun) bakhra hazaj of the size of aruz. The singer was able to choose the appropriate melody and tone that match the content

and spirit of the gazal. Moans and severe human pain reflect the emotions, mental anguish of the lyrical hero. The first couplet of the gazal was used in the chorus of the chorus. Moving from beit to beit, the sound of the song is more and more refined and expressed in the accompaniment of classical music.

Muhabbatning saroyi keng ekan, yo'lni yo'qotdim-ku,
As(i)rlik tosh/ **yang(i)lig'** bu /xatarlik yo'l/da qotdim-ku[2,68].
Ma-fo-iy-lun/ ma-fo-iy-lun/ ma-fo-iy-lun/ ma-fo-iy-lun

Phonetic phenomena are considered one of the important features that are inherent in the poetic system of Aruz. The task of phonetic phenomena consists in harmonizing the quantity and quality of bilingualism in the text. If the splitter means and feels this subtlety, then the likelihood of rough use will be minimized. This means that in the aforementioned bayt the phenomenon of imola As(i)rlik, yang(i)lig' is observed, that is, the variability of reading. If this moment is taken into account during execution, then the text of its execution will be achieved. Only in this case will the text gain harmony with the melody and

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reach the soul of the fan. In the performance of the singer, his own image is especially noticeable.

Uning gulzorida bulbul o'qib qon ayladi bag'rim,

Ko'zimdan yoshni jo' aylab, alamlar ichra botdim-ku[2,68].

This bayt gazal clearly expresses the experiences of the lyrical hero. In particular, the art of tablis (hyperbolization) (turning into a river of tears into a lover) serves to uncover painful conditions. The performer through the means of music was able to effectively convey to the listener mental torment and awe of his beloved, which are reflected in the beat.

Qalandardek yurib dunyoni kezdim, topmayin yorni

Yana kulbamga qayg'ular, alamlar birla qaytdim-ku[2,60].

We can say that the aforementioned bayt is the culmination of a gazal, which in turn in music is expressed by the culmination of the song. If you pay attention, in literature and music it is precisely these phenomena that are harmonized, which the performer also focused on. Therefore, the state of a lover who wanders around the world as if a kalandar is expressed by means of a melody evoking a sad mood.

Muhabbat osmonida go'zal Cho'lpon edim, do'stlar,

Quyoshning nuriga toqat qilolmay yerga botdim-ku[2,60]

In the gazal, such art of the sound rhythmic concept as iyhom is used: that is, the word "Cho'lpon" is used in two meanings. In the first, like a bright star, in the second, like a pseudonym.

No matter how large the song is, without harmony with the selected text, it will never gain fame. Because the above performance meets just such requirements, it took its rightful place among the classical songs.

The gazal "Sleep" written by Chulpan in 1921 is performed by a promising young singer Botir Kodirov. Of course, here the size of the poem is important. The music of the gazal has a sad sound. To write the youth for this poem, written in the ramali musammani mahzuf (foilotun, foilotun, foilotun, foilun) the size of aruz this image takes its leading place. The performer deeply felt the meaning and size of the verse. Rather, he retained the sound of Aruz and turned it into a sincere song. He could only unite us with the features of both classical and modern chants, so that the listener unwittingly searches for him in modern literature.

The song was written by the composer in the usual dimension ¾ and has the following appearance in the style of doira:
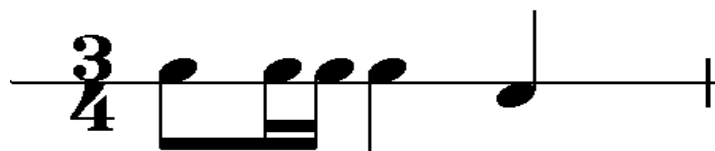
(Bak bak-ko-bak, bum).
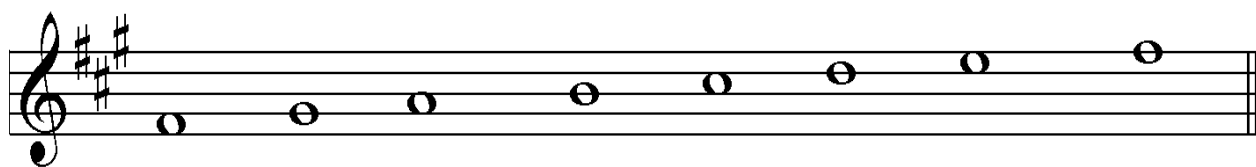
The work is written in the subtlety fis-moll (fa# minor)

Jim turing, shovqinlanmang, uyqu ichida ul pari,
Yurma tek tur, ey shamol, yursang-da yur, biroz nari![2,68]

The above-mentioned initial bayt singer used as a chorus. Chorus - a part of a song repeated several times [1, 192], it reflects the main poetic thought that the poet intended to convey. This work is different in structure from other songs. That is, if in most songs the chorus is performed after the first verse, then in this song the chorus first comes and only then the bayt.

The basis of the musical composition is culmination notes. The climax as a musical term is considered the highest point in the presentation and development of the song [1, 5]. This part demonstrates the talent of the performer. The singer transfers this experience to his heart and, by means of a beautiful melody, occupies the soul of the listener. In this case, Botir Kodirov creatively reacted to the poetic text and, accordingly, its content added another line, which is clearly manifested in the culmination of the song. At Chulpan:

Bu yotish, bu uyqu, bu qanday shirin, qanday go'zal,

Jonlanar, yuz ko'rsatar singan va yasangan amal[2,68].

In the song:

Bu yotish, bu uyqu, bu qanday shirin, qanday go'zal,

Charchagan, tolgan, umidsiz ko'zlarim to'ymay qarar.

Har qarashda ko'nglima, ming turli o'ylarni solar

After this, the chorus part of the song is performed:

Jim turing, shovqinlanmang, uyqu ichida ul pari,

Yurma tek tur, ey shamol, yursang-da yur, biroz nari![2,68]

In the process of performing the song, the singer is again in the mood for changes in the text and brought it in line with today. For example, the next bayt after the chorus actually sounds like this:

Ko'kda bir to'p qiz-malak uyqu kuyini boshladi

Ilgari chalgan tirik, jonli kuyini tashladi[2,68].

The singer in the second line of the word "tashladi" replaced by "boshladi". It should be noted that this change only increased the importance. That is, if the singer in his heart feels the text of the verse and mental experiences are not creatively related to the content, then in this case the strong lyricism of the verse will transfer to the melody of the song. In a gazal performed by Botir Kodirov, this feature manifests itself extremely brightly. In each song, the chorus has its own artistic task. In this gazal, the singer also turned the first bayt into a chorus:

Jim turing, shovqinlanmang, uyqu ichida ul pari,

Yurma tek tur, ey shamol, yursang-da yur, biroz nari![2,68]

The culmination part intensely conveys the sensory experiences reflected in the poem into the sound of music and facilitates its penetration into the listener's soul. The second bayt of the above song is performed as a climax:

Bu yotish, bu uyqu, bu qanday shirin, qanday go'zal,

Jonlanar, yuz ko'rsatar singan va yasangan amal[2,68].

It should be noted that in the process of performing a song, in three cases the song part is performed. In addition, through a musical composition, a fiction becomes especially attractive. A fan of art who listens to this song even suspects that it belongs to the pen of Chulpan. Rather, on the contrary, he thinks that the author of the lines is some modern author. In fact, the work of this poet does not know the boundaries of time and space. From this point of view, Chulpan as a unique poet continues to excite the hearts of modern admirers of art and literature. Thus, this song, which embodied both classic and modern sounds, contributed to the fame of Botir Kodirov as a sweet moose singer.

The poem of the creation "Beautiful" was also in smallpox and was offered to the court of fans. This verse, written in the size of a barmak and consisting of six hundred, is embodied in the melody of modern songs:

Qorong'u kechada ko'kka ko'z tikib,

Eng yorug' yulduzdan seni so'rayman.

Ul yulduz uyalib, boshini bukib

Aytadir: men uni tushda ko'ramen,

Tushimda ko'ramen shunchalar go'zal,

Oydan-da go'zaldir, kundan-da go'zal[2,31]

Paying attention to the literary text, you can see that the feelings of the lyrical hero are expressed in the beloved by the means of the most beautiful natural landscapes and phenomena (dark night, bright star). Such forms of art as alliteration ("Kechada ko'kka ko'z tikib") and personification ("Ul yulduz uyalib, Boshini bukib") serve to enhance the artistry of the verse.

Erta tong shamoli sochlarin yoyib,

Yonimdan o'tganda so'rab ko'ramen.

Ul da uyatidan berkinib, qochib,

Aytadir: "Bir ko'rdim, tushdamas, o'ngda"

Men o'ngda ko'rganda shunchalar go'zal,

Oydan-da go'zaldir, kundan-da go'zal[2,31].

In these lines, the poet's love state is artistically expressed precisely by means of personification. That is, the morning breeze is enlivened by the state of human hair dissolving. The verse traces a certain correspondence. Because, as a poet, I'm able to imagine how many beautiful natural phenomena (the rising of a star on a dark night and the bright moon shining after it, the early morning, the rays of the rising sun) paint an image of beauty. Therefore, when choosing a literary text for chanting, one should pay attention to the image of the experiences in it, according to the poet's ethical thought, and to feel all of this with the heart. Listening to the music and the sound of the poem "Beautiful", it can be noted that these aspects are practically invisible in it. Because the singer, with his tendency to light songs, has extremely modernized her strength. As a result, a work with a readable non-repeatable sample of Uzbek poetry significantly lost some of its content and attractiveness.

Conclusion

The poems of Chulpan that we analyzed are distinguished by a wealth of feelings, feelings and sincerity. Because "Sleep" and "Love of the Kalandar" were written in the size of Aruz, they are sung by singers in classical sounds and live in the heart of the people like demon songs. The poem "Beautiful" is also an unrivaled example of modern literature. However, the modern pop sound somewhat reduces the attractiveness of the literary text. Probably therefore, the singer who performed it is not

mentioned anywhere, and the song itself is practically not sung by anyone.

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QR – Issue   QR – Article

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COMPUTER SIMULATION OF SOLITON IN A SINGLE QUASI-LINEAR SYSTEM OF EQUATIONS

Abstract: *The numerical implementation of Cauchy problem for the system of the nonlinear evolutionary equations, which describe magnon-phonon interactions in 1D magnetics, is carried out. The research of stability is conducted in case of the model equations. On the basis of the developed technique the numerical calculations and the analysis of results are carried out.*

Key words: *evolutionary equations, difference scheme, Cauchy problem, stability, commutator, anticommutator.*

Language: *Russian*

Citation: Tattibekov, K. S., & Duisembiev, E. E. (2020). Computer simulation of soliton in a single quasi-linear system of equations. *ISJ Theoretical & Applied Science, 04 (84),* 438-441.

Soi: http://s-o-i.org/1.1/TAS-04-84-77   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.77

Scopus ASCC: 2610.

КОМПЬЮТЕРНОЕ МОДЕЛИРОВАНИЕ СОЛИТОНОВ В ОДНОЙ КВАЗИЛИНЕЙНОЙ СИСТЕМЫ УРАВНЕНИЙ

Аннотация: *Проведена численная реализация задачи Коши для системы нелинейных эволюционных уравнений, описывающие магнон-фононные взаимодействия в 1Д магнетиках. Исследование устойчивости проведено в случае модельных уравнений. На основе разработанной методики проведены численные расчеты и анализ результатов.*

Ключевые слова: *эволюционные уравнения, разностная схема, задача Коши, устойчивость, коммутатор, антикоммутатор.*

Введение

Исследование нелинейных динамических систем - одна из важнейших задач теоретической и математической физики. Прежде всего это вызвано тем, что нелинейные поведения свойственны большинству реальных процессов и уравнения описывающие их используются в самых различных областях естествознания.

Для изучения динамики нелинейных волн и солитонов в магнитоупорядоченных кристаллах часто используют макроскопическое описание магнетиков на основе уравнения Ландау-Лифщица (ЛЛ) [1]:

$$\vec{S}_t = \vec{S} \times \vec{S}_{xx} + \vec{S} \times \vec{JS},$$

где $\vec{S} = (S_1, S_2, S_3)$, $|\vec{S}| = 1$,
$J = diag (j_1, j_2, j_3)$, $\times$ - означает векторное произведение в $\mathbb{R}^3$.

Уравнение ЛЛ явно не учитывает деформацию решетки. При температурах отличных от нуля, атомы ферромагнетика не являются неподвижными, а совершают малые колебания около положений равновесия - узлов кристаллической решетки. Из за этого меняется

энергия обменного взаимодействия и возникают взаимодействия между спиновыми волнами и колебаниями решетки (фононами). Поэтому актуален вопрос о математическом исследовании моделей соответствующих ферромагнетикам с деформируемой решеткой. В этой работе проведена численная реализация задачи Коши для одной системы нелинейных эволюционных уравнений, описывающей магнон-фононные взаимодействия в 1Д магнетиках.

Интегрируемое обобщение уравнения Ландау - Лифшица с самосогласованным векторным потенциалом исследовано в работе [2]. Различные алгебро-геометрические аспекты таких моделей изучены в работах [3, 4]. Обобщенные урав-нения Ландау-Лифшица с самосогласованным векторным потенциалом получены в работе [5], а также установлены их связи с движением кривых и поверхностей.

Постановка задачи и решение

Рассмотрим задачу Коши для системы нелинейных эволюционных уравнений, предложенной в работах [6]:

$$4iS_t = 2[S, S_{xx}] + (2u + \{S, \sigma_3\})[S, \sigma_3],$$
$$2(u_t + u_x) - \lambda(S_3)_x = 0.$$

где $S = \sum_{i=1}^{3} S_i \sigma_i$, σ_i - матрицы Паули:

$$\sigma_1 = \begin{pmatrix} 0 & 1 \\ 1 & 0 \end{pmatrix}, \ \sigma_2 = \begin{pmatrix} 0 & -i \\ i & 0 \end{pmatrix}, \ \sigma_3 = \begin{pmatrix} 1 & 0 \\ 0 & -1 \end{pmatrix};$$

$S(x, t), u(x, t)$ - неизвестные функции, индексы x, t означают соответствующие частные производные по этим переменным, $\alpha, \beta, \Delta, \lambda$ - посстоянные действительные числа (параметры уравнений), [,] - коммутатор, {,} - антикоммутатор.

Неизвестная матрица-функция $S(x, t)$ должна удовлетворят условию
$$S^2 = I,$$
где I - единичная 2x2 матрица, или в "компонентах"
$$S_1^2 + S_2^2 + S_3^2 = 1.$$
Вектор $\vec{S} = (S_1, S_2, S_3)$ описывает классический спин атомов магнетика, скалярная функция $u(x, t)$ характеризирует деформацию решетки – смещение атома.

Для численного решения системы уравнений удобно перейти от спинового вектора $\vec{S}$ к функциям p, q с помощью формул:

$$S_1 = \frac{2p}{1+p^2+q^2}, \ S_2 = \frac{2p}{1+p^2+q^2}, \ S_3 = \frac{1-p^2-q^2}{1+p^2+q^2},$$

которые согласуются с условием [7]
$$S_1^2 + S_2^2 + S_3^2 = 1.$$
Тогда, система перепишется в виде

$$\frac{\partial p}{\partial t} + \frac{\partial^2 q}{\partial x^2} = 2 \frac{2pp_x q_x - q(p_x^2 - q_x^2)}{1+p^2+q^2}(\Delta S_3 + u)q, \quad (1а)$$

$$\frac{\partial q}{\partial t} + \frac{\partial^2 p}{\partial x^2} = -2 \frac{2qp_x q_x + p(p_x^2 - q_x^2)}{1+p^2+q^2}(\Delta S_3 + u)p, \quad (1б)$$

$$\frac{\partial u}{\partial t} + \frac{\partial u}{\partial x} = -\frac{\lambda}{2}(S_3)_x = 0. \quad (1в)$$

В дальнейшем нас будут интересовать эволюция движения волн на оси х, имеющие локальные изменения в начальный момент времени, т.е. для уравнений (1) рассмотрена задача Коши с начальными условиями

$$p(x, 0) = p_0(x), q(x, 0) = q_0(x),$$
$$u(x, 0) = u_0(x), \quad (2)$$

для $|x| < \infty$, где $p_0, q_0 u_0$ - известные функции.

Система уравнений (1) является квазилинейной. Указать точные решения соответствующей задачи Коши вида (1)-(2) представляется невозможным. При некоторых упрощениях точные решения рассматриваемой задачи получены в работе [8].

Следовательно, для детального изучения решений задачи (1)-(2) необходимо использовать приближенные методы.

На практике для численного решения нелинейных уравнений математической физики широко применяется конечно - разностные методы. Суть данного метода заключается в том, что область непрерывного изменения аргумента x заменяется конечно-разностной сеткой, а дифференциальные операторы, определяющие уравнения - разностными соотношениями. При этом решение дифференциальной задачи сводится к решению системы разностных равнений [9, 10].

В данной работе рассматривается численное решение задачи Коши для системы (1)-(2) конечно-разностными методами. С помощью Фурье - анализа проводится выбор алгоритма расчета, который является надежным по устойчивости и эффективным по соображениям численной реализации решений.

Исследование устойчивости проведено в случае модельных уравнений. На основе разработанной методики проведены численные расчеты и анализ результатов.

Выяснения вопросов устойчивости решения используемых в дальнейшем разностных схем для нелинейных уравнений (1) в общем случае является затруднительным. Поэтому для получения практических рекомендации выбора шагов сетки τ и h ограничимся исследованием устойчивости разностных схем для следующих уравнений, соответствующие линейной части системы (1а), (1б)

$$\frac{\partial p}{\partial t} + \frac{\partial^2 q}{\partial x^2} = 0, \quad \frac{\partial q}{\partial t} + \frac{\partial^2 p}{\partial x^2} = 0. \quad (3)$$

Для системы (3) рассмотрим разностные схемы вида

$$p_{\bar{t}}^{n+1} + \Lambda_h \left[\sigma q^{n+1} + (1 - \sigma)\, q^n \right] = 0,$$
$$(4)$$
$$q_{\bar{t}}^{n+1} - \Lambda_h \left[\sigma p^{n+1} + (1 - \sigma) p^n \right] = 0,$$

где Λ_h - разностный оператор второй производной

$$p_{\bar{t}}^{n+1} = (p^{n+1} - p^n)/\tau,$$

σ - некоторый вещественный параметр.

Легко показать, что разностная схема (4) аппроксимирует систему уравнений (3) с порядком

$O(\tau(\sigma - 0.5) + \tau^2 + h^2)$, т. е. для $\sigma \neq 0.5$

имеет первый порядок аппроксимации по τ, а при $\sigma = 0.5$ - второй.

Исследование устойчивости разностной схемы (4) проведем методом Фурье согласно критерию фон-Неймана [11]. В этом случае для множителей перехода гармоник получим следующее дисперсионное соотношение

$$\begin{vmatrix} \lambda - 1 & d \cdot [\sigma\lambda + (1 - \sigma)] \\ -d \cdot [\sigma\lambda + (1 - \sigma) & \lambda - 1 \end{vmatrix} = 0$$

где $d = 4k\sin^2\left(\frac{\xi}{2}\right)$, $k = \frac{\tau}{h^2}$, $\xi = kh$, k - соответствующий номер гармоники. Отсюда имеем, что

$$(\lambda - 1)^2 + d^2[\sigma\lambda + (1 - \sigma)]^2 = 0.$$

Следовательно, множители перехода гармоник от одного временного слоя к другому временному слою удовлетворяют соотношению

$$\lambda_{1,2} = \frac{1 \mp id(1 - \sigma)}{1 \pm id\sigma}.$$

Итак,

$$\left|\lambda_{1,2}\right|^2 = \frac{1 + d^2(1 - 2\sigma + \sigma^2)}{1 + d^2\sigma^2}.$$

Отсюда видим, что, если $\sigma \geq 1/2$, то $\left|\lambda_{1,2}\right| \leq 1$, т.е.согласно критерия фон-Неймана разностная схема устойчива в норме пространства $L_{2,h}(\infty,\infty)$ по начальным данным. Заметим, что явная разностная схема, соответствующая при $\sigma = 0$ является абсолютно неустойчивой.

Для линейной системы (3) теперь рассмотрим разностные схемы более общего вида

$$p_{\bar{t}}^{n+1} + \Lambda_n [\sigma\, q^{n+1} + (1 - \sigma)q^n] + \tau(0.5 - \sigma) \cdot$$
$$\Lambda_h\Lambda_h[\alpha p^{n+1} + (1 - \alpha)p^n] = 0, \quad (5)$$
$$q_{\bar{t}}^{n+1} + \Lambda_n [\sigma\, p^{n+1} + (1 - \sigma)p^n] + \tau(0.5 - \sigma) \cdot$$
$$\Lambda_h\Lambda_h[\alpha q^{n+1} + (1 - \alpha)q^n] = 0,$$

Можно показать, что последние разностные соотношения аппроксимирует дифференциальные уравнения на решении с порядком $O(\tau^2 + h^2)$ при малых значениях параметров σ и α. При этом используются следующие соотношения, являющиеся следствием уравнений (3)

$$p_{t\,t} = -p_{xxxx}, \qquad q_{t\,t} = -q_{xxxx},$$
$$q_{xx\,t} = p_{xxxx}, \qquad p_{xx\,t} = -q_{xxxx}.$$

Множитель перехода простейших гармоник для разностных соотношении апроксимируется выражением

$$Q = \frac{1 - (1 - \alpha)d^2(0.5 - \sigma) + id(1 - \sigma)}{1 + \alpha d^2(0.5 - \sigma) + id\sigma}$$

После несложных выкладок можно показать, что критерий фон-Неймана будет выполнен, если

$$(1 - 2\alpha)d^4(\sigma - 0.5)^2 \leq 0.$$

Т.е. если $\alpha \geq 1/2$, то разностная схема также устойчива по начальным данным в норме пространства $L_{2,h}$ при малых σ.

Заметим, что среди семейства разностных схем вида (4), (5) наиболее привлекательны случаи, когда $\sigma = \alpha = 0$ и $\alpha = 0$. В первом случае расчеты ведутся по явным формулам, а во втором случае для нахождения параметров задачи на верхнем временном слое можно ограничиваться использованием формул трехточечной матричной прогонки. Однако в обоих случаях, как показывает вышеприведенный анализ, соответствующие разностные схемы являются абсолютно неустойчивыми.

Руководствуясь вышеуказанными соображениями, будем рассматривать схему вида (4) с $\sigma = 1$. Тогда соответствующие разностные выражения для уравнений (1а), (1б) будут иметь вид

$$p_{\bar{t}}^{n+1} + q_{x\bar{x}}^{n+1} = f(t_n, x),$$
$$q_{\bar{t}}^{n+1} + p_{x\bar{x}}^{n+1} = g(t_n, x),$$
$$(5)$$

где функции f и g соответствуют правым частям выражений (1а), (1б) соответственно, вычисленные в узлах сетки в момент времени $t_n = n\tau$.

Для аппроксимации уравнения смещения (1в) использовано соотношение

$$u_{\bar{t}}^{n+1} + u_{x^0}^n = -(S_3)_{x^0}^n + \frac{\tau\delta}{2} u_{x\bar{x}}^n, \qquad (6)$$

где δ - некоторый вещественный параметр.

Разностная схема (6) при $\lambda = 0$, $\delta = 1$ соответствует схеме Лакса-Вендроффа,

аппроксимирующая уравнение смещения с порядком $o(\tau^2 + h^2)$.

Заключение

Проведена численная реализация конечно-разностными методами задачи Коши для систем нелинейных эволюционных уравнений описывающих магнон-фононные взаимодействия. Исследование устойчивости построенных разностных схем проводилось методом Фурье-анализа.

Основные расчеты были проведены по разностной схеме (5), (6) при сравнительно малых значенииτ ($\tau = 0.001 - 0.005$). Сходимость численного решения проверялась по последовательности сеток с числом узлов $N = 1001, 2001$ при различных τ. Сходимость в норме пространства $L_{2,h}$ удовлетворительная. В худшем случае, когда $\Delta = 50$, $\lambda = 1$ относительная погрешность оставляла $\approx 2\%$.

Полученные графики результатов численных расчетов показывают процесс распространения гармонических волн. Расчеты проведены для $N = 2001$ на промежутке $[-20,20]$, т. е. с шагом $h = 0,02$.

Функции $S_1(x,t), S_2(x,t)$ имеющие в начальный момент времени форму уединенных волн, по истечении времени продолжают распадаться на волн меньшей амплитуды. Причем с увеличением количества волн, уменьшаются их амплитуды, и при больших значениях времени $(t \approx 5)$ $S_1(x,t), S_2(x,t) \to 0$.

Функция $S_3(x,t)$ имеющая в начальный момент форму уединенной волны с течением времени продолжает уменьшат свою амплитуду и при больших t $(t \approx 5)$ $S_3(x,t) \to 1$. Функция $u(x,t)$ не меняя свою профиль, двигается в положительном направлении оси x.

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THE IMPORTANCE OF PISA ASSESSMENT RESEARCH IN THE INTERNATIONAL EDUCATION SYSTEM OF THE REPUBLIC OF UZBEKISTAN

Abstract: *The article provides a detailed analysis of the role of PISA assessment research in the internationalization of the education system of the Republic of Uzbekistan and the development of these processes on the basis of international and local scientific literature and Internet materials as well.*

Key words: *Uzbekistan, education system, Pisa assessment research, students, development, mathematics, natural sciences, reading.*

Language: *English*

Introduction

Trends in the development of education quality assessment systems at different levels in the era of global change, the participation of the Republic of Uzbekistan in international comparative research on education quality assessment is considered as an opportunity to increase the capacity of the education system. International comparative research on education quality assessment will encourage the use of comprehensive analysis of results, assessment of students' reading, natural sciences, mathematical and creative thinking literacy, methodology of international research and evaluation criteria to create national teaching materials and measurement materials.

The Decree of the President of the Republic of Uzbekistan dated April 29, 2019 "On approval of the Concept of development of the public education system of the Republic of Uzbekistan until 2030" [3] was adopted. The decree was adopted in order to "determine the priorities of systemic reform of general secondary and extracurricular education, raise the spiritual, moral and intellectual development of the younger generation to a qualitatively new level, the introduction of innovative forms and methods of education". The decree states that "by 2030, the

Republic of Uzbekistan will be among the top 30 developed countries in the world in the ranking of the International Student Assessment Program PISA (The Program for International Student Assessment)". The concept approved by the decree, in turn, sets out the main tasks to be done for this. In particular, such tasks as "improvement of teaching methods, the gradual application of the principles of individualization in the educational process" have been identified. The concept also reflects some of the problematic issues in the public education system. In particular, "outdated content of textbooks on pedagogy and methodology", "unsatisfactory methodological support of teachers", "lack of diversity in the system of creating textbooks, monopolizing their creation and publication", "their content, methodology and quality of publication" negative impact. In turn, "although state education standards are based on competency-based assistance, teaching and assessment methods, as well as textbooks and other teaching materials, are primarily focused on memorizing and capturing information, hindering the development of critical thinking, independent information search and analysis skills, and other skills. "It is necessary to improve the quality of textbooks used, to establish the practice of using

foreign textbooks as additional and alternative teaching materials" [2, p.16] sideways.

RESEARCH METHODS

The third chapter of the concept, entitled "The main goals and directions of development of the public education system" states that "innovative development of the economy in the general education system, the creation of opportunities for quality education in accordance with international best practices and modern society; Development of human capital as a key factor in determining the level of student competitiveness in the labor market and in the country as a whole" is a strategic goal of the public education system. The concept envisages "the creation of a national system for evaluating the quality of education in PISA secondary schools, aimed at assessing the level of literacy of students in reading, mathematics and science in order to organize international research in the field of public education quality assessment".

Chapter 4, "Expected Outcomes of Concept Implementation", introduces STEAM curricula and new state educational standards that meet the requirements of a modern innovative economy, with a special emphasis on the development of STEAM disciplines and critical thinking, independent information retrieval and analysis competencies [1], however, "international programs and research to assess the quality of education in assessing the level of knowledge of students in the public education system" (PISA, TIMSS, PIRLS etc.) of the Republic of Uzbekistan as a permanent secure the participation of the main results. PISA and PIRLS assessment programs have been translated into more than 200 assignment groups for testing and have been approved by international linguistic centers [4, p.77]. 20 video lessons and videos dedicated to the development of creative and logical thinking skills of students, 7 sets of teaching aids and assignments, including 4 manuals were published, distributed to all schools and posted on social networks.

RESULTS AND DISCUSSIONS

The establishment of the PISA International Assessment Survey in Uzbekistan and the participation of the relevant ministries and departments in the PISA and TALIS international surveys conducted by the Organization for Economic Cooperation and Development are determined by the Cabinet of Ministers. According to this document, the State Inspectorate for Education Quality Control, the Ministry of Public Education, Foreign Affairs, Justice, Innovation Development, Finance and Economy on participation in international PISA and TALIS surveys conducted by the Organization for Economic Cooperation and Development of the Republic of Uzbekistan and the State Inspectorate for Education Quality Control Approved the proposal to establish a

"National Center for International Research" to assess the quality of education. The main tasks and areas of activity of the National Center are: participation as a national representative of the Republic of Uzbekistan in the organization and coordination of international evaluation programs and competitions; ensuring coordination of activities of governmental and non-governmental organizations on the development of literacy and the ability of students to apply their knowledge in practice; Carrying out scientific research aimed at the development and implementation of innovative methods for the development of literacy in education, mathematics and natural sciences in the education system; establishment of international relations in the field of education quality assessment, development and implementation of international projects; participation in the organization and holding of international scientific conferences and symposiums; conducting fundamental and applied research in the field of education quality assessment; Comparative assessment of the quality of education in Uzbekistan and other countries of the world; scientific and methodological support for research to assess the quality of education; Systematic monitoring of the implementation of international assessment programs in the educational process, dissemination of best practices in this area and participation in the development of recommendations and guidelines for educational institutions on its basis; Ensuring the participation of students in international research such as PISA, TIMSS, PIRLS, as well as the study of the teaching and learning environment in general secondary schools and the working conditions of teachers by TALIS; regular monitoring based on an objective assessment of students' literacy and international comparisons; international comparison of development trends of the education system; preparation of educational and methodical recommendations on native language, mathematics and natural sciences using innovative teaching methods.

In particular, the connection of secondary schools to modern information communications (computer, modem, projector) and the Internet, preparation for participation in the PISA international assessment program affects not only the target groups, but the whole learning process in school [5, p.54]. There is a need to identify and develop the abilities and talents of students from the lower grades and on this basis to develop programs to ensure the participation of students in international assessment programs and competitions to assess literacy. This, in turn, requires changes and additions to the content of state educational standards, curricula and textbooks in reading, mathematics and natural sciences, based on the results of international research. On the basis of these curriculum, the methodological and didactic approach to teaching will be radically considered.

Participation in this international program requires the creation of a national database of questions on the PISA assessment program and its integration into the curriculum. Assessing the quality of the learning process will lead to the introduction of tests and exams aimed at assessing the system of assessment of students, the formation of practical skills [6].

The fact that Uzbekistan is participating in the PISA assessment survey for the first time, in turn, makes it necessary for school teachers and students to systematically improve the content of this study, control and testing tools, which is an important factor in participating in the survey with high results. In organizing the PISA international assessment program, it is important to ensure that pedagogical graduates are ready for the assessment program when they come to work in general secondary education. It is also advisable to organize short-term professional development courses for teachers of science in the direction of the international assessment program PISA on the introduction of best practices of foreign countries. In turn, the PISA international assessment program requires systematic research, and this research is important in determining the direction of the education system.

Participation in international research on education quality assessment provides Uzbekistan with the following opportunities:

- The results of the research allow us to draw conclusions about the quality of education in the country and its role, taking into account international standards.

- It is used to reform the national education system, improve the content of education, training and retraining of teachers, as well as the creation of a new generation of textbooks by specialists.

- International research has a positive impact on the quality of national research in education.

- By participating in international research with the involvement of leading experts from various organizations in Uzbekistan will develop a culture of monitoring research among our local experts, leading to the compliance of education quality assessment with international standards

- Allows the production of control materials in the assessment of the quality of national education at the level of quality of control materials used in international research [7].

In 2018, 78 countries (economies) are expected to participate in the PISA assessment survey, while in 2018, 78 countries (economies) are expected to participate. This, in turn, indicates the growing role and coverage of PISA assessment research in the world. Computer-based assessment studies will be conducted in 83 of the 88 countries participating. The seminars will also review the scope of surveys and questionnaires, organize the process of approbation of research assignments and form the necessary database, implement harmonization processes for surveys, adhere to technical standards of research, differences from previous research, changes, selection of schools and students (Sampling) processes, the organization of translations, the use of a special web portal for translations, the national research centers of the states activity of the questions and their personnel requirements, translation, adaptation and coding and other organizational issues.

In addition to assignments to assess students' core competencies, student surveys and school surveys are also organized. Within the framework of these seminars, the sample questionnaires will be adapted based on the national values of the participating countries. The PISA assessment survey will also be a great boost to research in education and will provide the opportunity to conduct surveys for a number of research papers in education using these questionnaires. Tasks that assess students' core competencies will also be considered in detail by science expert groups in collaboration with participating States. The Education Testing Service and attached higher education institutions will be involved in this process. As an example, in the 2021 assessment study, the Luxembourg Center for Educational Testing (LICET) at the University of Luxembourg was attached. The research assignments for 2021 are ready by March 2019. Preparation, translation, approbation of research assignments is a complex process, which involves independent agencies of linguistic control, the Education Testing Service, research councils [8, p.9].

Separate seminars will also be organized for countries participating in the PISA assessment survey for the first time. In connection with the participation of the Republic of Uzbekistan in international research from 2021, the first seminar was held on January 14-16, 2019 in the United States. Uzbek experts took part in the international research seminar PISA 2021 in Austria. The State Inspectorate for Education Quality Control under the Cabinet of Ministers of the Republic of Uzbekistan, the Ministry of Public Education and its regional departments, the Republican Education Center and the National Center for International Research on Education Quality Assessment are responsible for PISA assessment research. In addition to PISA assessment research, the experience of a number of foreign countries is being studied in order to introduce PIRLS, TIMSS, TALIS assessment research. In particular, a number of practical works have been carried out with Kazakhstan and Russia. Responsible for the Uzbek assessment study were trained in various seminars with experts from these countries.

In cooperation with the World Bank and the Russian Training Center, a seminar-training on "International comparative research in the system of quality assessment of education as a mechanism for improving school education" was held on February 18-22, 2019 in Moscow. Development trends of

education quality assessment systems at different levels in the period of global change, Uzbekistan's participation in international comparative research on education quality assessment, opportunities to increase the capacity of the education system, comprehensive analysis of international comparative research on education quality assessment, students' reading, science, mathematics and positive thinking assessment, methodology of international research and assessment criteria from national teaching materials and measurement materials [9]. The use of strategic directions for assessing the quality of education is the most urgent tasks of the education system.

Improving the international competitiveness of education in Uzbekistan, the introduction of various educational technologies in the education system, new methods of teaching and learning, focusing on increasing students' interest and motivation to learn are among the priorities of education. It is planned to build and reconstruct new schools in the regions, strengthen their material and technical base, support the development of social infrastructure in rural areas, as well as update educational standards. It is recommended to pay special attention and use educational standards from international best practices, including the requirements of international research.

It should be noted that the OIC has assigned the Australian Educational Research Council to assist in Uzbekistan's participation in the PISA study, and the assistance includes: methodological and advisory assistance, PISA research support, surveys, capacity analysis, capacity building. development and project implementation plans, assistance in the development and implementation of national projects, support for national quality control and programs. The preparation and implementation period for participation in this research is 5 years, and in 5 years the following tasks will be implemented in stages: in 2018, test materials will be developed by international project partners, in 2019, adaptation of test materials will be carried out, analysis of readiness national assessments, PISA test assessments in 2020, and basic assessment studies in 2021. In 2022, the final results from 2018 will be announced and international and national reports will be prepared [10].

CONCLUSION

According to the PISA assessment survey schedule, the pilot phase is scheduled to take place in March-June 2020 over a period of 6 weeks or 42 calendar days, in which the National Center, in collaboration with international contractors, randomly selected a total of at least 1992 students from 71-72 out of 28 schools is obtained. The main research is scheduled to be conducted in 2021 on a computer-based basis for up to 8 weeks or 56 calendar days, in which PISA program will cover at least 6,300 students from 41 out of 150 schools on a random basis by international contractors. Starting in 2019, a rating system for evaluating the effectiveness of schools was introduced in the public education system. consists of assisting. In 2019, the activities of 10% (a total of 956) general secondary education institutions in the country were analyzed on the basis of 4 indicators and the results of their rankings were prepared as of July 1, 2019.

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ROLE OF ENGLISH IN INTEGRITY OF SCIENCE, EDUCATION AND BUSINESS

Abstract: *In today's world, with the intensive development of commercial, economic ties between countries, more and more relevance is gaining a way of communication between partners and colleagues. Business English becomes vital a means of establishing relationships between entrepreneurs, specialists and employees of international companies. Exactly the ability to correspond and communicate competently determines the image and professional level of business partners or joint cooperation. The upward trend in English has spawned a new type of business activity that provides the provision of consumer education services at different ages categories.*

Key words: *Communication, English, integration, linguistics economic sectors.*
Language: *English*
Citation: Khatamova, G. (2020). Role of English in integrity of science, education and business. *ISJ Theoretical & Applied Science, 04 (84),* 446-454.
Soi: http://s-o-i.org/1.1/TAS-04-84-79   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.79
Scopus ASCC: 1203.

Introduction

Since English has assumed such a major role, several researchers have tried to coin a term by considering the various aspects of the use of English in diverse settings. Among them, Ahulu (1977) coins it, "General English", McArthur (1987) says it, "World Standard (Spoken) English, whereasDavid Crystal (1997) invents a phrase, "English as a global language" and House (1999), Gnutzmann (2000) Seidlhofer (2001) & Jenkins (2007) name it as "English as a Lingua Franca". Furthermore, Widdowson (1997), Modiano (1999) and Jenkins (2000) coined another phrase, "English as an International Language" and Brutt-Griffler (2002) invents a new word, "World English" [1].

Good knowledge of a professional foreign language for modern specialists is one of the conditions for successful work. New educational paradigms are being created related to training and competencies [2-4]. Already a considerable time in the framework of the competency-based approach, one of the leading in the field of education, intensive research has been conducted on theoretical models of foreign-language communicative and professional

competencies [5], revealing the psychological and pedagogical mechanisms of development [6-8], in which communicative and professional competencies are defined as one of the aspects of human competence that ensures the receipt and processing of information [9, p. 63], the ability to create meanings by determining the potential property of each language for constant modification in response to changes. Fundamental theoretical foundations have been created for the further development of professional competence, the basis of which is indicated by communicative competence, including linguistic, discursive, conversational, socio-linguistic, strategic and speech-thinking components [10] or such as, for example, grammatical, sociolinguistic, compensatory and competence of speech strategy [11]. At the same time, they emphasize the information component of professional readiness [6], which, as it is studied, expands more and more with new structural components, for example, convergent competence, consolidating all types of media production formats currently available: broadcast, online, mobile, print, etc. However, whatever components researchers include in their communicative and professional

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competencies, the foreign language is always the basis for the formation [12-14], although there is another area of training – professionally oriented teaching of a foreign language [15].

The processes of globalization and integration in the modern world determine the growing role of the English language in the field of education. Recently, leading universities in the world use it as a means of learning (English-medium Instruction). Note that we are talking about teaching disciplines in English in countries where English is not the language of communication for most of the population. This is the fundamental difference between this phenomenon and subject-language integrated learning (Content and Language Integrated Learning), designed primarily for residents of the European Union. The latter is an approach to mastering the content of instruction through a foreign language and at the same time through the subject through language [6]. As for the English-medium Instruction approach, it can also be actively applied in the conditions of the Russian university education system.

Methods

Current article has been studied under qualitative methods with secondary source with theoretical approaches. Some linguistic methods can be discussed as development factor.
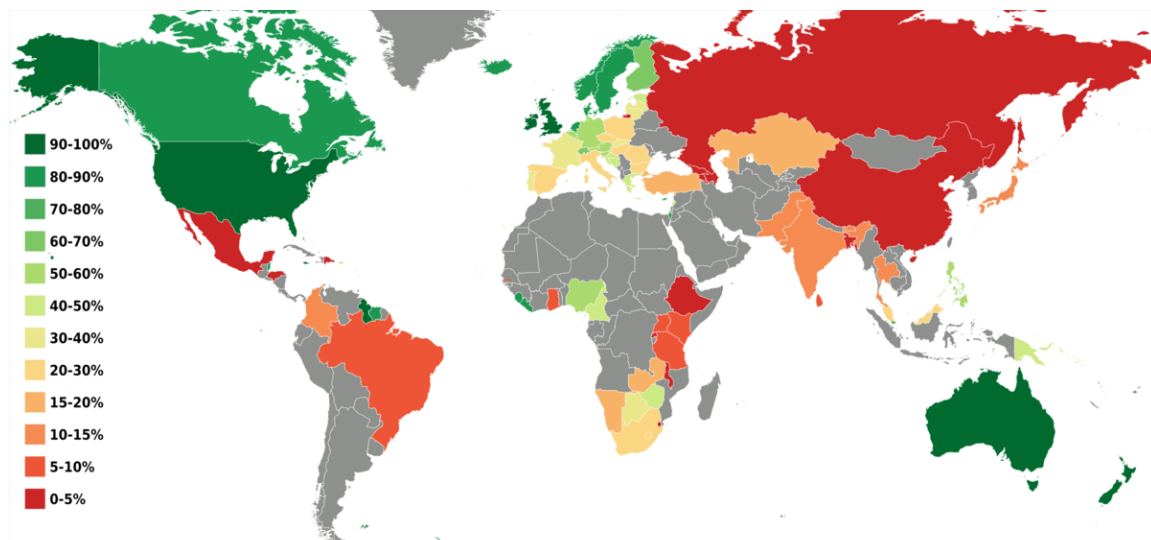
Results

Business English is not just about interviews and writing summary. When you get into the business stream, you have to make presentations, negotiations, answer phone calls, write official letters and conduct business correspondence, conclude contracts and much, much more. Surely. And that's not all. The list is always open, and you, Of course, you can quite confidently apply your knowledge and abilities in the above areas. International business, business relations with foreign partners are rapidly gaining momentum, and just be great specialist in the commercial business field, today already not enough because the manager's monthly income difference in a company whose CV indicates knowledge of one or more foreign language and professional manager with experience.

The demand for translation services and many spend time and money in search of a translator for business meetings, signing contracts with foreign companies. Today, English is international, namely English is necessarily studied as a second language throughout to the world. English has become the dominant business language in the second half of the twentieth century for various reasons. As the international character of the business grew, the need for a "common" language. English was perfect candidate, as it has already been spoken, as the first or second language, many people around the world (partly as a result of British colonialism).

It is currently spoken by more 500 million people in many territories, including United Kingdom, Canada, United States of America, Australia, India and South Africa. Therefore, business English considered as basic for people who want to work in any area of business, aviation, computer technology, etc. As the economy becomes more global, importance Business English continues to grow. Any industry or area of interaction of people united by a common goal, task and type of activity, has its own specific designations, terms and names. Studying general business English courses, it is impossible to take into account all the subtleties and nuances of a highly specialized communication. Business vocabulary of a financial manager can absolutely differ from the terminology of the marketer. Moreover, one and the same the term in different industries can mean completely different.

Figure 1. World map percentage English speakers by country

Source: https://www.google.com/imgres?imgurl=https%3A%2F%2Fupload.wikimedia.org%2Fwikipedia%ons%

Statistically, the role of English in the world can be illustrated by the following facts provided by the British Council: – English has official or special status in at least 75 countries, with a total population of more than two billion; – one out of four of the world's population speak English to some level of competence; demand from the other three quarters is increasing;– more than two thirds of the world's scientists read in English; – three quarters of the world's mail is written in English; – 80 per cent of the world's electronically stored information is in English.

Given the above problems, in order to create a methodology for teaching professional cycle subjects in English, taking into account the experience of

European countries studied and analyzed by us, considerable attention was paid to the teaching staff and their training, level of knowledge of the English language. Some of the teachers passed the exams for the certificate of the London Chamber of Commerce and Industry, in particular, the authors of this article. This methodology has been tested and introduced into the practice of teaching special disciplines in the fields of Economics and Human Resources within the metacourse Theory and Practice of Business Communication in the amount of 170 hours, of which 36 hours are 1 semester, 36 hours 2 semesters, 36 hours 3 semester, 64 hours was devoted to independent work of students.

Figure 2. Integrity chain learning English for economic growth

Source:https://www.cetrixcloudservices.com/blog/appropriate-integration-strategies-for-higher-on-institutions
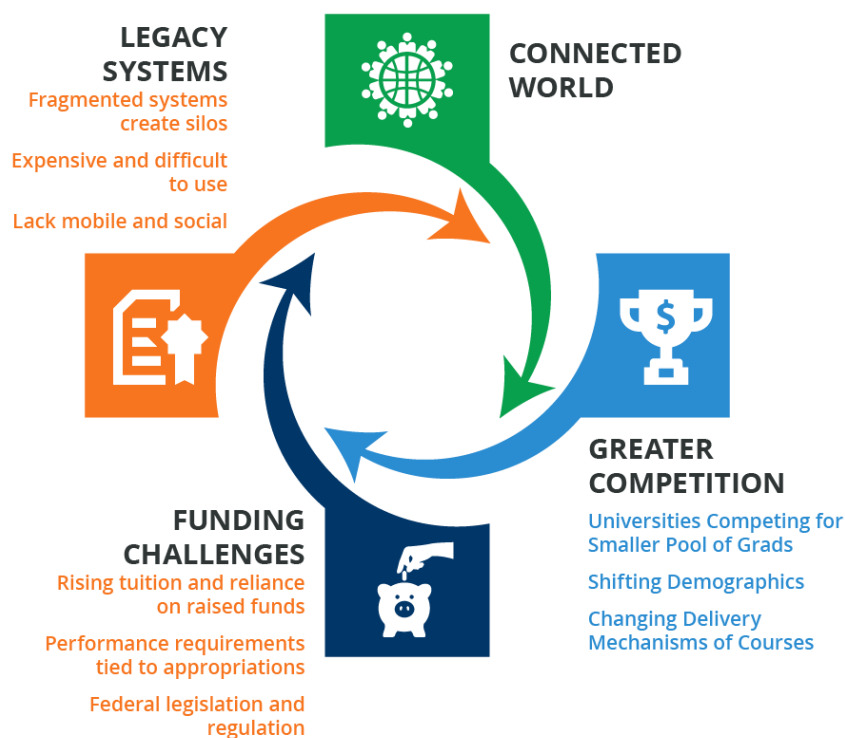
As criteria for the specialist's readiness for professional activity in the conditions of using foreign language communication, we highlighted: 1) awareness of the importance of this kind of interaction with partners; 2) the ability to correctly verbal presentation of professional information and its transmission to consumers; 3) knowledge, understanding and consideration of the national

traditions of foreign partners; 4) possession of the indicative basis and skills of verbalization of professional experience; 5) systemic language skills in the professional field (proficiency in bilingual professional discourse). According to these criteria, the implemented methodology has shown its effectiveness. In the process of testing, the following results were obtained.

Figure 3. English as a communication means in economic development

Source: https://www.google.com/imgres?imgurl=https%3A%2F%2Fwww.cetrixcloudservices.com%2Fhs-
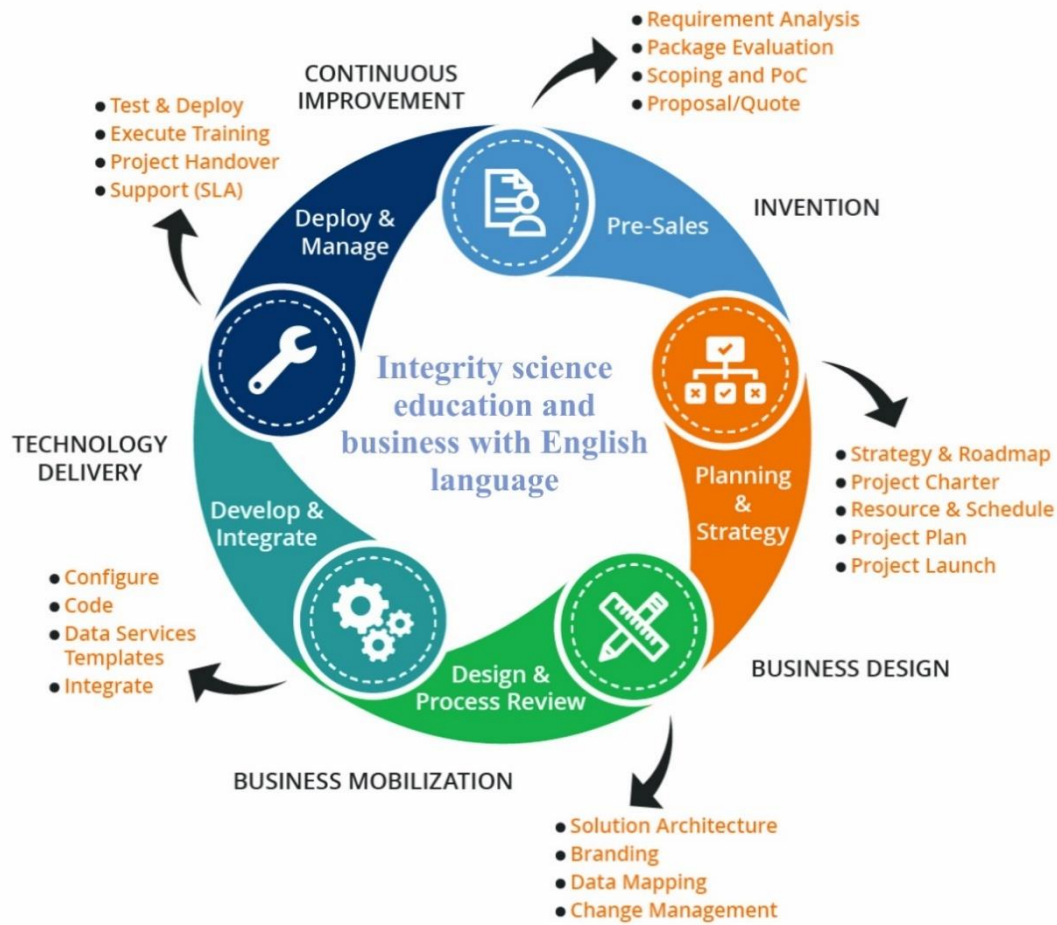
Language is a means of communication and people share their thoughts, feelings, expressions, ideas and expressions. In other words, language exercises cultural transmission, socialization, status, sharing power, politics, and knowledge and so on. Even though there are different communication systems, human communication system is well-recognized because of its arbitrariness, duality of patterning, displacement, voluntary-vocal, etc. No language is alike and all languages are different from one another with respect to their popularity, cultures, dictions, influence, scope, aspects, accents, popularity, extra-linguistic features, standardization, status and so on.

Science and Technology

English is the language widely used in the field of science and technology. It has also been adopted as the de facto universal language and this resulted a great impact on scientific communication. As a result, scientists all around the world can make use of the available scientific literature and communicate with the scientists of the other regions wherever they are in the world. Now-a-days, the working knowledge of English has become a minimum requirement in a number of professions and occupations such as a research, medicine, and computer and so on. Since the middle of the twentieth century, there has been a drastic change in the global scientific community. Now, English has become the prevalent predominant language in some non-English speaking countries like France, Spain and Germany.

In this context, Adam Huttner-Koros says, "The academic papers outnumber in publications in the English language several times more than that of in their countries' own languages". He further says that this ratio is astounding that it has reached 40:1. It reveals that scientists who wish to produce influential, globally recognized work have to publish their papers in English as they have to share and enhance their knowledge with other scientists around the globe either by attending several international conferences, seminars and workshops or by reading papers written in English or through their discussions in English.

Figure 4. Usage of English in various performances

Source: https://southbaltic.eu/-/bbvet-boosting-business-integration-through-joint-vet-education
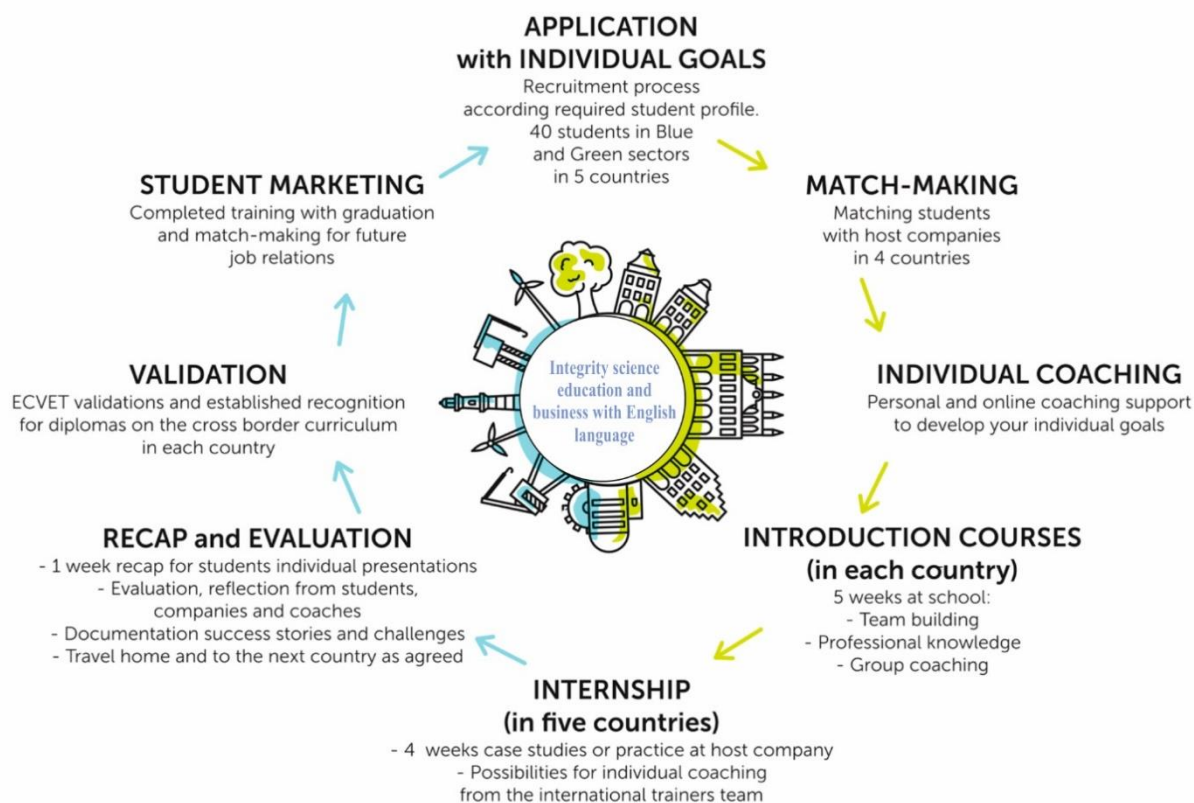
Building a culture of integrity in society necessarily begins with the education of young people. The knowledge, skills and behaviors they acquire now will shape their country's future, and will help them uphold public integrity, which is essential for preventing corruption. In the future, we plan to use the successful experience of using the English language as the training basis for the professional cycle disciplines in the profiles "History", "Economics", "Primary Education", "Preschool Education" in teaching the disciplines "Lexicology", "Foreign Language Pedagogical Discourse", " Theory of linguistic personality "and a number of other disciplines. Unfortunately, the level of applicants in these areas is not always sufficient for teaching in English, and in some areas the teaching of such disciplines as Foreign Literature, Introduction to Linguistics, Linguistics is conducted in Russian.

Discussion

After the centuries, when the international communication existed with help of translators, the humanity felt an urgent need in the lingua franca in the 20th century, when a number of great international organizations appeared, such as the United Nations (1945), the World Bank (1945), UNESCO and UNICEF (1946), the World Health Organization (1948), International Atomic Energy Agency (1957), the European Union (1993) and other. Although the United Nations and its various agencies have more than one working language, more often than not, English comes to be chosen as the preferred one for communicating among the participating member-nations [18].

The practical significance of our research is ensured by the possibility of using the findings in further studying the experience of teaching subjects in English in the preparation of professionals and applying the findings of our study in the search for modern models of training professionals. To sum up briefly, although not a new phenomenon, globalization has become the increasing trend in all the walks of life. One of the most important components of globalization is international communication, and the worldwide spreading of information would be hardly possible without the language, which is commonly understood and serves as a medium of communication across cultures.

Language is basic to social interactions, affecting them and being affected by them. Thus, the significance of the world languages under conditions of globalization is difficult to overestimate, and the following section of the paper looks into the issue of how the world languages respond the globalization challenges and analyzes the pre-requisites of English becoming the main language for communicating globally.

English has established itself as the *international language of business and commerce*14, and it is increasingly true as international trade expands extensively, bringing new countries into contact. English has been also used in international logistics, such as air traffic control, as a common language15. As an example, it can also be mentioned that many of the best MBA (the Master of Business Administration) programs worldwide are taught in English16, so the adequate communicative competence in English provide the companies' managerial staff with an opportunity to enjoy the best quality professional training.

Figure 5. Influence of English chain integrity

		ADVANTAGES	DISADVANTAGES
Mainstream public integrity values through curriculum	Introduce a specific course	• Provides a solid approach to education for public integrity • Ensures comprehensive coverage for all students • Enables in-depth review of content and development of skills for integrity and anti-corruption	• May require legislative change • Designing a curriculum framework and teaching/learning materials is costly and time consuming • Teacher training required • Risk of curriculum overload and/or repetition with existing courses (civics, history, etc.)
	Rewrite existing curriculum frameworks and develop teacher/student materials for each subject to incorporate learning outcomes	• Provides a solid approach to education for public integrity • Ensures comprehensive coverage for all students • Lessons can complement existing subjects, thus reducing risk of curriculum overload and repetition	• May require legislative change • Designing a curriculum framework and teaching/learning materials is costly and time consuming • Teacher training required
	Develop teaching/learning materials that support achievement of existing outcomes within existing subjects	• No curriculum change required • Provides teachers flexibility to incorporate education about public integrity into lesson plans • Shorter term implementation, requiring only the development of teaching/learning materials • Lessons can complement existing subjects, thus reducing risk of curriculum overload and repetition	• May require legislative change • Designing a curriculum framework and teaching/learning materials is costly and time consuming • Teacher training required • Risk of curriculum overload and/or repetition with existing courses (civics, history, etc.)
Training conducted by the public integrity body(ies)	The public integrity body(ies) provides tailored, on-request training to schools, with modules for specific learning outcomes	• Limited disruption to existing curriculum • Relatively low cost • Content can be tailored to specific school and modified based on feedback	• Requires staff to have training in interactive methods • May stretch logistical capacity of the public integrity body • Provides limited school coverage • Only fits an optional approach
Develop after-school integrity programmes	An after-school programme is developed, with modules for specific learning outcomes	• No disruption to existing curriculum • Relatively low cost • Content can be tailored to specific schools and modified based on feedback • Enables use of interactive teaching techniques	• Requires teacher champions to conduct the programmes • Potential for limited student involvement • Provides limited school coverage • Only fits an optional approach

Source: Education for Integrity, www.oecd.org/gov/ethics/integrity-education.htm P 6.

Education

It is a known fact that English plays a predominant role in the field of education all over the world. It has become a compulsion to learn English as most of the books of higher education are written in English. English has been widely used by the students as well as the teachers and researchers around the world as English is the main medium used in the various fields of education and it is the only language where the information is stored in the form of books and journals in both printed and electronic form. As there have been rapid changes in the field of educational system, the students can make use of the resources available all around the world just by accessing the internet.

Business

In the modern business world, English is widely used for all the international business, trade and commerce. As a global language, English serves the purposes of the multi-national companies' needs and it is being used as a tool of communication between one business organization and the other. Using the latest technologies in business, the mode of communication such as emails, letters, documentations, video, fax, telephone, etc. are mainly done in English. Graddol (1997) says, "About 80% people use English while they are in Europe. Not only in Europe, it is also used in global business which is happened under the control of World Trade Organization (WTO)

Conclusion

In this paper, the importance of English as a global language has been comprehensively discussed and some statistical data has also been given as evidence to prove that English is the only language that is internationally spoken and accepted language. First of all, the importance of English in the field of science and technology has been thoroughly discussed. Then, the importance of English in education has been discussed in detail. Later, the scenario of the international job market has been extensively discussed. Furthermore, the use of English in business has been highlighted. Hence, the essence of English for business organizations to use English as medium of their communication in order to continue their business relationships and promote their business has been clearly discussed.

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REDUCING POVERTY AND INVESTING IN PEOPLE FOR SAVING LIVES EVIDENCE FROM WORLD FOOD AND HUNGER CRISES FOREWORD

Abstract: In spite of several projects have been completed by World Bank Group and other international organizations in order to reduce poverty since 1944, the number of people living in extremely poor conditions, globally remains unacceptably high. According to World Bank's record currently there are 43 countries in the world with the highest poverty rates [1]. This paper examines the impact of particular sectors of economy on dealing with the issue. Main purpose can be defining as clarifying concept of poverty with causes and effects in various forms of economic development model and analyzing how to solve in the context of world economic crises prospective. Results suggest that development in financial sector can considerably contribute to poverty alleviation. Conclusions has been drawn as different point of views like international recommendations, theories, law. Enforcement and practice as far as in Uzbekistan case as well.

Key words: humanity, living style, geographic factor, economic model, integration, international community, collaboration

Language: English

Citation: Isaev, K. (2020). Reducing poverty and investing in people for saving lives evidence from world food and hunger crises foreword. ISJ Theoretical & Applied Science, 04 (84), 455-463.

Soi: http://s-o-i.org/1.1/TAS-04-84-80   Doi: cross https://dx.doi.org/10.15863/TAS.2020.04.84.80

Scopus ASCC: 2000.

Introduction

Since ancient times, a considerable part of humankind has been suffering from lack of income and productive resources to ensure sustainable livelihoods. For realizing the relevance of this global issue, we had better look at some miserable cases that are worth to be taken into consideration. When looking beyond income to people experiencing deprivation in health, education, and living standards, 1.3 billion people (660 million out of all are children) in 104 developing countries, which accounts for 74% of the world's population, live in multidimensional poverty, according to a 2018 survey by the U.N. Development Program [2]. Moreover, recent estimates for global poverty are that 8.6% of the world, or 736 million people, live in extreme poverty on $1.90 or less a day, according to the World Bank [3].

East Asia and the Pacific and Europe and Central Asia, have less than 3% of their populations living in extreme poverty, already successfully reaching the 2030 target to eradicate global poverty. But In the Middle East and North Africa, the number of people living in extreme poverty nearly doubled in two years, from 9.5 million to 18.6 million, mainly due to the crises in Syria and Yemen.

The purpose of this article is to explore the types of poverty, how to measure them, define the indicators which have substantial impact on poverty rate and find the potential ways to overcome the global issue. On the first place the research goes on analyzing the categories of poverty. Then, we discover the international standards of calculating them, and study the international indexes which contribute to evaluating the poorness state of countries.

Clarivate Analytics indexed

City Development Strategies were developed in the context of the Cities Alliance, an international alliance of local authorities, donors and private sector launched by the World Bank and UNCHS (Habitat) in 1999.

It has two clearly defined aims:

1. To co-ordinate a process through which local stakeholders define their vision of the city and formulate a City Development Strategy, focusing particularly on economic and social needs.

2. To improve the living conditions of the urban poor through slum upgrading efforts.

Cities Alliance (2000) state that CDS is concerned with the following:

Good Governance - through sustainable, environmentally friendly, decentralized approaches, creating space for civic engagement and delivering equitable, efficient and transparent solutions to urban problems.

Enablement - through the creation of a legal and institutional framework that empowers local authorities to reduce poverty and improve productivity and standards of living.

Capacity Building the development of human resources and the creation of the institutional and legal frameworks required allowing diverse stakeholders to participate in public policy making and be informed of its outcomes.

Vibrant markets, including those in the informal sector. The World Bank's perspective differs slightly and stresses the need to achieve:

Governability- accountable local government and the institutionalization of participatory processes in decision making and urban service delivery.

Bankability- sound financial systems that enable cities and their inhabitants to gain access to the financial resources required for investment and growth.

Competitiveness- based on each city developing its economic strengths in order to find an economic niche in the national and international context.

Livability- improved environmental circumstances, particularly for the poor.

I. THEORITICAL BASIS

1.1. Types of poverty

Historically, poverty has been calculated based on a person's income and how much he or she can buy with that income, today the concept of poverty is categorized into multidimensional and extreme poverty.

Multidimensional poverty acknowledges that poverty is not always about income. Sometimes a person's income might be above the poverty line, but their family has no electricity, no access to a proper toilet, no clean drinking water, and no one in the family has completed six years of school. Since 2015, the World Bank has defined *extreme poverty* as people living on $1.90 or less a day, measured using the international poverty line. But extreme poverty is not only about low income; it is also about what people can or cannot afford. Extreme poverty is identified in two ways: absolute poverty and relative poverty.

Absolute poverty is when a person cannot afford the minimum nutrition, clothing, or shelter needs in their country. Relative poverty is a household income below a certain percentage, typically 50% or 60%, of the median income of that country. This measurement takes into consideration the subjective cost of participating in everyday life. For example, plumbing is a necessity in some places; without plumbing, a person could be considered impoverished. However, in other places plumbing is a luxury. Relative poverty is useful for considering income inequality within a country.

A commonly used monetary indicator is the value of a basic basket of goods, which is subsequently used to define a number of poverty indicators including the:

Poverty rate - the percentage of people who cannot afford basket of goods;

Poverty gap - the gap between a person's income and the poverty line; and

Income distribution - presented in the form of the Gini coefficient

2.2. Measurement of poverty

Poverty is measured by each country's government, which gathers data through household surveys of their own population. World Bank Group provide support and may conduct their own surveys, but this data collection is time-consuming and slow. Calculating of poverty rates is considered as being as an essential process which directly affects the economy of countries. Particularly, in low- and middle-income countries, understanding poverty levels is important for generating policy, targeting development initiatives, and monitoring and evaluating economic progress over time.

Poverty is calculated by the method, which is called poverty line (poverty threshold, poverty limit, breadline). The term firstly developed in 1964-1965 by Mollie Orshansky, an economist working for the Social Security Administration [5].
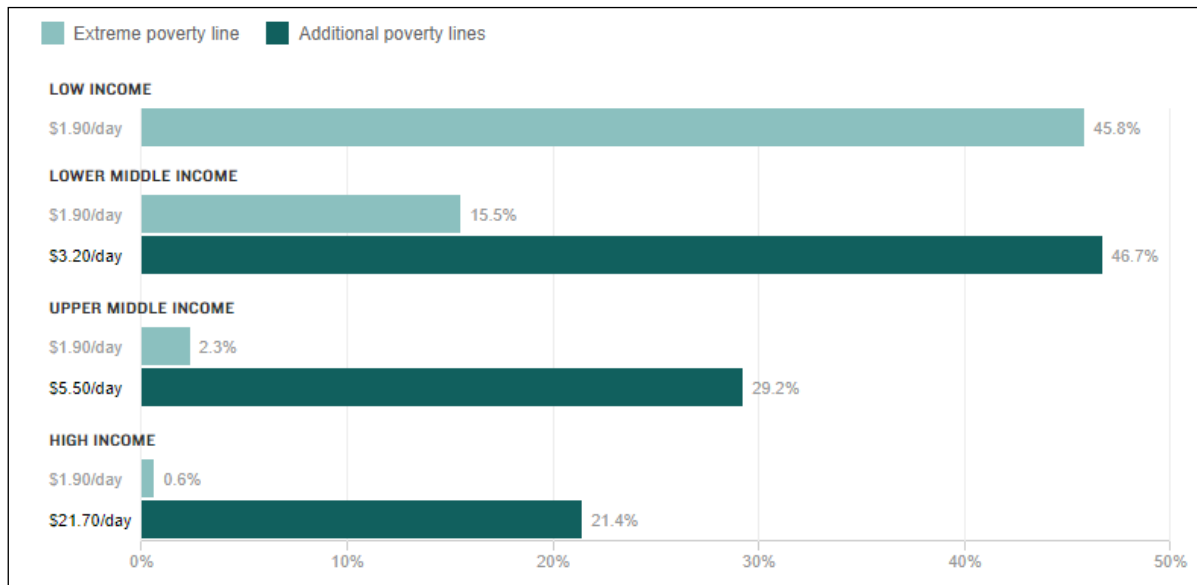
A poverty line is classified into two major categories: national and international.

National poverty line is the minimum level of income deemed adequate in a particular country. The line is determined in each country by adding up the cost of meeting minimum needs, such as food and shelter. Household incomes that are too low to afford minimum needs, such as food and shelter, are below the poverty line. National poverty lines are not the same in all countries. In higher income countries, the cost of living is higher and so the poverty threshold is higher, too. Below u can see the difference between median national poverty lines in countries grouped into categories by World Bank in 2017.

Figure 1: National poverty lines in grouped countries

• $1.91 per person per day — in 33 low-income countries

• $3.21 per person per day — in 32 lower-middle-income countries, such as India and the Philippines

• $5.48 per person per day — in 32 upper-middle-income countries, such as Brazil and South Africa

• $21.70 per person per day — in 29 high-income countries

The international poverty line is the standard poverty line for measuring poverty globally. The international poverty line, currently set at $1.90 a day, is the universal standard for measuring global poverty. This line helps measure the number of people living in extreme poverty and helps compare poverty levels between countries.

As the cost of living increases, poverty lines increase too. Since 1990, the international poverty line rose from $1 a day, to $1.25 a day, and most recently in 2015 to $1.90. This means that $1.90 is necessary to buy what $1 could in 1990.

There are several international indicators, that are considered to evaluate the poverty rate: MPI (Multidimensional Poverty Index), HDI (Human Development Index), GDI (Gender Development Index), GII (Gender Inequality Index), Gini index, and others.

2.3. Multidimensional Poverty Index (MPI)

The Multidimensional Poverty Index (MPI) looks beyond income to understand how people experience poverty in multiple and simultaneous ways. It identifies how people are being left behind across three key dimensions: health, education and standard of living, comprising 10 indicators. People who experience deprivation in at least one third of these weighted indicators fall into the category of multidimensionally poor. Below you can see the conditions which cause those 10 indicators in Table 1.

Table 1. Identifying indicators of multidimensional poverty

Dimensions of poverty	Indicator	Deprived in the living in the household where…	Weight
Health	Nutrition	An adult under 70 years of age or a child is undernourished.	1/6
	Child mortality	Any child under the age of 18 years has died in the 5 years preceding the survey.	1/6
Education	Years of schooling	No household member aged 10 years or older has completed six years of schooling.	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class 8.	1/6
	Cooking fuel	The household cooks with dung, wood, charcoal or coal.	1/18

	Sanitation	The household's sanitation facility is not improved (according to SDG guidelines).	1/18
	Drinking water	The household does not have access to improved drinking water(according to SDG guidelines) or safe drinking water is at least a 30-minute walk from home, round trip.	1/18
Standard of living	Electricity	The household has no electricity.	1/18
	Housing	Housing materials for at least one of roof, walls and floor are inadequate; the floor is of natural materials and/or walls are of natural or rudimentary materials .	1/18
	Assets	The household does not own more than one of these assets; radio, TV, telephone, computer, animal cart, bicycle, motorbike or refrigerator, and does not own a car or truck.	1/18

This standard enables analysis of patterns of poverty: how much each indicator and each dimension contributes to overall poverty.

2.4. Human Development Index (HDI)

The Human Development Index (HDI) is a measurement developed by the United Nations to measure and various countries' levels of social and economic development. It is composed of four principal dimensions: long and healthy life, knowledge, a decent standard of living.

The health dimension is assessed by life expectancy at birth, the education dimension is measured by mean of years of schooling for adults aged 25 years and more and expected years of schooling for children of school entering age. The standard of living dimension is measured by gross national income per capita.

HDI coefficient vary between 0 – 1 or 0% - 100%. When coefficient reaches close to one, it means that a country's level of social and economic development is high. And vice versa, when HDI coefficient is close to zero, country is considered as being socially and economically poor.

- 0.800 – 1.000 – very high
- 0.700 – 0.799 – high
- 0.550 – 0.699 – medium
- 0.350 – 0.549 – low
- 0.000 – 0.349 – very low

2.5. The role of economic sectors in poverty reduction.

This sector is dedicated to investigate whether the development in particular economic sectors, such as financial sector and agricultural sector matter for the speed of poverty reduction.

According to the PhD in economics Johan Rewilak (2017), financial deepening has the greatest poverty reducing effect followed by increasing physical financial access. Even though, financial instability and banking sector inefficiency have no harmful effects on poverty reduction [6].

The research by Asian Development Bank (2009) proved that financial sector development has a vital role in supporting poverty reduction—directly through broadening the access of the poor to financial services and indirectly through promoting economic growth—provides a strong justification for development assistance to target the financial sector as a core area of intervention [7].

According to the evidence by Kamel Bel Hadj Miled and Jalel-Eddine Ben Rejeba (2015) a country with a higher microfinance institutions' gross loan portfolio per capita tends to have lower poverty head count ratio [8].

During the research of correlation between agricultural sector and poverty reduction, we came across with resembling conclusions of authors of articles.

According to one of the articles of journal Elsevier: "Agriculture, structural transformation and poverty reduction: Eight new insights", the growth in agriculture is in general (two to three times) more effective at reducing poverty than an equivalent amount of growth generated outside agriculture remains confirmed [9].

OECD conducted a study into the effect of agricultural progress to poverty reduction. Organization looked at the experiences of 25 countries that made the fastest progress in reducing poverty from 1980-2005. The survey has been carried out namely, on the amount of average contribution of income sources to poverty reduction. The study concluded that agricultural sector's contribution for poverty reduction accounted for 52% while, financial sector's share made up 35%, and non-agricultural activities 13% [10].

Luc Christiaensen, Lionel Demery and Jesper Kuhl (2006) analyzed the role of agriculture in poverty reduction. They explored the contribution of the sector to poverty reduction depending on four factors: its direct (1) and indirect (2) growth effects as well as its elasticity of total poverty to sectoral growth (3) and the sector's share in the overall economy (4), which together determine the sector's participation effect. Their study revealed that the participation effect from agriculture on the poverty head count on average is 2.2 times larger than the participation effect from non-agriculture [11].

II. RESULTS

In the sector of theoretical basis we analyzed the types of poverty, explored its measurements and defined the indicators which have substantial impact on poverty rate. As the result of learned skills, we composed a table, which enables us to compare the poverty rates of countries of different categories, such as high-income, upper-middle-income, lower-middle-income and low-income countries. Ten indicators help us evaluate the state of countries in Table 2.

Table 2. Overview of social capital development

		High-income	Upper-middle-income	Lower-middle-income		Low-income
		USA	Brazil	Uzbekistan	India	Afghanistan
1	Population in multidimensional poverty, headcount (%)	n.a.*	3.8	n.a.*	27.9	55.9
2	Human Development Index (HDI)	0.920 (15)	0.761 (79)	0.710 (108)	0.647 (129)	0.496 (170)
3	Gender Development Index (GDI)	0.991	0.995	0.939	0.839	0.723
4	Gender Inequality Index (GII)	0.182	0.386	0.303	0.501	0.575
5	Life expectancy (years)	78.9	75.7	71.6	69.4	64.5
6	Expected years of schooling (years)	16.3	15.4	12	12.3	10.1
7	Internet users, (% of population)	87.3	67.5	52.3	34.5	13.5
8	Urban population (%)	82.3	86.6	50.5	34	25.5
9	Population using improved drinking-water sources (%)	99	98	98	93	67
10	Population using improved sanitation facilities (%)	100	88	100	60	43

* n.a. – not available
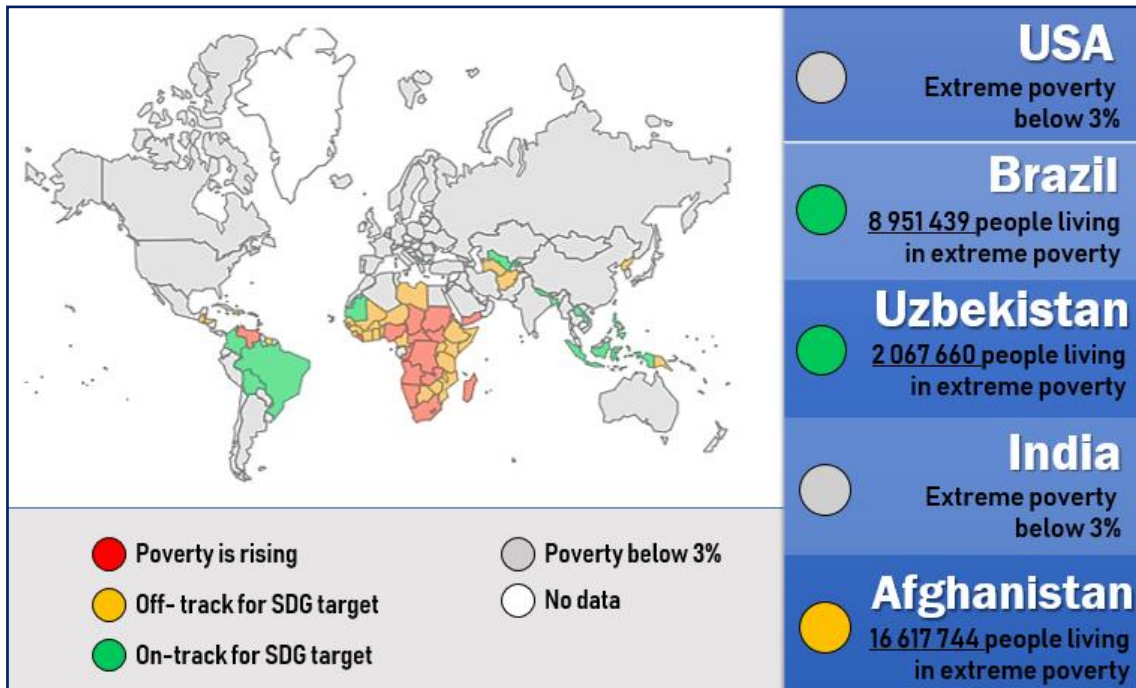**Source:** Human Development Reports (2019)

UNDP supported the establishment of the UN Partnership to Promote the Rights of Persons with Disabilities, mobilizing over US$2.9 million to facilitate full implementation of the Convention on the Rights of Persons with Disabilities. UNDP also hosts the technical secretariat for the partnership. In Costa Rica, the Fund is supporting the removal of barriers that prevent persons with disabilities from obtaining an adequate income through employment or entrepreneurship. As for he visually impairment people and deafness still effect global economic output by limited capital investment, resources, innovations, scientific and technical potentials of which are still under leak of financing and support by the government.

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Figure 2. People living in extreme poverty

Source: https://worldpoverty.io/map

Government must expand social and private partnership with such sector will affect reduction of poverty and increasing economic growth as a main human capital investment program and goals in regions

Poverty reduction strategies

• Accelerating and sustaining MDG progress;

• Developing capacity to plan, budget and implement pro-poor policies;

• Promoting the rights of persons with disabilities;

• Promoting employment through business and agricultural development;

• Measuring urban poverty;

• Strengthening resource management for sustainable human development;

• Mobilizing new sources of financing for development;

• *Understanding urban poverty;*

• *Nutrition.*

Eight essential conditions for strong changes in poverty reduction

• Specific country analysis of the binding constraints on growth and the policy actions likely to overcome them is essential in forming a growth strategy.

• Physical capital

• Human capital

• The rule of law

• Competitive markets

• Macroeconomic stability

• Infrastructure

• Openness to trade and investment

• Increased agricultural productivity

Figure 3. Integrity for poverty reduction program development
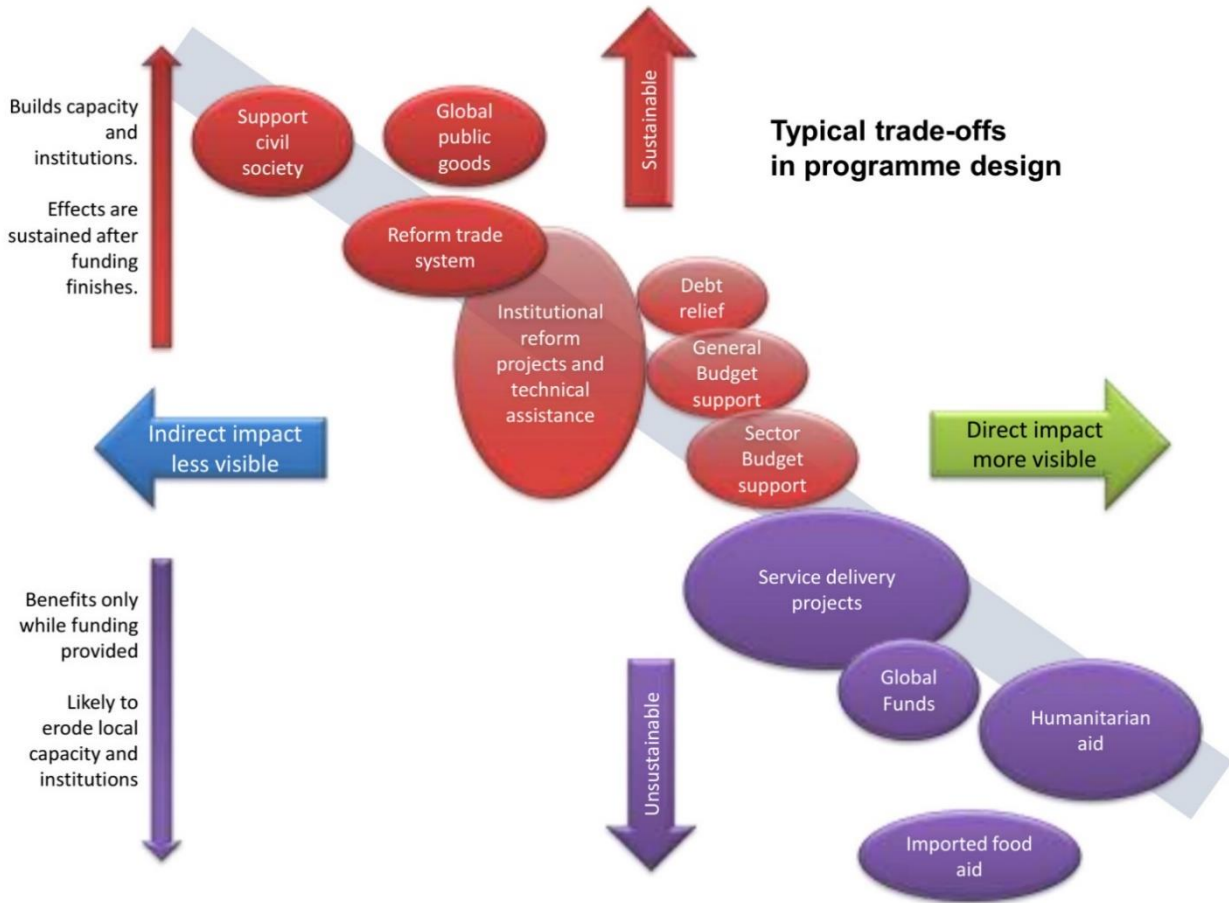
Source: Owen Barder, What Is Poverty Reduction? Center for Global Development, P 8.

Disability and poverty

Disability accentuates poverty because the systemic institutional, environmental and attitudinal barriers that people with disabilities encounter in their daily lives result in their entrenched social exclusion and their lack of participation in society (Groce et al., 2011, p. 1497). This leads to:

• discrimination, social marginalization and isolation;

• insufficient access to education, adequate housing, nutritious food, clean water, basic sanitation, healthcare and credit;

• lack of ability to participate fully in legal and political processes; and

• lack of preparation for and meaningful inclusion in the workforce (Woodburn, 2013, p. 80; Groce et al., 2011, p. 1497).

Figure 4. Disability and poverty allocation for economic equality

Source: http://povertyanddisabilityanotperspective.blogspot.com/2011/08/poverty-disability-cycle.html

In this case we should examine that investing human factor, social capital, human resource as long as people really need help, support, attention in forms of social dialog, communication and partnership. So, world community like UN, UNDP, OECD, ILO, WHO and other economic and financial institutions seriously taking account in small world as a unity and integrity about fighting poverty. It is clear that we are confronted with the following challenging tasks [12]:

1. Redefining existing institutions and structures to respond more effectively to the emerging world order;

2. Establishing new institutions to combat poverty at the global level; and

3. Forging new alliances and partnerships to strengthen collective efforts.

III. CONCLUSION

The findings of this study provide an insight about the relevance of the global poverty. By analyzing the overview of the issue, namely its types, standards of measurement, indicators that contribute to define its rate, and economic fields which may reduce the poverty in particular conditions. Poverty alleviation has been regarded as a big, serious, argumentative and even inevitable global problem from early past times till today. Many researches, investigetions have been carried out up to now. Several international organizations work on different projects which are targeted to end poverty, such as World Bank Group's goal to end extreme poverty by Agenda 2030.

But still too many questions are waiting for being answered and many problems are remaining unsolved. These complexities are expected to prevent ignorance and lead to new future researches.

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ABOUT THE KHNSR DELEGATION AUTHORIZED IN MOSCOW (1920)

Abstract: *The purpose of this article is to review the relationship between Khorezm People's Soviet Republic and RSFSR. After the overthrow of Khanate of Khiva, with the help of the Bolsheviks, the local Jadid democrats create a new state - the Khorezm People's Soviet Republic (KPSR). The leadership of Soviet Russia was the first to recognize and establish diplomatic relations with the KPSR. The Author of the article tries to highlight the history of mutual recognition between the countries, and the disagreements that existed in the process of establishing diplomatic ties.*

Key words: *Khanate of Khiva, Khorezm People's Soviet Republic, Russian Soviet Federative Socialist Republic, Embassy, relationship, contract, agreement.*

Language: *Russian*

Citation: Saidov, S. D. (2020). About the KHNSR delegation authorized in Moscow (1920). *ISJ Theoretical & Applied Science, 04 (84),* 464-468.

Soi: http://s-o-i.org/1.1/TAS-04-84-81   *Doi*: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.81

Scopus ASCC: 1202.

О ДЕЛЕГАЦИИ ХНСР, УПОЛНОМОЧЕННОЙ В МОСКВЕ (1920 г.)

Аннотация: *Данная статья посвящена изучению взаимоотношений Хорезмской Народной Советской Республики с РСФСР. После свержения Хивинского ханство, при помощи большевиков, местные демократы – джадиды создают новое государство – ХНСР. Руководство Советской России, первым признали и установили дипломатические отношения с ХНСР. Автор статьи старается осветить историю взаимопризнания между странами, и те разногласия, существовавшие в процессе установления дипломатических связей.*

Ключевые слова: *Хивинское ханство, Советская Россия, посольство, взаимоотношения, договор, соглашение.*

Введение

Согласно Гендимянскому договору, подписанному 12 августа 1873 года, Хивинское ханство переходит под протекторат Российской империи. Во внутренней политике ханство смогло сохранить традиционную форму управления и образ жизни, однако, события, произошедшие в феврале месяце, а также, революция, совершенная большевиками в октябре 1917 года привели к потрясению общественно-политической ситуации в Российской империи, что сильно повлияло на внутреннее положение в Хиве. Одержимые идеей «мировой революции», лидеры большевиков разработали для стран Востока так называемую концепцию «построения социализма, минуя капитализм». Этот политический эксперимент был осуществлен впервые именно в Хорезме. В результате «экспорта революции» 2 февраля 1920 года Хивинское ханство было ликвидировано, как независимое государство(1.с.23-24). Следует отметить, что в данном процессе приняли участие и местные патриоты – джадиды, ярые противники ханской власти, наивно поверившие обещанию большевиков об оказании им помощи в строительстве «справедливого общества трудящихся».

Хорезмские джадиды – сторонники демократических перемен, воодушевленные идеями народовластия, 7 апреля 1920 года создали Временное правительство, состоявшее из 10 назиров (министров) во главе с С.Ж.Султанмурадовым [2, с.4]. В национальное правительство вошли видные деятели джадидского движения – Полвонниёз Ходжи Юсупов[1], Баба Ахун Салимов[2], Назар Шоликаров и другие. Все они состояли в членстве партии «Младохивинцев», главной целью которого было создание национально-демократического государства на территории Хорезма [3, с.22]. Они стремились воплотить в жизнь идеи джадидов. По их инициативе 27-30 апреля 1920 года был созван первый курултай народных представителей страны, где по его решению было упразднено Хивинское ханство и провозглашена Хорезмская Народная Советская Республика [3, с.306]. (ХНСР). На курултае была принята первая конституция республики, в котором были определены правовые и организационные основы внешних отношений, а также права и обязанности уполномоченных государственных органов в зарубежных странах [5, с.41-43]. Согласно конституции, ЦИК ХНСР предоставлялось право организации и контроля уполномоченных государственных органов для ведения дел на международной арене от имени Хорезмской Республики [3, с.17]. На курултае также был утвержден новый состав правительства – Совета Назиров в количестве 15 человек. Председателем (Премьер-министром) правительства был избран видный джадид и лидер «Младохивинцев» – Полвонниёз Ходжи Юсупов, а министром иностранных дел Мулла Уроз Ходжа Мухаммедов (представлял в правительстве туркменские общины. – С.Ш) [6, с.12]. Полномочия министерства иностранных дел ХНСР было

зафиксированы в «Положении», утверждённом ЦИК Хорезмской Республики 21 июля 1921 года, где было указано, что установление дружественных отношений с другими странами, направление полномочных и постоянных представителей для ведения переговоров, подписание взаимовыгодных соглашений и договоров являются главными задачами данного министерства [5, с.113-114; 7, с.156].

С первых дней своей деятельности правительство ХНСР уделило особое внимание активизации внешних отношений с странами ближнего и дальнего зарубежья. Было понятно, что дальнейшая судьба хорезмского народа во многим зависело от отношений с РСФСР. Учитывая данный факт, молодая республика стремилась наладить дружественные отношения с Советской Россией. 29 апреля 1920 года на Курултае народных представителей Хорезма принимается решение о посылке делегации Хорезмской Республики в РСФСР [5, с.41-48]. Уполномоченная делегация была утверждена в следующим составе: 1. Баба Ахун Салимов – руководитель делегации, министр юстиции; 2. Молла Уроз Ходжа Мухамедов, член делегации, министр иностранных дел; 3. Молла Нур Мухаммад Бабаев, член делегации; 4. Джуманиёз Аллакулов, член делегации; 5. Мухаммад Рахим, член делегации; 6. Мухаммад Якубханов, член делегации; 7. Мулла Ибрагимов, член делегации [5, с.61; 8, с.221].

На делегацию были возложены задачи установления дипломатических отношений с Россией, подписания политических и торгово-экономических соглашений, и по мере возможности, налаживание контактов с другими странами мира, имеющими дипломатические представительства в Москве.[3] 11 июня 1920 года делегация ХНСР прибывает в Чарджоу, а 17-18

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[1] *Полвонниёз Ходжи Юсупов (1861-1936гг) – один из основателей движения джадидов и партии «Младохивинцев» в Хиве, представитель торговой интеллигенции Хорезма, был очень грамотным и образованным человеком, владел арабским, персидским и русским языками в совершенстве, по его инициативе в Хивинском ханстве, в апреле 1917 года, ещё при правлении Исфандиярхана (1910-1918 гг), был организован первый в Туркестане парламент – Меджлис, имевший в составе 30 представителей-депутатов из числа «Младохивинцев». После низложения Меджлиса духовенством Хивы при поддержке Исфандиярхана в ноябре 1917 года, он бежал в Ташкент, где возглавил деятельность патриотов Хорезма в борьбе против Ханского деспотизма (автор).

[2] *Баба Ахун Салимов (Баба Ахун сын Салим Ахуна) (1874-1929 гг) – работал на должности Казикаляна (главный судья) у Исфандиярхана, принимал непосредственное участие в движении и поддерживал идеи джадидов Хорезма, состоял в близких отношениях с Полвонниёзом Ходжи Юсуповым, активно участвовал в движении джадидов, избирался председателем Меджлиса Хивы, за несогласие утвердить незаконные по канонам шариата указов Хана, был снят с

должности Казикалаяна и отправлен в ссылку в Гурлен. После «хивинской революции» избирался в Курултай народных представителей, по предложению Полвонниёза Ходжи Юсупова вошёл в состав национального правительства в должности Назира Юстиции ХНСР (автор).

[3] Полвонниёз Ходжи Юсупов 1926 году написал «Эсдаликлар» («Мемуары»), который в 2000 году была издана в городе Ургенче с названием «Ёш Хиваликлар тарихи» («История Младахивинцев»), под руководством проф. М.Матниязова. В «Мемуарах» освещается история Хорезма период 1910-1924 года. Объективность и честность автора в освещении хода событий у исследователей не вызывает сомнения, так как он являлся непосредственным участником всех исторических процессов, а изложенные им факты во многом подтверждаются архивными документами, кроме того, очень много подробностей, описанных им, не встречаются в других источниках. Например, оказывается, руководитель делегации Баба Ахун Салимов тоже написал «Воспоминания», где подробно описал хронику событий на пути следования в Ташкент и Москву, встречи и переговоры с руководителями РСФСР. Данное свидетельство Баба Ахуна Салимова, по утверждению Полвонниёза Ходжи Юсупова, без изменений,

июня того же года в Ташкент, где встречается с представителями Туркестанской Республики. [5, с.48-49]. В результате переговоров с руководством Туркестанской Республики они добились принятия решения об отправке в Хорезм трех врачей, одного зубного врача с кабинетом, и одной акушерки, а также медикаментов и инструментария, в достаточном количестве для открытия и оборудования трех больниц с постоянными кроватями, и нескольких фельдшерских пунктов [5, с.51]. Кроме того, командируется десять учителей-мусульман для начальных училищ, один учитель пения и один учитель труда, дополнительно, некоторое количество учебных пособий и школьных принадлежностей. Для хозяйственных нужд было отпущено 50 тысяч пудов керосина и 50 тысяч пудов нефти, а также мануфактурные изделия. Взамен Туркестан из Хорезма получал хлопок, мерлушку, каракуль и прочее [5, с.51-52].

Делегация ХНСР прибыла в Москву после 20 июля 1920 года, о чём сообщила газета «Известия ВЦИК» [5, с.53]. По воспоминаниям Баба Охуна Салимова, 28 июля делегация прибыла в Москву [8, с.241-248]. Однако, по сообщениям из газеты, уже 23 июля делегация была официально принята Российскими представителями. Со стороны РСФСР в приеме приняли участие Министр Иностранных Дел РСФСР Г.В.Чичерин, заместитель МИД Л.М.Карахан, представитель Турккомиссии Элиава и Полномочный представитель РСФСР в ХНСР Ш.Измаилов. «Делегация пробудет в Москве для выработки политического и экономического соглашения» далее продолжает газета. [9; 4, с.53]. После долгих и сложных переговорных процессов, которые длились более пятидесяти дней, сторонам удалось согласовать текст соглашения. Но, заместитель МИД Л.Карахан и Полномочный представитель РСФСР в ХНСР Ш.Измаилов инициируют пересмотр текста соглашения, посчитав, что оно противоречит интересам России [8, с.289]. Заместитель МИД РСФСР Лев Михайлович Карахан вызывает к себе Бобо Ахуна Салимова и других членов Хорезмской делегации, где ознакомил их с теми изменениями, которые они сочли обязательным ввести в текст соглашения. А именно[4]:

1. Все отделения Хорезмской почты и телеграфа оставить в распоряжении Российского Правительства;

2. Хорезмское правительство должно признать право и привилегию людей русской национальности на бесплатное использование имеющихся свободных земельных участков на территории Хорезма;

3. Право ловли рыбы на Аральском море и в нижней части реки Амударья предоставить русским;

4. 16-статью проекта будущего договора полностью заменить другим текстом, отвечающим интересам России, так как здесь было указано, что ХНСР сохраняет право на самостоятельное осуществление внешних и внутренних государственных дел;

5. Ирригационные работы и прокладывание новых каналов для нужд Хорезма осуществляется во главе с Российскими специалистами, по их усмотрению;

6. Земли будущей железной дороги, по одному километру с каждой стороны, на протяжении всего пути отдать под контроль России;

7. Деньги для торговых договоров занимать только у русских банковских учреждений;

8. Заводы и фабрики бывшей Царской России, которые по первоначальному тексту должны были переданы без всяких условий в собственность ХНСР, теперь было предложено прислать специальную комиссию для изучения вопроса о возврате имущества бывшей власти на баланс новой России [8, с.29-300].

Изменения, предложенные большевиками, показали истинные замыслы руководителей, действия которых полностью противоречили ранее провозглашённым лозунгам, в которых было обещано право на самоопределение и свободу собственного устройства судьбы народами бывшей империи. Показательна позиция представителей Хорезмской делегации, особенно Баба Ахуна Салимова, который выступил с резким возражением в адрес инициаторов со следующими словами: «…если предложенные вами изменения будут внесены в текст соглашения, последствия окажутся в тысячи раз хуже для народа Хорезма подписанных договоров с Кауфманом и Галкиным»[5] [8, с.290-300]. Когда, сложившаяся ситуация обсуждалась на собрании делегации, он ещё более твердо высказал свою позицию: «Я категорически отказываюсь подписывать данный договор с дополнениями. Я никогда не соглашусь, чтобы

полностью приводится в его «Мемуарах», на страницах с 236 по 307. А у нас нет основания не доверять его словам (автор).
[4] *Перевод с узбекского на русский язык из книги Х. Ю. Полвонниёза «Эсдаликлар» («Мемуары») осуществлены Ш.Ж.Саидовым
[5] *Кауфман – генерал Царской России, завоевавший Хивинское ханство в 1873 году, инициатор Гандимеянского договора,

подписанного между странами 12 августа 1873 года, и в результате чего Хивинское ханство превратилось в полуколонию Российской империи.
*Галкин – генерал Временного Правительства, Военный комиссар и представитель России в Хиве, установивший там военную диктатуру в 1916 году, и жестоко подавивший восстание местного населения.

земля и водные богатства страны передавались в чужие руки, и народ Хорезма вновь стал рабом и угнетённым. Во время собрания у Карахана я всеми силами попытаюсь устранить все дополнения, внесённые Российской стороной» [8, с.291]. И действительно, Баба Ахун Салимов при следующей встрече с Л.М.Караханом критиковал позицию большевиков со словами: «... я думаю, что если это оговорки будут внесены в наши договора, и об этом услышат в других странах, то тогда Правительство Советской России потеряет свой авторитет перед народами Востока. Даже ребёнку с Востока будет понятно, ознакомившемуся с текстом, что данный договор ничем не отличается от тех, которые составлял Николай* с малыми народами» [8, с.292]. Здесь Баба Ахун Салимов продемонстрировал себя как высокообразованный человек, обладающий талантом дипломата, хорошо знающим международное право и как искренний патриот своего народа: «…каждое внесенное дополнение я оспаривал с конкретными доказательствами», – пишет он в своих «Воспоминаниях» [8, с.292].

Продолжая продвигать интересы Хорезмской Республики, он лично встречается Министром Иностранных дел РСФСР Г.В.Чичериным и председателем Совета Народных Комиссаров РСФСР В.И.Лениным, где излагает позицию Хорезмской делегации. Баба Ахун Салимов при встрече с Чичериным в ультимативной форме выразил своё несогласие со следующими словами: «... если договора не будут составлены в изначально согласованной форме, то тогда разрешите вернуться на родину, такое соглашение нам не надобно» [8, с.294].

Настойчивость Полномочных представителей скоро дало результаты, и руководители России подписали первоначально согласованный вариант договора. 13 сентября 1920 года между РСФСР и ХНСР были составлены следующие договора: 1. Союзный договор; 2. Экономическое соглашение; 3. Военный договор [11, с.46-50; 5, с.55-64]. Договора подписывали со стороны РСФСР Министр иностранных дел Г.В.Чичерин, заместитель Министра иностранных дел. Л.М.Карахан, со стороны ХНСР – Баба Ахун Салимов – руководитель делегации, министр юстиции, Молла Ораз Ходжа Мухамедов, член правительства ХНСР, Молла Нур Мухаммад Бабаев, член делегации [10, л. 128, 129: 5, с.55-64]. 1-я статья «Союзного договора» гласила, что: «…Россия безоговорочно признает полную самостоятельность и независимость Хорезмской Советской Народной Республики, …на вечные времена отказывается от всех тех прав, которые были установлены прежними российскими правительствами по отношению к Хорезмской республике» [10, л.128,129: 5, с.56]. В 3-4 статье

определяются вопросы собственности: «РСФСР передает независимой ХНСР все принадлежащее Российской республике, российским государственным учреждениям как по праву собственности, так и по праву пользования, недвижимое имущество, как-то: земли, водные пространства, городские участки, строения, заводы, фабрики, расположенные в пределах ХНСР», «РСФСР признает собственностью ХНСР все капиталистические предприятия, принадлежащее российским гражданам и обществам, а равно и имущество, принадлежащее этим предприятиям» [11, л.128,129: 5, с.56]. Конечно, были статьи, усложняющие и ограничивающие вход ХНСР в мировую политику и международный рынок. Но, несмотря на это, результаты работы делегации стали большой победой представителей молодой Хорезмской республики и их серьёзным дипломатическим успехом на международной арене, с учётом снятия тех оговорок, которые руководители РСФСР хотели внести в текст договора.

Во время пребывания в Москве Хорезмская делегация встречается с представителями других стран, например, с дипломатами из Турции Назимом Садиком, Ате Туле, доктором Пуватбеком и военным министром Турецкой республики Анвар Пашой, где договаривается о помощи в создании национальной армии ХНСР. Так же проводятся двухсторонние переговоры с председателем Республики Татарстан С.Саидалиевым, Послом Ирана Мирза Гушангом, представителем Афганистана Мухаммад Валиханом. С Афганистаном было достигнуто соглашение об открытии Посольств в обеих странах [8, с.283].

В дальнейшем, в РСФСР, Иране, Турции, Афганистане, Азербайджане, БНСР и Туркестанской АССР были открыты дипломатические представительства ХНСР. Вместе с тем, на территории вышеуказанных государств были созданы торговые представительства. Соответственно, данные страны, также имели дипломатические представительства в Хорезме [10, л.46-47].

Таким образом, делегация ХНСР, побивавшая в Москве после 20 июля по середину сентября 1920 года, успешно завершила свою миссию, добившись признания ХНСР Советским руководством, благополучно преодолев те трудности и препятствия, искусственно чинимые в переговорном процессе представителями России. Им удалось подписать договора, охватывающие все стороны взаимоотношений, т.е. политические, экономические, военные и культурные сферы жизни. Некоторые части договоров усложняли работу представителей Хорезмской Республики с другими странами. Особенно экономическое

соглашение ограничивало выход ХНСР на мировой рынок. Но, несмотря на это, деятельность делегации Хорезма в Москве завершилась достаточно серьезным дипломатическим успехом на международной арене. Впоследствии дипломаты ХНСР благополучно работали в РСФСР, Иране, Турции, Афганистане,

Азербайджане, БНСР и Туркестанской АССР и несмотря на краткое историческое время существования республики в 1920-1924 годах, поддерживалось, довольно тесное торгово-экономическое сотрудничество с некоторыми западноевропейскими странами.

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PROPERTY LIABILITY FOR NON-PERFORMANCE OR IMPROPER PERFORMANCE OF DUTIES RELATED TO THE ORGANIZATION OF RAILWAY TRANSPORT

Abstract: *At the present stage of development of internal and international economic relations, the volume of cargo traffic increases every year. Against the background of the rising cost of fuel and components, transport companies are constantly searching for reducing the cost of the service without losing its quality. The solution is seen in the development and improvement of the quality of railway cargo transportation. One of the important places in the process of cargo transportation, no matter how it is carried out, is occupied by contractual relations and the consequences arising from them. Today, there are a number of legal nuances associated with the question of property responsibility for default or improper performance of duties related to organization of rail freight, as well as the extent and limits of such liability of each party (carrier, shipper and consignee).*

This article discusses the legal regulation of property liability of the parties in the organization of the process of railway transportation of goods.

Key words: *railway transportation, cargo transportation, non-performance, improper performance, organization of transportation, violation of obligations, property liability.*

Language: *Russian*

ИМУЩЕСТВЕННАЯ ОТВЕТСТВЕННОСТЬ ЗА НЕИСПОЛНЕНИЕ ИЛИ НЕНАДЛЕЖАЩЕЕ ИСПОЛНЕНИЕ ОБЯЗАННОСТЕЙ, СВЯЗАННЫХ С ОРГАНИЗАЦИЕЙ ЖЕЛЕЗНОДОРОЖНЫХ ПЕРЕВОЗОК

Аннотация: *На современном этапе развития внутренних и межнациональных экономических отношений с каждым годом возрастает объем грузопотока, на фоне роста стоимости ГСМ и комплектующих транспортные компании находятся в постоянном поиске снижения себестоимости услуги без потери ее качества. Выход видится в развитии и улучшении качества железнодорожных перевозок грузов. Одно из важных мест в процессе грузоперевозки, каким бы путем она не осуществлялась, занимают договорные отношения и вытекающие из них последствия. На сегодняшний день существует ряд правовых нюансов, относящихся к вопросам имущественной ответственности за неисполнение или ненадлежащее исполнение обязанностей, связанных с организацией железнодорожных перевозок грузов, а также степени и границ такой ответственности каждого из участников перевозки (перевозчик, грузоотправитель и грузополучатель).*

В данной статье рассматривается правовое регулирование имущественной ответственности сторон при организации процесса железнодорожной перевозки грузов.

Ключевые слова: *железнодорожные перевозки, грузоперевозки, неисполнение, ненадлежащее исполнение, организация перевозок, нарушение обязательств, имущественная ответственность.*

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Введение

Актуальность железнодорожных грузовых перевозок связана, прежде всего, с их надежностью и результативностью исполнения. Учитывая этот факт, исполнитель грузоперевозок должен не пренебрегать доверием миллионов граждан и юридических лиц и не нарушать принятых на себя обязательств. Со своей стороны, и другие участники процесса железнодорожных перевозок (грузоотправитель, грузополучатель и др.) должны действовать согласно установленным правилам и нормам, чтобы избежать предусмотренной в них ответственности.

Весь процесс перевозок грузов можно свести к многократно повторяющимся действиям по перемещению груза от начального пункта А до конечного пункта Б, в котором участвуют, как правило, три стороны: грузоотправитель, перевозчик (железная дорога) и грузополучатель.

Перевозки на железной дороге, в том числе и грузов, основываются на договорных взаимоотношениях. Договор перевозки грузов железнодорожным транспортом в настоящее время представляет собой один из составляющих элементов сложного юридического состава, находящегося в основе обязательства по осуществлению перевозки грузов железнодорожным транспортом [5, С. 173]. Рассматриваемый договор носит публичный характер, предполагает равные условия перевозки для заказчиков предполагаемой услуги по перевозке грузов. Другой составляющей правового состава грузоперевозок следует считать остальные обязательства, вытекающие из всего процесса организации перевозок (например, по предъявлению груза и его погрузке в поданные транспортные средства), то есть до принятия перевозчиком (железной дорогой) груза к перевозке. На основе этих двух элементов в настоящей работе будут рассмотрены и проанализированы обязательства, за нарушение которых устанавливается имущественная ответственность, а также выделены основные специфические черты такой ответственности.

Основная часть

В части первой Гражданского кодекса [1, гл. 25] определены общие принципы возникновения имущественной ответственности, возникающей из ненадлежащего исполнения договорных обязательств сторонами, которые предполагают наличие виновных действий (бездействий) правонарушителя. Однако имеется оговорка, согласно которой возможны исключения из вышеназванных правил, которые могут содержаться в специальных нормативных актах или договорах между сторонами.

Так, в ст. 793 ГК РФ [2] предусмотрено, что в случае неисполнения и ненадлежащего исполнения обязательств по перевозке стороны несут ответственность, установленную настоящим Кодексом, Транспортными Уставами и Кодексами, а также соглашением сторон.

Имущественная ответственность за нарушение обязательств по перевозке грузов железнодорожным транспортом, которые вытекают не только из договоров по перевозке, но и при организации перевозок в целом, имеет свои специфические черты, условия наступления которой заключаются в следующем:

1. Ограниченная ответственность, предполагающая взыскание лишь части убытков, что противоречит общему гражданско-правовому принципу возмещения убытков в полном объеме – реального ущерба и упущенной выгоды.

Как правило, при организации перевозок ответственность выражается в исключительной неустойке, либо в форме реального ущерба или его части. Тем не менее, ответственность в указных случаях обычно ограничивается лишь уплатой неустойки или штрафа. Убытки же подлежат взысканию в случаях и пределах, установленных ГК РФ, Уставом железнодорожного транспорта РФ (далее УЖДТ) [3], а иногда и соглашением сторон как указано в п. 1 ст. 793 и п. 1 ст. 794 ГК РФ.

Условно выделим несколько категорий обязательств при организации перевозок грузов железнодорожным транспортом, за неисполнение или ненадлежащее исполнение которых УЖДТ предусматривает ограниченную ответственность и виды такой ответственности с целью осмысления их вариативности (см. табл. 1).

Таблица 1

Основание ответственности	Статья, предусматривающая ответственность	Вид ответственности	Субъект ответственности
Обязательства, связанные с организацией ж/д перевозок (до принятия груза к перевозке)			
Неподача транспортных средств	Ст. 794 ГК РФ + ст. 94 УЖДТ	Штраф	Перевозчик
Неиспользование поданных транспортных средств	Ст. 794 ГК РФ + ст. 94 УЖДТ	Штраф	Грузоотправитель
Обязательства, вытекающие из договора перевозки			
Утрата, недостача груза	Ст. 796 ГК РФ + ст. 107 УЖДТ	Возмещение ущерба в размере стоимости утраченного или недостающего груза + возвращает отправителю (получателю) провозную плату	Перевозчик
Повреждение груза	Ст. 796 ГК РФ + ст. 107 УЖДТ	Возмещение ущерба в размере суммы, на которую понизилась его стоимость, а при невозможности восстановления поврежденного груза - в размере его стоимости + возвращает отправителю (получателю) провозную плату	Перевозчик
Просрочка доставки груза	Ст. 97 УЖДТ	Пени в размере 6% платы за перевозку грузов за каждые сутки просрочки, но не более чем в размере 50% платы за перевозку данных грузов	Перевозчик
За задержку подачи вагонов под погрузку и выгрузку грузов, подача под погрузку неочищенного подвижного состава	Ст. 100 УЖДТ, ст. 103 УЖДТ	Штраф	Перевозчик
Повреждение перевозчиком вагонов, контейнеров других организаций	Ст. 105 УЖДТ	Штраф в 5-кратном размере стоимости вагонов (повышенная ответственность!) + убытки в части, не покрытой штрафом	Перевозчик
Искажение в транспортной ж/д накладной наименований грузов, отправление запрещенных для перевозок ж/д транспортом грузов	Ст. 98 УЖДТ	Штраф в размере 5-кратной платы за перевозку таких грузов (повышенная ответственность!)	Грузоотправитель
За задержку вагонов грузоотправителем	Ст. 100 УЖДТ	Штраф	Грузоотправитель

Анализируя приведенные в Таблице 1 некоторые случаи предусмотренных мер ответственности за нарушение обязательств, понимая их ограниченность, следует отметить, что они установлены законодательством в различных формах. Это может быть только возмещение реального ущерба (например, ст. 796 ГК РФ, ст. 107 УЖДТ), исключая тем самым возмещение упущенной выгоды. В других случаях законодатель ограничивается только лишь

штрафом, что является стоимостным пределом ответственности, который может исчисляться как в процентном соотношении к различным категориям (стоимость груза, вагона и т.д.), так и в МРОТ в зависимости от количественной характеристики заданной категории. Существуют различные точки зрения правоведов на вопрос ограниченного размера ответственности, при этом Конституционный суд придерживается позиции, что ограниченная ответственность перевозчика имеет место быть, и она оправдана [6]. Кроме того, в ряде международных актов, ратифицированных Российской Федерацией, получил закрепление указанный принцип [8; 9]. Известный правовед Витрянский В.В. также указывает на то, что «в определенных случаях возможно ограничение размера ответственности по обязательствам. Ограничение права на полное возмещение убытков (ограниченная ответственность) допускается в случаях, предусмотренных законом» [10, с. 375].

2. Запрет на уменьшение или устранение нормативной ответственности перевозчика – еще одна особенность имущественной ответственности при организации перевозок, которая означает, что каждое намерение сторон (перевозчика, грузоотправителя, грузополучателя) в обязательствах по перевозке груза каким-либо образом *ограничить* или *устранить* имущественную ответственность, возложенную на перевозчика – железную дорогу, считаются недействительными.

Данное положение прямо закреплено в ч. 2 ст. 793 ГК РФ, ст. 114 УЖДТ, однако оно не исключает возможности соглашений перевозчика с грузоотправителями, грузополучателями, касающихся их ответственности друг перед другом, но лишь, если эта возможность прямо предусмотрена транспортными уставами (кодексами). При этом стороны могут договориться об *усилении ответственности перевозчика* за неисполнение или ненадлежащее исполнение обязательств (ст. 8 УЖДТ).

3. Возможность определения размера и пределов ответственности по соглашению сторон в установленных случаях, предусмотренная ч. 1 ст. 793, ч. 1 ст. 794 ГК РФ. Указанная норма работает в связке с предыдущим положением о запрете уменьшения или устранения нормативной ответственности перевозчика, то есть договариваться перевозчику и грузоотправителю можно обо всем, лишь бы это не шло в разрез с ч. 2 ст. 793 ГК РФ и ст. 114 УЖДТ.

4. Наступление ответственности без заключения договора. Это означает, что для

наступления неблагоприятных последствий для сторон во взаимоотношениях по поводу перевозки грузов не обязательно наличие заключенного договора.

В некоторых случаях ответственность за нарушение обязательств в процессе организации перевозок на железной дороге может возникать, в том числе, и из внедоговорных оснований, *предшествующих* заключению договора. Например, ответственность перевозчика за неподачу транспортных средств и отправителя за их неиспользование (ст. 794 ГК РФ) наступает в случае неисполнения или ненадлежащего исполнение обязательств, как при наличии соответствующего договора (или принятой заявки), так и при его отсутствии, но имеются основания полагать, что обязательства нарушены (например, наличие административного акта при поставках по государственному контракту). «По своей природе такая ответственность является гражданско-правовой» [7, С. 433].

5. Особое субъективное основание имущественной ответственности – презумпция вины перевозчика, в частности за утрату, недостачу или порчу груза.

Указанный принцип является исключением из п. 3 ст. 401 ГК РФ, когда предприниматель отвечает за неисполнение или ненадлежащее исполнение обязательства независимо от вины. Перевозчик на железнодорожном транспорте является коммерческой организацией, однако ответственность его ограничена наличием вины (которая, однако, презюмируется). Если он докажет, что обязательства нарушены не по его вине, а вследствие обстоятельств, предусмотренных законом, то он будет освобожден от ответственности (ст. 796 ГК РФ, ст. 95 УЖДТ). Общим правилам гражданско-правовой ответственности при организации перевозок, в том числе и на железнодорожном транспорте, следует статья 794 ГК РФ, которая предусматривает двухстороннюю ответственность перевозчика и грузоотправителя за невыполнение обязательства по предъявлению груза и подаче транспортных средств соответственно, наступающую независимо от вины обязанной стороны, на началах коммерческого риска.

На наш взгляд, наиболее уместно обстоятельства, освобождающие перевозчика и грузоотправителя (грузополучателя) от ответственности, разделить на группы следующим образом (см. рис. 1).

Безусловно освобождающие стороны от ответственности	Исключающие ответственность стороны, вызванные виновными действиями другой стороны	Освобождающие от ответственности, если вина не доказана
• непреодолимая сила, а также иные явления стихийного характера (пожары, заносы, наводнения) и военные действия (п. 2 ст. 794 ГК РФ, ст. 39, 116,117 УЖДТ); • прекращение или ограничение погрузки грузов в случаях, указанных в ст. 29 УЖДТ (ст. 116, 117 УЖДТ); • особые естественные свойства перевозимого груза (ст. 95 УЖДТ); • повреждение или недостача груза произошли в силу естественных причин, связанных с его перевозкой в открытом железнодорожном составе (ст. 118 УЖДТ); • недостача груза не превышает норму естественной убыли (ст. 118 УЖДТ).	• недостача или утрата груза произошли по причине недостоверных, неточных или неполных сведений, указанных в транспортной накладной (ст. 118 УЖДТ); • перевозку груза сопровождают представители отправителя или получателя (ст. 118 УЖДТ) • отсутствие признаков, свидетельствующих о не сохранности груза (ст. 118 УЖДТ).	• тара, в которой доставлен груз является исправной и не имеет следов вскрытия в пути (ст. 118 УЖДТ). • исправными являются вагоны и контейнеры в которых прибыл груз, а также защитная маркировка (ст. 118 УЖДТ); • исправность грузовых помещений с исправными пломбами отправителя (ст. 118 УЖДТ).

Рисунок 1 – Обстоятельства, освобождающие стороны от ответственности

Представленное деление (см. рис. 1) раскрывает особенности обстоятельств, которые являются основанием для освобождения от ответственности за неисполнение или ненадлежащее исполнение обязательств, вытекающих из отношений по организации и перевозке грузов на железнодорожном транспорте, которые зиждутся на признании принципа вины как основания ответственности перевозчика – «...если перевозчик не докажет, что утрата, недостача или повреждение груза были вызваны обстоятельствами, которые перевозчик не мог предотвратить и происшествие которых от него не зависело» [4].

6. Обязательное соблюдение претензионного порядка разрешения споров по перевозке груза, которое закреплено в п. 1 ст. 797 ГК РФ и ст. 120 УЖДТ. Правилами указанных статей предусмотрено соблюдение некоторых условий при предъявлении перевозчику подобной претензии:

• надлежащий субъект предъявления претензии – означает, что претензию может предъявить лишь ограниченный круг лиц, обозначенный всего 2 фигурами (грузоотправитель и грузополучатель), и только то лицо, которое указано в накладной, т.е. уступка права предъявления претензии не возможна.

• надлежащий адресат претензии (ст. 122 УЖДТ);

• обязательность предоставления всех необходимых документов, в том числе коммерческого акта;

• соблюдение установленного претензионного срока – 6 месяцев (а в отношении штрафов и пеней - в течение сорока пяти дней - ст. 123 УЖДТ).

Заключение

Рассмотренные особенности имущественной ответственности за неисполнение или ненадлежащее исполнение обязанностей, связанных с организацией железнодорожных перевозок, позволяют нам сделать вывод о том, что это довольно сложный вопрос, требующий осмысления, принятие некоторых мер по доработке соответствующего транспортного законодательства, чтобы оно не шло вразрез с общепринятыми нормами гражданского права.

Clarivate Analytics indexed

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MODELING OF REDUNDANCY -CANONICAL VARIABLES WITH VARIOUS DISPERSIONS

Abstract: The problem is solved in the article: for the given 5 matrices of eigenvectors of different dimensions (they were calculated using real data [6-10]), find 2 matrices A^+_{qp}, B^+_{pp} of eigenvectors containing all indicators from 5 matrices of eigenvectors C_{nn} [2- 6], the diagonal matrix $\Lambda^+_{pp}=diag (\lambda^+_1, ...,\lambda^+_p)$, $\lambda^+_1>...>\lambda^+_p> 0$, $\lambda^+_1+ ... +\lambda^+_p=p$, $q+p =n$, $p\leq q$ for the matrices A^+_{qp}, B^+_{pp}, 2 matrices U_{mp} and V_{mp} of the values of bi-orthogonal semantic excess-canonical variables with different variances: $(1/m)U^TU =\Lambda_{pp},(1/m)V^TV =\Lambda_{pp},(1/m)U^TV=\Lambda^{+2}_{pp}=diag (\lambda^{+2}_1, ..., \lambda^{+2}_p),\lambda^{+2}_1>...>\lambda^{+2}_p>0$. It is necessary to find the values of the elements of 2 model submatrices Z_{mq}, Z_{mp} matrix $Z_{mn}= [Z_{mq}/Z_{mp}]$, consisting of m = 44 values of n =6 +6 = 12 z-variables.

Key words: reasonable redundancy -canonical variables, knowledge indicators.

Language: Russian

Citation: Zhanatauov, S. U. (2020). Modeling of redundancy -canonical variables with various dispersions. ISJ Theoretical & Applied Science, 04 (84), 475-492.

Soi: http://s-o-i.org/1.1/TAS-04-84-83   Doi: crossref https://dx.doi.org/10.15863/TAS.2020.04.84.83

Scopus ASCC: 2604.

МОДЕЛИРОВАНИЕ ИЗБЫТОЧНО-КАНОНИЧЕСКИХ ПЕРЕМЕННЫХ С РАЗЛИЧНЫМИ ДИСПЕРСИЯМИ

Аннотация: В статье решена задача:для заданных 5 матриц собственных векторов разных размерностей (они вычислены по реальным данным [6-10]) найти 2 матрицы A^+_{qp}, B^+_{pp} собственных векторов, содержащих все индикаторы из 5 матриц собственных векторов C_{nn} [2-6], диагональную матрицу $\Lambda^+_{pp}=diag(\lambda^+_1,...,\lambda^+_p)$, $\lambda^+_1>...>\lambda^+_p>0$, $\lambda^+_1+...+\lambda^+_p =p$, $q+p=n$, $p\leq q$ для матриц A^+_{qp}, B^+_{pp}, 2 матрицы U_{mp} и V_{mp} значений би-ортогональных смысловых избыточно-канонических переменных с различными дисперсиями: $(1/m)U^TU=\Lambda_{pp},(1/m)V^TV=\Lambda_{pp}$, $(1/m)U^TV= \Lambda^{+2}_{pp}=diag(\lambda^{+2}_1,...,\lambda^{+2}_p)$, $\lambda^{+2}_1>...>\lambda^{+2}_p>0$. Требуется найти значения элементов 2-х модельных подматриц Z_{mq}, Z_{mp} матрицы $Z_{mn}=[Z_{mq}/Z_{mp}]$, состоящей из m=44 значений n=6+6=12 z-переменных.

Ключевые слова: смысловые избыточно-канонические переменне, индикаторы знаний.

Введение

Метод избыточных переменных изложен в статье [1], метод канонических переменных изложен в статье [2], метод избыточно-канонических переменных с одинаковыми дисперсиями (Прямая Модль АИКП)– в статье [3]. Избыточно-канонические переменные – результат последовательного преобразования матриц z-переменных методами избыточных, канонических переменных. Индексы избыточностей 4 пар множеств переменных исследованы в терминах RV-коэффициентов в статье [4].

Здесь излагается Обратная Модель Анализа Избыточно-Канонических Переменных (ОМ АИКП) с различными дисперсиями. В статье [5] мы сформировали новую структурную матрицу (Таблица 5 [5]) и провели моделирование рассматриваемых ниже матричных объектов.

Результаты указанного моделирования нас не удовлетворяют из-за несовпадения 2-х множеств дисперсий u– и v-переменных: $(1/m)U^T U=\Lambda^{(1)}_{pp}, (1/m)V^T V=\Lambda^{(2)}_{pp}$. Ниже удалось устранить эту асимметричность алгебраических свойств матриц U_{mq} и V_{mp}.

В ПМ АИКП [1] решается ПСЗ (однородная спектральная задача) вида $(\Psi_{12}\Psi_{21}-\Lambda^2)A_{qp}=0_{pp}$ для известной симметрической матрицы $\Psi_{12}\Psi_{21}$. решением ПСЗ является пара матриц (Λ^2_{pp}, A_{qp}), где $\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$ – матрица положительных собственных чисел, A_{qp} - матрица собственных векторов $\mathbf{a}_j=(a_{1j},…,a_{qj})^T$ j=1,…,p. Пара матриц (Λ_{pp}, A_{qp}) и матрицы Λ_{pp}, A_{qp} определяют другую матрицу B_{pp} собственных векторов $\mathbf{b}_j=(b_{1j},…,b_{pj})^T$ j=1,…,p, равную $\mathbf{B}_{pp}=\Lambda^{-1}\Psi_{21}A_{qp}$, при этом для матриц $A_{\mathbf{qp}}, \mathbf{B}_{pp}, \Lambda_{pp}$ верны равенства $A_{\mathbf{qp}}\Psi_{12}\mathbf{B}_{pp}=\Lambda_{pp}, A^T A=I_{pp}, B^T B=I_{pp}$. Заметим: здесь отсутствуют равенства $AA^T=I_{qq}, BB^T=I_{pp}$, т. Е. матрицы ортогогональны, но не ортонормированы. В нашей обратной задаче мы введем это условие ортонормированности (смотрите ниже).

Образуется 2-ая пара матриц $(\Lambda^+_{pp}, B^+_{pp})$, для которых верны равенства:$B^T B=I_{pp}, V_{mp}=Z_{mp}B_{pp}, (1/m)V^T V=I_{pp}$ (в обратной задаче: $(1/m)V^T V=\Lambda_{pp}$). Для матрицы A_{qp}, верны равенства: $U_{mp}=Z_{mq}A_{qp}, \mathbf{B}_{pp}=\Lambda^{-1}\Psi_{21}A_{qp}$, где $(1/m)U^T U=I_{pp}$ (в обратной задаче: $(1/m)U^T U=\Lambda_{pp}$). Матрица z-переменных $\{z_1,…,z_q,\}$ Z_{mq} и матрица z-переменных $\{z_{q+1},…,z_{q+p}\}$ Z_{mp} преобразуются в матрицы би-ортогогальных u- и v-переменных: $U_{mp}=Z_{mq}A^+_{qp}, V_{mp}=Z_{mp}B^+_{pp}, (1/m)U^T V=\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$.

В обратной задаче моделируются $A^+_{qp}, \mathbf{B}^+_{pp}$, удовлетворяющие ОСЗ видов $(Q_{qq}-\Lambda^2)A_{qp}=0_{qp}, (S_{qp}-\Lambda^2)B_{qp}=0$ для неизвестных симметрических матриц Q_{qq}, S_{qp}. Так как решаются ОСЗ для симметрических матриц Q_{qq}, S_{qp}, то матрицы $A^+_{qp}, \mathbf{B}^+_{pp}$ могут быть, в частности, ортонормированными. А при ортонормированном преобразовании стандартизованных матриц Z_{mq} и Z_{mp} получаемые матрицы $U_{mp}=Z_{mq}A_{qp}$ и $V_{mp}=Z_{mp}B_{pp}$ будут удовлетворять соотношениям ПМ ГК. Матрицы U_{mp} и V_{mp} будут матрицами главных компонент, будут иметь неодинаковые дисперсии $\lambda_1,…,\lambda_p$. Но матрицы Z_{mq} и Z_{mp} будем получать из матриц избыточно-канонических, умноженных на диагональную матрицу $\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$, а при при ортонормированном преобразовании каждая из матриц u- и v-переменных должна быть не ортогональной, а диагональной: $(1/m)U^T U=\Lambda_{pp}, (1/m)V^T V=\Lambda_{pp}, (1/m)U^T V=\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$. Моделирование 2-х матриц U_{mp}, V_{mp} би-ортогональных избыточно-канонических переменных производится при решении отдельной ОЗ с входным объектом $\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$. Эта Оптимизационная Задача 3 решается после получения модельных пар матриц $(A_{qp}, \Lambda^2_{pp}), (B_{pp}, \Lambda^2_{pp})$ в результате решений

Оптимизационной Задачи 1: $(A_{qp}, \Lambda^2_{pp})=> (A^+_{qp}, \Lambda^2_{pp})$, и Оптимизационной Задачи 2: $(B_{pp}, \Lambda^2_{pp})=> (B^+_{pp}, \Lambda^2_{pp})$ при начальных значениях элементов матриц A_{qp}, B_{pp} с включенными в нее заданными фиксированными значениями индикаторов извлекаемых знаний (Таблица 1, Таблица 2). В обратной задаче важны 2 матрицы собственных векторов $A^+_{qp}, \mathbf{B}^+_{pp}$ – матрицы индикаторов извлекаемых знаний [5]. Элементы диагональной матрицы Λ^2_{pp} моделируются одновременно с элементами матрицы собственных векторов A^+_{qp}. Диагональная матрица Λ^2_{pp} является входным объектом Оптимизационной Задачи 2: $(B_{pp}, \Lambda^2_{pp})=> (B^+_{pp}, \Lambda^2_{pp})$.

Матрица $\mathbf{B}^+_{pp}$ является матрицей собственных векторов неизвестной симметрической матрицы $Q^T_{pp}=Q_{pp}$ полного ранга. Но они существуют в обратной задаче совместно со своими парами: $(\Lambda^2_{pp}, A^+_{qp}), (\Lambda_{pp}, B^+_{pp})$.

Матрица $\mathbf{B}^+_{pp}$ моделируется зависимым от спектра $\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$, а спектр $\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$ моделируется совместно с матрицей A^+_{qp}. Спектр $\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$ имеет доминирующие элементы $\lambda^2_1,…,\lambda^2_\ell$ $(\lambda_1,…,\lambda_\ell)$, $\ell=3$, а наша рассматриваемая ниже матрицы собственных векторов $A^+_{qq}, \mathbf{B}^+_{pp}$ преобразуют матрицы U_{mp} (в дальнейшем она будет равна $Z_{mq}A_{qp}$ и V_{mp} (в дальнейшем она будет равна $Z_{mp}B_{pp}$) в стандартизованные матрицы Z_{mq} и Z_{mp}. Матрица U_{mp} моделируется в зависимости от диагональной матрицы $\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$, $\lambda_1>…>\lambda_p>0$, исходя из имеющейся матрицы U_{mp} такой что $(1/m)U^T U=I_{pp}$, далее она преобразуется так, что удовлетворяет равенству $\Lambda_{pp}=(1/m)U^T U$, При этом матрица U_{mp} ортогональных избыточно-канонических переменных умножается справа на диагональную матрицу $\Lambda^{1/2}_{pp}$, этим мы преобразуем одинаковые дисперсии u–переменных в различные дисперсии, не меняя сумму дисперсий (=p). Матрица U_{mp} ортогональных избыточно-канонических переменных преобразуется в матрицу главных компонент. Наивысшую роль в нашей модели играют матрицы собственных векторов A^+_{66} $\mathbf{B}^+_{pp}$ из соотношений $(\Psi_{12}\Psi_{21})A^+_{qp}=\Lambda^2 A^+_{qp}, Q_{pp}B^+_{pp}=\Lambda^2 B^+_{pp}, Q^T_{pp}Q_{pp}=I_{pp}$, где матрицы $\Psi_{12}\Psi_{21}$, Q_{pp} - неизвестные симметрические матрицы, имеющие нужные нам матрицы $(\Lambda^2_{pp}, A^+_{qp}), (\Lambda^2_{pp}, B^+_{pp})$. Матрицы собственных векторов A^+_{66} $\mathbf{B}^+_{pp}$ содержат индикаторы извлекаемых знаний. , они преобразуют матрицы U_{mp} и V_{mp} . Учитывая наивысшую роль матриц A^+_{66} $\mathbf{B}^+_{pp}$из ПМ АИКП назовем ортогональные избыточно-канонические u–переменные ***главными избыточно-каноническими переменными.***А матрицу V_{mp} мы моделируем матрицу V_{mp}, решая Оптимизационную Задачу 4. В ОЗ4 входными

объектами являются (Λ_{pp}, U_{mp}) выходным объект матрица V_{mp} такая, что удовлетворяет равенству $\Lambda_{pp}=(1/m)V^TV$, $(1/m)U^TV=\Lambda^2_{pp}=diag$ $(\lambda^2_1,…,\lambda^2_p)$. При этом матрица V_{mp} будет также матрицей *главных* ортогональных избыточно-канонических переменных. Так как A^+_{qp} $\mathbf{B}^+_{pp}$ являются матрицами индикаторов извлекаемых знаний (смыслов), то лучше называть *смысловыми избыточно-каноническими переменными.*

Полученные матрицы U_{mp}, $A^+_{qp}, V_{mp}, B^+_{pp}$, Λ_{pp} удовлетворяют соотношениям ПМ АИКП Схематически ПСЗ $(\Psi_{12}\Psi_{21})A_{qp}=\Lambda^2 A_{qp}$ обозначается так: $\Psi_{12}\Psi_{21}=>(\Lambda^2, A_{qp})$. Входным объектом ПСЗ является симметрическая $q\times q$-матрица $(\Psi_{12}\Psi_{21})$, а ее выходными объектами являются матрица собственных чисел $\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$ и матрица A_{qp} ортогональных собственных векторов $\mathbf{a}_j=(a_1,…,a_q)^T$, $j=1,…,p$. Входной объект ПСЗ - матрица $\Psi_{12}\Psi_{21}$, является квадратной симметрической матрицей: $(\Psi_{12}\Psi_{21})^T=\Psi_{12}\Psi_{21}$, а ее решение – пара матриц (Λ^2, A_{qp}) таковы, что выполняются равенства: $(\Psi_{12}\Psi_{21})A_{qp}=\Lambda^2 A_{qp}$ $\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$, $\lambda_1>…>\lambda_p>0$. Матрица A_{qp} является ортогональной матрицей. Модельные матрицы A_{qp} и B_{pp} должны иметь алгебраические свойства ортогональных матриц: $A^TA=I_{pp}, B^TB=I_{pp}$. Модельная подматрица $U_{mp}=Z_{mq}A_{qp}$, должна быть вычислена с применением матрицы A_{qp}, а матрица $\mathbf{B}^+_{pp}$ должна быть матрицей собственных векторов неизвестной симметрической матрицы и соответствовать своей матрице собственных чисел $\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$: $Q_{pp}\mathbf{B}^+_{pp}=\Lambda_{pp}\mathbf{B}^+_{pp}$, $\mathbf{B}^{+T}_{pp}\mathbf{B}^+_{pp=}$ $\mathbf{B}^+_{pp}\mathbf{B}^{+T}_{pp}=I_{pp}$. $Q_{pp}=Q^T_{pp}$ – неизвестная симметрическая матрица полного ранга.

Модельная подматрица $V_{mp}=Z_{mp}B_{pp}$ – с избыточно применением матрицы B_{pp}. Матрицы U_{mp} и $V_{mp}=Z_{mp}B_{pp}$ имеют свойства: $]:(1/m)U^TU=I_{pp}$, $(1/m)V^TV=I_{pp}$, $(1/m)U^TV=\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$. Схематически эта последедовательность этапов выглядит так: $(A_{qp},\Lambda^2_{pp} \rightarrow A^+_{qp}$; $(B_{pp},\Lambda^2_{pp}) \rightarrow (B^+_{pp})$; $(A^+_{qp}, B^+_{pp}) \rightarrow (U_{mp} V_{mp})$; $(U_{mp},V_{mp}) \rightarrow (Z_{mq},Z_{mp})$. Здесь матрицы A_{qp},B_{pp} содержат небольшое число индикаторов $|c_{kj}|\geq c_0$, извлеченных знаний из 5 соответствующих матриц собственных векторов C_{nn} [2-6]. Когнитивные модели извлечения знаний из 5 реальных телекоммуникационным данных описаны в статьях [2-6]. В настоящей работе индикаторы из 5 матриц объединены в отдельне 2 матрицы A_{qp}, B_{pp} (они преобразовываются в матрицы A^+_{qp},B^+_{pp}) и приобретают новые статусы «извлекаемых» других знаний, теперь соответствующих разнородным реальных данным из 5 таблиц [2-6].

В ПЗ АИКП [7] предполагается известной квадратная симметриическая матрица $(\Psi_{12}\Psi_{21})^T=\Psi_{12}\Psi_{21}$. И ОЗ АИКП эта матрица неизвестна, в ней мы не нуждаемся. Схематически последовательность этапов в ПМ АИКП [1-5] $\Psi_{12}\Psi_{21}\rightarrow(A_{qp},\Lambda^2_{pp}\rightarrow(A_{qp},\Lambda_{pp})\rightarrow(B_{pp})$; $(A_{qp},B_{pp})\rightarrow(U_{mp},V_{mp})$. Этапа $(U_{mp},V_{mp})\rightarrow(Z_{mq},Z_{mp})$ в ПЗ АИКП нет. Схема ОЗ АИКП $(A_{qp},\Lambda^2_{pp} \rightarrow A^+_{qp}$; $(B_{pp},\Lambda^2_{pp}) \rightarrow (B^+_{pp})$; $(A^+_{qp},B^+_{pp})\rightarrow(U_{mp} V_{mp})$; $(U_{mp},V_{mp}) \rightarrow (Z_{mq},Z_{mp})$ длиннее одним этапом: $(U_{mp},V_{mp})\rightarrow(Z_{mq},Z_{mp})$.

Преобразование пары u- и v-переменных в пару множеств z-переменных на этапе $(U_{mp},V_{mp})\rightarrow(Z_{mq},Z_{mp})$ необходимо для получения модельных числовых данных Z_{mq},Z_{mp}. Эти матрицы данных Z_{mq},Z_{mp} имеют 2 матрицы A^+_{qp},B^+_{pp} индикаторов извлеченных знаний. Извлеченные знания и их когниивные модели извлечения изложены в статьях [1-5]. Главной целью постановки ОЗ АИКП является соединение матриц индикаторов ранее извлеченных разных знаний в одну матрицу индикаторов. И найти для них соответствующую пару матриц Z_{mq} и Z_{mp} :$Z_{mn}=[Z_{mq},Z_{mp}]$.

Рассмотрим ОЗ АИКП с неизвестной квадратной симметрической матрицей: $(\Psi_{12}\Psi_{21})^T=\Psi_{12}\Psi_{21}$. В ОЗ АИКП введем 2 новых, удобных (для извлечения знаний) матрицы условия:

1) модельные матрицы A^+_{qp} и B^+_{pp} должны быть ортонормированными;

2) каждая из матриц дисперсий$(1/m)$ U^TU, $(1/m)V^TV$ u- и v-переменных должна быть не единичной, а диагональной матрицей: $(1/m)U^TU=\Lambda_{pp}$, $(1/m)V^TV=\Lambda_{pp}$;

3) $(1/m)U^TV=\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$.

Условие 2 вытекает из Условия 1, ибо при ортонормированном преобразовании стандартизованных матриц Z_{mq} и Z_{mp} получаемые матрицы $U_{mp}=Z_{mq}A_{qp}$ и $V_{mp}=Z_{mp}B_{pp}$ будут удовлетворять соотношениям ПМ ГК. Матрицы U_{mp} и V_{mp} будут матрицами главных компонент, будут иметь неодинаковые дисперсии $\lambda_1,…,\lambda_p$.

Ортонормированные матрицы A_{qp}, B_{pp} из ПМ АИКП [8] обеспечивают би-ортогональность матриц U_{mp}, V_{mp} : $(1/m)U^TV=\Lambda^2_{pp}=diag(\lambda^2_1,…,\lambda^2_p)$. Подматрица $Z_1=Z_{mq}$ преобразется с применением ортонормированной матрицы $A_{qp}:(1/m)U^TU=\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$,: $(1/m)U^TU=\neq I_{pp}$, подматрица $Z_2=Z_{mp}$ преобразуется с применением ортонормированной матрицы B_{pp} : $(1/m)V^TV=\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)=\neq I_{pp}$, решение которого является только положительные собственные числа [1]. В ОЗ АИКП вместо *одинаковых* дисперсий u- и v–переменных $diag(1,…,1)$ в ОМ АИКП будем иметь *различные* дисперсии u- и v–переменных: $diag(\lambda_1,…,\lambda_p)=\neq I_{pp}$. Сумма дисперсий не меняется, она рава p. Неодинаковость дисперсий u- и v–переменных и наличие 2-х, 3-х доминирующих значений $\lambda_1,…,\lambda_p$ придает нашей модели (ОМ АИКП) полезное когнитивное свойство: матрицы A_{qp}, B_{pp} из ОМ АИКП содержат индикаторы извлекаемых знаний. В ПМ АИКП матрицы A_{qp}, B_{pp} не

обладают этими когнитивными свойствами. Итак ОЗ АИКП формулируется следующим образом.

Математическая постановка задачи

Задача. Для заданной диагональной матрицы $\Lambda_{pp}=diag(\lambda_1,\ldots,\lambda_p)$, $\lambda_1>\ldots>\lambda_p>0$, $\lambda_1+\ldots+\lambda_p=p$, требуется найти значения элементов 2-х модельных подматриц Z_{mq}, Z_{mp} матрицы $Z_{mn}=[Z_{mq}|Z_{mp}]$, состоящей из m значений n z-переменных. Матрица Z_{mq} состоит из m значений z-переменных $\{z_1,\ldots,z_q,\}$, матрица Z_{mp} состоит из m значений z-переменных $\{z_{q+1},\ldots,z_{q+p}\}$, n=q+p,q≥p.

Получаемые 2 модельные подматрицы Z_{mq}, Z_{mp} должны быть вычислены после *отдельных линейных преобразоаний*: модельных ортонормированных матриц A^+_{qp}, **B**$^+_{pp}$. 2 матрицы собственных векторов A^+_{qp}, **B**$^+_{pp}$ должны содержать индикаторы извлекаемых знаний [1] и должны совместно со своими парами: $(\Lambda^2_{pp},A^+_{qp})$, $(\Lambda^2_{pp},B^+_{pp})$, удовлетворять соотношениям $(\Psi_{12}\Psi_{21})A^+_{qp}=\Lambda^2A^+_{qp}$, $Q_{pp}B^+_{pp}=\Lambda^2B^+_{pp}$, $Q^T_{pp}Q_{pp}=I_{pp}$, где матрицы $\Psi_{12}\Psi_{21}$, Q_{pp} – неизвестные симметрические матрицы, имеющие нужные нам матрицы $(\Lambda^2_{pp},A^+_{qp})$,$((\Lambda^2_{pp},B^+_{pp})$.

Для моделирования подматриц Z_{mq}, Z_{mp} рекомендуется применить матрицы U_{mp} и V_{mp} значений би-ортогональных избыточно-канонических переменных. При ортонормированных преобразованиях - матрицах A^+_{qp},B^+_{pp}, матрицы U_{mp} и V_{mp} будут матрицами главных компонент – у-переменных, имеющих неодинаковые дисперсии $\lambda_1,\ldots,\lambda_p$. Линейным преобразоаниям должны подвергнуться 2 матрицы U_{mp},V_{mp} значений би-ортогональных избыточно-канонических переменных (biorthogonal canonical-redundancy) u- и v-переменных таких, что: $(1/m)U^TU=\Lambda_{pp}$, $(1/m)V^TV=\Lambda_{pp}$, $(1/m)U^TV=\Lambda^{+2}_{pp}=diag(\lambda^{+2}_1,\ldots,\lambda^{+2}_p)$, $\lambda^{+2}_1>\ldots>\lambda^{+2}_p>0$. Модельные матрицы A^+_{qp} и B^+_{pp} должны иметь алгебраические свойства ортонормированных матриц:$A^+A^{+T}=I_{qq}$, $B^+B^{+T}=I_{pp}$, $A^{+T}A^+=I_{pp}$,$B^{+T}B^+=I_{pp}$. Модельная подматрица Z_{mq} должна быть вычислена с применением матрицы A^+_{qp}, а модельная подматрица Z_{mp} – с применением матрицы B^+_{pp}. Ортонормированные матрицы A^+_{qp}, B^+_{pp} из ПМ АИКП [8] обеспечивают би-ортогональность пары матриц (U_{mp},V_{mp}): $(1/m)U^TV=\Lambda^{+2}_{pp}=diag(\lambda^{+2}_1,\ldots,\lambda^{+2}_p)$ и ортогональность стобцов в каждой из матриц U_{mp}, V_{mp}:$(1/m)U^TU=\Lambda_{pp}=diag(\lambda_1,\ldots,\lambda_p)$, $(1/m)V^TV=\Lambda_{pp}=diag(\lambda_1,\ldots,\lambda_p)$. Ортогональность присуща парам матриц (U_{mp},U_{mp}), (V_{mp},V_{mp}), а би-ортогональность - паре матриц (U_{mp},V_{mp}), $(1/m)U^TV=\Lambda^{+2}_{pp}=diag(\lambda^{+2}_1,\ldots,\lambda^{+2}_p)$.

Схематически реализация ОМ АИКП имеет вид: $(A_{qp},\Lambda^2_{pp})\rightarrow A^+_{qp}$; $(B_{pp},\Lambda^{+2}_{pp})\rightarrow (B^+_{pp})$; $(A^+_{qp},B^+_{pp})\rightarrow(U_{mp}\ V_{mp})$; $(U_{mp},V_{mp})\rightarrow(Z_{mq},Z_{mp})$.

Введенные математически в матрицы A_{qp},B_{pp} индикаторы извлеченных знаний остаются неизменными в матрицах A^+_{qp},B^+_{pp}. Этот факт является существенным преимуществом данной постановки О обратной Задаче (О З) АИКП.

Исходными предпосылками ОЗ являются следующие: множество z-переменных разделенны на 2 группы: в 1-ую группу объединены q z-переменные $z_1,\ldots,z_q$, во 2-ую –p переменные $z_{q+1},\ldots,z_{q+p}$, вего q+p=n переменные. Для простоты изложения перенумеруем 2-ую группу: $z_1,\ldots,z_p$. Используемые соотношения из Прямой Модели Анализа Избыточно-Канонических Переменных (ПМ АИКП) приведены в работе [7]. Метод избыточных переменных (МИП, redundancy values analysis, RVA [8]) исследован в [7] в терминах RV-коэффициентов (индексов избыточностей для пар переменных из разных множетв) из статьи [9]. Решение нашей задачи - подматрицы $Z_{mq}|Z_{mp}$ будут моделироваться нами ниже при решении Обратной Задачи АИКП.

Ниже будут изложены алгоритмы реализации ОМ АИКП Λ_{pp} =>$(A_{qp}, B_{pp},U_{mp},V_{mp},Z_{mn}=[Z_{mq}|Z_{mp}])$.

Исходные данные

Исходными данными являются 2 матрицы индикаторов извлеченных знаний о видах услуг связи. Когнитивные модели индикаторов извлеченных знаний о видах услуг связи разработаны в статьях [4-8]. Индикаторы наличия знаний о видах услуг связи имеются в 5 матрицах C_{nn} [4-9]. Объединение 5 матриц в одну пару матриц (A^+_{54}, B^+_{44}) индикаторов извлеченных знаний проведены в статье [9]. В статье [9] сформироваа новая структурная матрица (Таблица 5[4]) и приведены модельные матричные объекты. Результаты указанного моделирования нас не удовлетворяют из-за несовпадения 2-х множеств дисперсий u– и v-переменных: $(1/m)U^TU=\Lambda^{(1)}_{pp}$, $(1/m)V^TV=\Lambda^{(2)}_{pp}$, $\Lambda^{(1)}_{pp} \neq\Lambda^{(2)}_{pp}$.

Расширим размер Таблицы 5 [4] до n=q+p=6+6=12. Это расширение связано с тем «что доли заметных элементов в матрицах A^+_{54}, B^+_{44} слишком большие. Если добавим к 4 и 3 z–переменным 2 или 3 новых z- переменных, то увеличение размерностей q и p>4 приведет к уменьшению доли заметных элементов в матрицах A^+_{66}, B^+_{66}» [1]. Теперь вместо Таблицы 5 [4] рассмотрим новую (Таблицу 1.

Разделенные на 2 множества n=q+p=6+6=12 переменные таковы, что 1-ое содержит объемы затрат, 2-ое – количества аппаратов или домов с аппаратами, посредством которых проводятся разговоры физических лиц, деловые переговоры менеджеров организаций. В 5 строках 2-х столбцов матрицы **A_{66}** введем 6 индикаторов

знаний (Таблица 2), в 3-х строках 3-х столбцов матрицы $\mathbf{B_{66}}$ введем еще 7 индикаторов (Таблица 3). Будем считать эту долю индикаторов не большой для матриц A^+_{66}, B^+_{46}, рассматриваемых вместо матриц A^+_{54}, B^+_{44}.

Индикаторы наличия знаний о видах услуг связи взяты с 5 матриц C_{nn} [6-10]. Описание индикаторов наличия знаний о видах услуг связи изложено в разделе «Исходные данные» статьи [5].

Смыслы 12 z-переменных приведены в Таблице 2, в Таблице 3. В них приведены структурные матрицы, где 12 переменных разделены на 2 множества: 1-ая содержит объемы затрат, 2-ая – количества аппаратов, домов с телефонными аппаратами, посредством которых проводятся разговоры физических лиц, деловые переговоры менеджеров организаций.

Модели и задачи

Мы будем использовать соотношения из ПМ АИКП [4-5]. Они – соотношения [4], получены после двух последовательных преобразований 2-х подматриц Z_{mq}, Z_{mp} матрицы $Z_{mn}=[Z_{mq}|Z_{mp},]$ значений n=q+p z-переменных, разделенных на 2 группы: в 1-ой группу объединены q z-переменных, во 2-ую – p z-переменных. Полученные 2 матрицы значений избыточно-канонических переменных (biorthogonal redundancy-canonical variables) U_{mp}, V_{mp} биортогональны [4]: $(1/m)U^TU=I_{pp}, (1/m)V^TV=I_{pp}$, $(1/m)U^TV=\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$, $\lambda_1>…>\lambda_p>0$. Все 3 матрицы диагональные. Матрица A_{qp},(или B_{pp}) состоит из произведения 2-х матриц преобразований: 1-ая вычисляется в ПМ АИП [1], 2-ая – в модели канонических переменных [2]. Избыточная переменная «канонизируется» методом канонических корреляций[2]. Подматрица Z_{mq} преобразется с применением ортогональной матрицы A_{qp}, а подматрица Z_{mp} – матрицы B_{pp}[1]. Ортогональные матрицы A_{qp}, B_{pp} в ПМ АИКП [1] обеспечивают би-ортогональность пары матриц (U_{mp}, V_{mp}) : $(1/m)U^TV=\Lambda_{pp}=diag(\lambda_1,…,\lambda_p)$, $\lambda_1>…>\lambda_p>0$. Две матрицы U^*_{mp}, V^*_{mp} в КП-модели [1] не би-ортогональны: $(1/m)U^{*T}V^*=\Psi_{12}\neq\Psi_{21}$, где $(1/m)V^{*T}U^*= B^{*T}R_{21}A^* =\Psi_{21}$. В ПМ АИКП [4], две матрицы U_{mp}, V_{mp} значений избыточно-канонических переменных биортогональны: $(1/m)U^TV=\Lambda_{pp}$. Подробно метод избыточных переменных (МИП, redundancy values analysis, RVA) изложен в работах [1,565-583]. Соотношения из прямой задачи, решенной в [1], образуют Прямую модель RVA (прямую RVA-модель) схематично обозначим так: $Z_{mn}=[Z_{mq}|Z_{mp}]$ $=>(\Lambda^*_{pp}$, A^*_{qp}, $B^*_{pp}, U^*_{mp}, V^*_{mp})$, m=q+p,q≥p. Она исследована в терминах RV-коэффициентов [11] в статье [4]. Во всех 3-х рассматриваемых многомерных моделях с двумя множествами z-

переменных входными объектами являются 2 подматрицы $Z_{mq}|Z_{mp}$, объединенные в одну матрицу $Z_{mn}= [Z_{mq}|Z_{mp},]$.

Эти подматрицы Z_{mq},Z_{mp} будут моделироваться нами ниже при решении Обратной Задачи. При решении Обратной Задачи мы не будем применять преобразования, присущие методу избыточных переменных [1], методу канонических корреляций [2]. В Обратной Задаче моделируются 2 множества избыточноканонических (redundancy-canonical variables [4] переменных, исходя из значений параметров из другой модели – Обратной Модели Главных Компонент [12,13]. Решаемые задачи и применяемые в ОМ ГК модели, Оптимизационные задачи изложены в статьях [14-24]. Используемые формулы ПМ АМКП приведены в статье [4]. В статье [7] доказаны Теоремы об индексах избыточностей (измерения сил связей между двумя множествами z-переменных, избыточных переменных, канонических переменных, избыточно-канонических переменных). Теоретическое обоснование существования индикаторов присутствия знаний в матрицах собственных векторов A_{qp}, B_{pp} в Прямой модели избыточно-канонических переменных доказано в Теоремах 1 и 2 [4].

Модельные мтрицы A^+_{qp}, B^+_{pp} значений индикаторов знаний

Ранее была сформированы матрцы $\mathbf{A_{54}}, \mathbf{B_{44}}$ с назначенными элеметами – 10 индикаторами. С применением надстройки в ЭТ Поиск решения с задачи $(\Lambda_{pp}, C_{pp})=>(\Lambda^{(2)}_{pp}, B^+_{pp})$. Далее последовательно решаем задачи: $\Lambda^{(2)}_{pp}=>(\Lambda^{(1)}_{pp}, A^+_{qp})$. Но для моделирования ее входного объекта C_{44} применяем программу IMPC3, реализующую вариант 3 ОМ ГК . Данее мы модеируем матрицу A_{54} как матрицу псевдособственных векторов для матрицы собственных чисел $\Lambda_{55}=diag(\lambda_1,\lambda_2,\lambda_3,\lambda_4,0)=diag(2.40999, 1.12960,$ $0.23020, 0.23020,0)$. Фиксирум 5 индикаторов в матрице C_{54}. Далее для пары матриц (Λ_{44}, C_{54}) мы как показано выше решили Оптимизационную Задачу ц $(\Lambda_{44}, C_{54})=>((\Lambda^+_{44}, C^+_{54})$ с 5 выделенными элементами 0.3318;-0.3083; -0.5074; 0.4259; 0.4605. Полученную матрицу C^+_{54} переобозначим так: A^+_{54} (Таблица 6).

Моделирование 2-х матриц B^+_{pp}, A^+_{qp} собственных векторов проводили в ЭТ Excel обратную задачу: подобрать исходные данные для получения желаемого результата. Средство поиска решения Microsoft Excel использует алгоритм нелинейной оптимизации Generalized Reduced Gradient (GRG2), разработанный Леоном Ласдоном (Leon Lasdon, University of Texas at

Austin) и Аланом Уореном(Allan Waren,Cleveland State Univer sity   Схема ОМ Анализа ИКП , отражающая последовательность этапов независимого моделирования ортонормированных квадратных (q=p) матриц собственных векторов A_{qp}, B_{pp}, q=p, была приведена выше.

Моделирование матриц U_{mp}, V_{mp} значений смысловых избыточно-канонических переменных

Нам известны 3 матрицы A^+_{qq}, $\mathbf{B}^+_{pp}$, Λ^2_{pp}=diag(λ^2_1,…,λ^2_p). Матрицы A^+_{qq}, $\mathbf{B}^+_{pp}$ собственных векторов A^+_{qq}, $\mathbf{B}^+_{pp}$ нужны для преобразования матрицы U_{mp} (в дальнейшем она будет равна $Z_{mq}A_{qp}$ и V_{mp} (в дальнейшем она будет равна $Z_{mp}B_{pp}$) в стандартизованные матрицы Z_{mq} и Z_{mp}. Матрицы U_{mp},V_{mp} должны быть матрицами из m значений би-ортогональных избыточно-канонических переменных (biorthogonal canonical-redundancy variables).

Этап (A^+_{qp}, B^+_{pp}) →(U_{mp} V_{mp}) решения нашей задачи начинается моделирования матрицы U_{mp} такой, что (1/44)$U_{44,6}^T U_{44,6}$ =I_{66} [8-9]. Реализуется в зависимости от диагональной матрицы Λ_{pp}=diag(λ_1,…,λ_p), λ_1>…>λ_p>0, исходя из имеющейся матрицы U_{mp} такой что (1/m)$U^T U$=I_{pp}, далее она преобразуется так, что удовлетворяет равенству Λ_{66}=(1/44)$U^T U$=diag(1.8067, 1.0847, 0.8244, 0.8244, 0.3162, 0.3162). Матрица (Таблица 4) $U_{44,6}$ ортогональных избыточно-канонических переменных получена умножением справа на диагональную матрицу $\Lambda^{1/2}_{pp}$, этим мы преобразовали одинаковые дисперсии u–переменных в различные дисперсии 1.8067,1.0847,0.82440.8244,0.3162, 0.3162, не меняя сумму дисперсий (=6). Матрица U_{mp} ортогональных избыточно-канонических переменных преобразовалась в матрицу главных компонент, так как дисперсии u–переменных различны: 1.8067>1.0847> 0.8244>0.8244>0.3162=0.3162, а последние 2 дисперсии пренебрежимо малы, являются допустимыми погрешностями модели. Но матрицы собственных векторов A^+_{66} B^+_{pp} вычисляются с высокой точностью - они нужные нам матрицы: (Λ^2_{pp},A^+_{qp}),((Λ^2_{pp},B^+_{pp}). Матрицы собственных векторов A^+_{66} $\mathbf{B}^+_{pp}$ содержат индикаторы извлекаемых знаний., они преобразуют полученные модельные матрицы U_{mp} и V_{mp}.

Матрицу V_{mp} (Таблица 4) мы моделируем, решая Оптимизационную Задачу 4 (ОЗ4). В ОЗ4 входными объектаими являются (Λ_{66},$U_{44,6}$), 1/44)$U^T U$=Λ_{66}=(diag(1.8067,1.0847,0.82440.8244,0.3162, 0.3162), выходным объект матрица V_{mp} такая, что удовлетворяет равенству Λ_{pp}=(1/m)$V^T V$, (1/m)$U^T V$=diag (λ^2_1,…,λ^2_p). При этом матрица

V_{mp} преобразуется в матрицу главных ортогональных избыточно-канонических переменных.

В нашем примере мтрицы A^+_{66} $\mathbf{B}^+_{66}$ $\mathbf{A}_{66}$ (q=6,p=6) удобны тем, что обладают приемлемой и небоьшого числа индикаторов $|c_{kj}|{\geq}c_0$, извлеченных знаний из 5 соответствующих матриц собственных векторов C_{nn} [2-6].

Мтрицы A^+_{66} $\mathbf{B}^+_{66}$ $\mathbf{A}_{66}$ полезны: в нее внедрены индикаторы когнитивных знаний из других исследований [11-13].

При решении ОЗ 4 процедура Solver (окно заданных нами значений параметров процедуры смотрите на Рисунке 1) ввела ограничение на размерноть m =44 изменяемой матрицы $V_{44,6}$. Поэтому ОЗ 4 решалась в 2 шага: сперва решили ОЗ 4 с входными объектами Λ_{66}=(diag(1.8067, 1.0847,0.82440.8244), $U_{44,4}$) затем - с входными объектами Λ_{22}= diag(0.3162, 0.3162). Решения этих ОЗ 4 и усслоде (1/44)$U^T V$=Λ^2_{66}=diag(λ^2_1,…,λ^2_6)= diag(3.2642,1.1765,0.6796,0.6796,0.1000,0.1000) привели   к результату:(1/44)$U^T V$=Λ^2_{66}=diag(**3.2642,1.1765,** 0.6796, 0.6796, 0.1000,0.1000).

Индикаторы присутствуют в компонентах 3-х первых собственных векторов из матриц A_{qp} и B_{pp}. Трем первым собственным векторам соответствуют 3 собственных чисел λ_1^2=3.2642=1.8067^2; λ_2^2=1.1765=1.8067^2, λ_3^2=1.0847^2. Добавим к ним 4-ое собственное число λ_4^2=0.6796=0.8244^2, зафиксируем их долю, равную 96,6667%. Долю малых собственных чисел λ_5^2=0.1000, λ_6^2=0.1000≠0.8244^2 , равную 0,2/6=0,03.3333%, интерпретируем как погешность модели, не влияющую на матрицы индикаторов, на смыслы переменных. Напомним, что функцией ОМ АИКП является моделирование матриц A^+_{qp},B^+_{pp} индикаторов извлеченных знаний и соответствующих им матриц Z_{mq} и Z_{mp} (Z_{mn}=[Z_{mq},Z_{mp}]) коррелированных z-переменных $\{z_1,…,z_q,\}$, $\{z_{q+1},…,z_{q+p}\}$, n=q+p,q≥p. Поэтому допустимы вычислительные погрешности в значениях недоминирующих собственных чисел из матрицы Λ^2_{pp}=diag(3.2642, 1.1765, 0.6796, 0.6796, 0.1000, 0.1000). Далее мы будем допускать погрешности в дисперсиях u- и v-переменных =(1/44)$U^T U$=Λ_{pp}=diag(1.8067, 1.0847, 0.8244,   0.8244,   0.3162,   0.3162); Λ_{66}=(1/44)$V^T V$=diag(1.8067,1.0847,0.8244,0.8244, 0.7299,0.2701).

Преимуществом применямой в данной статье Обратной модели является би-ортогональность 2-х множеств избыточно- канонических переменных, возможность моделировать отдельно и независимо друг о друга матрицы A^+_{qp}, B^+_{pp}. Конструирование новой собственной структуры (Λ^+_{pp}, A^+_{qp},B^+_{pp}) взамен 5 старых [1-6] и перенос индикаторов присутствия знаний в другую

систему валидных показателей (смысловых избыточно-канонических переменных) является новой методикой конструирования системы валидных u- и v-переменных и коррелированных z-переменных $z_1,\ldots,z_6,z_7,\ldots,z_{12}$. При преобразовании матриц U_{mp}, V_{mp} в матрицы коррелированных z-переменных $z_1,\ldots,z_6,z_7,\ldots,z_{12}$ примем ортонормированные матрицы B^+_{66} и A^+_{66}, а не матрицы B_{66} и A_{66}.

Моделирование матриц Z_{mq}, Z_{mp} значений n=q+p коррелированных z-переменных

Описание схемы);$(U_{mp},V_{mp}) \rightarrow (Z_{mq},Z_{mp})$. Преобразование пары u- и v-переменных в пару множеств z-переменных на этапе $(U_{mp},V_{mp}) \rightarrow (Z_{mq},Z_{mp})$ необходимо для получения модельных числовых данных Z_{mq},Z_{mp}. Эти матрицы данных Z_{mq},Z_{mp} имеют 2 матрицы A^+_{qp},B^+_{pp} индикаторов извлеченных знаний. Извлеченные знания и их когнитивные модели извлечения изложены в статьях [1-5]. Постановка ОЗ АИКП является соединение матриц индикаторов ранее извлеченных разных знаний в одну матрицу индикаторов. И найти для них соответствующую пару матриц Z_{mq} и Z_{mp} :$Z_{mn} = [\ Z_{mq},Z_{mp}]$.

Модельные матрицы A^+_{qp},B^+_{pp} являются ортонормированными матрицами. Если матрица $A^+_{6,6}$ (или $B^+_{6,6}$) после решения оптимизационной задачи () получилась ортонормированной, то матрица $A_{6,6}$ (или $B_{6,6}$) является матрицей собственных векторов корреляционной матрицы для множества z-переменных, $z_1,\ldots,z_6$, (для множества z-переменных $z_7,\ldots,z_{12}$).

Для моделирования подматриц Z_{mq}, Z_{mp} применяем матрицы U_{mp} и V_{mp} значений би-ортогональных избыточно-канонических переменных. При ортонормированных преобразованиях матриц U_{mp} и V_{mp} получаемым матрицы главных компонент – у-переменных, имеющих неодинаковые дисперсии $\lambda_1,\ldots,\lambda_p$ и би-ортогональных пар (u,v)–переменных, у которых $covar(u_j,v_j)=\lambda_j, j=1,\ldots,6$: $\lambda_1^2=3.2642=1.8067^2$; $\lambda_2^2=1.1765=1.8067^2$, $\lambda_3^2=1.0847^2$, $\lambda_4^2=0.6796=0.8244^2$, $\lambda_5^2=0.1000$; $\lambda_6^2=0.1000$. При этом возникает погрешность в последних 2-х собственных числах $\lambda_5=0.3162$, $\lambda_6=0.3162$. Процедура Solver вместо (0.3162, 0.3162) вычисляет (0.7299,0.2701). Эти погрешности не относятся к собственным векторам с номерами 1,2,3, где присутствуют индикаторы знаний. Они вносят пренебрежимо малые погрешности в дисперсии (u,v)–переменных, равные 1. Небольшие отличия значений дисперсий от 1 допустимы при m=44. Они не влияют на адекватность значений модельных z-переменных значениям реальных z-переменных (смотрите, например, Рисунки 1,2,3). При m=20 такой погрешности не бывает.

Линейным преобразованиям подвергаются отдельно 2 матрицы U_{mp},V_{mp} значений би-ортогональных смысловых избыточно-канонических переменных (biorthogonal reasonable (meaningig) redundancy-canonical variables) u- и v-переменных таких, что: $(1/m)U^TU=\Lambda_{pp}$, $(1/m)V^TV=\Lambda_{pp}$, $(1/m)U^TV=\Lambda^{+2}_{pp}=diag(\lambda^{+2}_1,\ldots,\lambda^{+2}_p)$, $\lambda^{+2}_1>\ldots>\lambda^{+2}_p>0$. Модельные матрицы A^+_{66} и B^+_{66} имеют алгебраические свойства ортонормированных матриц: $A^+A^{+T}=I_{66}$, $B^+B^{+T}=I_{66}$, $A^{+T}A^+=I_{66}$, $B^{+T}B^+=I_{66}$. Модельная подматрица $Z_{44,6}$ вычислена с применением матрицы A^+_{66}, а модельная подматрица $Z_{44,6}$ – с применением матрицы B^+_{66}. Ортонормированные матрицы A^+_{66}, B^+_{66} из ПМ АИКП [8] обеспечивают би-ортогональность пары матриц $(U_{44,6},V_{44,6})$: $(1/m)U^TV=\Lambda^{+2}_{66}=$ diag (3.2642,1.1765,0.6796,0.6796,0.1000,0.1000) и ортогональность стобцов в каждой из матриц $U_{44,6}$, $V_{44,6}$: $(1/m)U^TU=\Lambda_{66}=diag(1.8067, 1.0847, 0.8244, 0.8244, 0.3162, 0.3162)$, $(1/44)V^TV=\Lambda_{66}=diag(1.8067,1.0847,0.8244,0.8244, 0.7299,0.2701)$. Ортогональность присуща парам матриц $(U_{44,6},U_{44,6})$, $(V_{44,6},V_{44,6})$, а би-ортогональность - паре матриц $(U_{44,6},V_{44,6})$, $(1/m)U^TV=\Lambda^{+2}_{66}=diag(\lambda^{+2}_1,\ldots,\lambda^{+2}_p)$.

Решив 4 Оптимизационные Задачи ОЗ1, ОЗ2, ОЗ3, ОЗ4 мы реализовали схему ОМ АИКП: $(A_{qp},\Lambda^2_{66})\rightarrow A^+_{66}$; $(B_{66},\Lambda^2_{66})\rightarrow(B^+_{66})$; $(A^+_{66},B^+_{66})\rightarrow(U_{44,6}\ V_{44,6})$; $(U_{44,6},V_{44,6}) \rightarrow (Z_{44,6},Z_{44,6})$. Введенные математически в матрицы A_{qp},B_{66} индикаторы извлеченных знаний остаются неизменными в матрицах A^+_{66},B^+_{66}.

Визуализация динамик изменений 44 модельных значений z-переменных

Мы провели визуализацию показателей (№3,№8); (№7,№10); (№1,№11). Зависимость динамики 44 модельных значений «количества междугородных разговоров на 1 предприятие» (№3) от динамики «объема междугороднего трафика для предприятий» (№8) имеет, как должна быть, довольно сильная. Это – визуальная демонстрация адекватности модельных данных реальным. переменная «количество междугородных разговоров на 1 предприятие» хорошо аппроксимизируется логарифмической функцией (Рисунок 2). Динамики таковы при частых коротких звонках количество разговоров большое, а минуты затрачены при этом небольшие: при частых коротких звонках. Превышение числа минут над количество разговоров иллюстрирует наличие нечастых, но долгих разговоров. Согласованность динамик «междугородный трафик для предприятий» (z3) и «количество междугородных разговоров на 1 предприятие» (z8) показана на Рисунке 2. Динамики таковы при частых коротких звонках

количество разговоров большое, а минуты затрачены при этом небольшие: при частых коротких звонках. Превышение числа минут над количеством разговоров иллюстрирует наличие нечастых и долгих деловых разговоров.

Зависимость динамики 44 модельных значений «количество ОТА для населения» (№7) от динамики «Ввод в действие жилых домов» (№10) имеет, как должна быть, довольно сильная (Рисунок 3). Эта зависимость иллюстрирует возможность населения РК установить отдельный телефонный аппарат (ОТА) в построенном доме. Для населения согласованность динамик «количество ОТА для населения» (z_7) и «ввод в действие жилых домов» (z_{10}) иллюстрирует Рисунок 3.

Зависимость динамики 44 модельных значений «Количество предприятий»;» (№1) от динамики показателя «Расходы предприятий на услуги связи на 1 предприяте»» ((№1) имеет, как должна быть, довольно сильная (Рисунок 4). Чем больше работающих предприятий, тем больше у них расходов на услуги связи. Согласованность динамик ««расходы предприятий на услуги связи» (z_1) и «количество предприятий»» (z_{11}) на Рисунке 4 выражена в меньшей степени, чем согласованности на Рисунках 2 и3.

Заключение

В исследованиях [6-10] анализировались 5 реальных многомерных выборок m=44 значений наборов Х-факторов или Т- факторов. Подмножества Х-факторов или Т- факторов статистически значимо влияли на 1 или 2 или 3 тлекоммуникационных показателей из 10. Множество телекоммуникационных показателей характеризуют доходы, расходы населения и предприятий, количества исползуемых аппаратов, телефонизированных домов, объемы затрат времени, денег при личных и делоых разговорах. Все показатели имеют m=44 значений. Извлекли крупицы знаний из матриц собственных векторов C_{nn}, n=7 [6], n=7 [7], n=9 [8], n=5 [9], n=6 [10]. Каждая из матриц индикаторов знаний C_{nn}

вычислена по матрице реальных данных размерности 44-на- n.

Для огромного количества чисел математически выявлены 10 [5] и 13 [] индикаторов знаний в парах матриц $\mathbf{A}^+_{qp}$, $\mathbf{B}^+_{pp}$. При q=5, p=4 наличие 10 индикаторов знаний в них оказалось слишком большим для моделирования модельных данных , адекватных реальным данным с теми же 10 индикаторами в парах матриц $\mathbf{A}^+_{qp}$, $\mathbf{B}^+_{pp}$. выше нам удалось найти значения q=6, p=6,v=44 и 12 индикаторов знаний в матрицах $\mathbf{A}^+_{qp}$, $\mathbf{B}^+_{pp}$ для того, чтобы разработать модель избыточно-канонических переменных с различными дисперсиями. Наша модель «канонизирует» (от термина canonical [2]) избыточные переменные [1] и моделирует 2 матрицы U_{mp} и V_{mp} значений би-ортогональных смысловых избыточно-канонических переменных с различными дисперсиями: $(1/m)U^TU=\Lambda_{pp}$, $(1/m)V^TV=\Lambda_{pp}$, $(1/m)U^TV=\Lambda^{+2}_{pp}=diag(\lambda^{+2}_1,\ldots,\lambda^{+2}_p)$, $\lambda^{+2}_1>\ldots>\lambda^{+2}_p>0$. Мы нашли одно из преобразований для 2-х подматриц Z_{mq}, Z_{mp} матрицы $Z_{mn}=[Z_{mq}|Z_{mp},]$, наделяющих модель канонических корреляций (canonical correlation analysis [1,2]) свойством содержательной интерпретируемости. Многие исследователи ранее отмечали отсутствие содержательной интерпретируемости, чем объяснялось отсутствие практических применений модель канонических корреляций [1,2].

Адекватность соотношений математической модели ведет к адекватности моделируемых скрытых в объектах модели когнитивных знаний к знаниям, которые будут впоследствии извлечены из смоделированных данных $Z_{mn}=[Z_{mq}|Z_{mp},]$.

Модельные матрицы решаемой Обратной Задачи могут применяться при моделировании исторического принципа «верхи – не могут, низы – не хотят», в моделировании ситуаций «студенты – не хотят, преподаватели-не могут»,«экологи-не хотят, промышленность – не может».

Application

Таблица 1

1	2	3	4	5	6	7
	Имя-смысл z –переменной		**a 1**	**a 2**	**a 3**	**a 4**
			1	2	3	4
z_1	«Расходы предприятий на услуги связи на 1 предприят	z_3	**0,3318**	**-0,3083**		
z_2	Трафик интернета Dial up (минуты) насел	z_1	**-0,5074**			
z_3	междугородный трафик (минуты) для предприятий	z_7	**0**	**0,4259**		

z_4	Международн трафик на СНГ (мин) для предприятий	z_5	0,4605	0			
z_5	«другие расходы при разговорах»	z_{10}					
	Имя-смысл z –переменной		**b₁**	**b₂**	**b₃**	**b₄**	
z_6	количество ОТА для населения	z_2	0,5108				
z_7	Количество междугородных разговоров на 1 предприя	z_4	0,4223	0,4411	0,4129		
z_8	Количество ОТА для предприятий	z_9		-0,6339			
z_9	«другие количества разговоров»	z_{11}					

Эта Таблица 1 позволит нам далее ниже смоделировать 2 новые матрицы A^+_{qp}, B^+_{pp}, q=6,p=6. При этом местоположение 13 (=6+7) индикаторов извлекаемых знаний остаются неизменными в матрицах A^+_{qp}, B^+_{pp}.

Таблица 2

имя-смысл z-переменной из A_{66}		номер z-переменной для A_{66}						
		1	**2**	**3**	**4**	**5**	**6**	
		a₁	**a₂**	**a₃**	**a₄**	**a₅**	**a₆**	Сум кв
«Расходы предприятий на услуги связи на 1 предприяте»	1 z_3	0,3318	-0,3083	0,0001	0,8821	0,0912	0,0921	1,0000
Трафик интернета Dial up (минуты) насел	2 z_1	-0,5074	0,7394	0,1993	0,1989	0,2400	0,2427	1,0000
междугородный трафик (минуты) для предприятий	3 z_7	0,4129	0,4259	0,5108	0,2789	0,3895	0,3972	1,0000
Международн трафик на СНГ (минуты) для предприятий	4 z_5	0,4605	0,0001	0,6369	0,2172	0,2901	0,5009	1,0000
z2=(T4)-доля прибыльных предприятий	5 z2	0,4502	0,3961	-0,4758	0,0002	0,4053	0,4998	1,0000
«другие расходы при разговорах»	6 z10	0,2174	0,1413	0,2594	0,2395	0,7307	0,5236	1,0000
		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	6,0000

Таблица 3

имя-смысл z-переменной из B_{66}		номер z-переменной для B_{66}						
		7	**8**	**9**	**10**	**11**	**12**	
		b₁	**b₂**	**b₃**	**b₄**	**b₅**	**b₆**	Сум кв
количество ОТА для населения	1 z_2	0,5109	0,2042	0,1751	0,1404	0,7212	0,3560	1,0000
Количество междугородных разговоров на 1 предприя	2 z_4	0,4223	0,4411	0,4129	0,2175	0,0890	0,6335	1,0000
Количество ОТА для предприятий	3 z_9	0,3170	-0,6339	-0,4689	0,1646	0,3958	0,3068	1,0000
z6-Ввод в действие жилых домов	4 z_6	0,4329	-0,4590	0,4609	0,1959	0,1359	0,1959	1,0000
(z3)=«Количество предприятий»;	5 (z3)	0,2111	0,4243	0,9395	0,1959	0,1959	0,1959	1,0000
«количества другие разговоров»	6	0,3916	0,3473	0,4393	0,5495	0,3242	0,3549	1,0000
		1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	6,0000

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Таблица 4. Матрицы А⁺₆₆, собственных векторов

	номер собственного вектора из A₆₆						
	1	2	3	4	5	6	
1	**0,3318**	**-0,3083**	0,0001	0,8821	0,0912	0,0921	1,0000
2	#####	0,7394	0,1993	0,1989	0,2400	0,2427	1,0000
3	0,4129	**0,4259**	0,5108	0,2789	0,3895	0,3972	1,0000
4	**0,4605**	0,0001	0,6369	0,2172	0,2901	0,5009	1,0000
5	0,4502	0,3961	-0,4758	0,0002	0,4053	0,4998	1,0000
6	0,2174	0,1413	0,2594	0,2395	0,7307	0,5236	1,0000
	1,0000	1,0000	1,0000	1,0000	1,0000	1,0000	**6,0000**

Таблица 5. Матрицы В⁺₆₆ собственных векторов

номер собственного вектора из B₆₆						
1	2	3	4	5	6	
0,5109	**0,2042**	0,1751	**0,1404**	0,7212	0,3560	1,0000
0,4223	**0,4411**	0,4129	0,2175	0,0890	0,6335	1,0000
0,3170	**-0,6339**	-0,4689	0,1646	0,3958	0,3068	1,0000
0,4329	**-0,4590**	**0,4609**	0,1959	0,1359	0,1959	1,0000
0,2111	0,4243	**0,9395**	0,1959	0,1959	0,1959	1,0000
0,3916	0,3473	0,4393	0,5495	0,3242	0,3549	1,0000
1,0000	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**1,0000**	**6,0000**

Рисунок 1. Окно надстройки «Поиск решения»
для программ-таблиц Оптимизационных Здач 1, 2, 3, 4

Таблица 6. Модельные матрицы значений валидных переменных U_{mp}

1	2	3	4	5	6	7
	Матрица $U_{44,6}$					
1	-0,8739	-0,4322	-0,6322	1,1711	1,1200715	-0,89176087
2	0,0858	1,1516	-0,1140	0,7568	0,9045823	-0,85734558
3	1,8040	-1,1785	-0,5905	-1,1029	0,7918891	-0,76315341
4	0,1399	-0,9036	-0,0401	-1,2384	0,7891336	-0,7507819
5	-3,0105	0,0440	-0,6934	0,9655	0,7791239	-0,71839104
6	0,0281	2,2229	0,8212	-1,3125	0,7496572	-0,69038644
7	0,4797	0,8463	0,4689	0,0554	0,7448773	-0,67868975
8	0,6509	0,3277	1,2091	0,4483	0,613908	-0,66080729
9	-0,8721	-1,1224	0,9823	0,9486	0,6131207	-0,65147243
10	0,6488	-1,6721	-0,2658	0,2320	0,5754439	-0,64652382
11	0,8630	0,7645	0,0779	1,0733	0,4587074	-0,57628739
12	-0,9678	1,0352	-1,8023	-0,5511	0,4160932	-0,5654342
13	1,1360	-0,8728	0,4447	-1,3083	0,3871045	-0,56425329
14	0,2679	0,0595	-1,3965	-0,7000	0,2752661	-0,52228013
15	-1,6397	1,4123	-0,3251	-0,1110	0,2118565	-0,39006806
16	0,6377	-0,5903	1,4210	0,5265	0,2084149	-0,32539881
17	-0,7117	-0,8952	1,0179	-0,0913	0,172217	-0,18430737
18	-0,4359	1,5521	-0,3906	-1,1969	0,1629328	-0,10083905
19	-0,2571	-0,3245	-0,6445	1,6329	0,1504713	-0,06498979
20	-2,0115	-0,8277	0,4351	0,4546	0,1331006	-0,00678858
21	1,5470	-1,5241	0,7615	0,5862	0,1007603	0,07272198
22	2,5794	-0,1944	-0,0982	1,3206	0,0930506	0,08543652
23	2,2465	0,7392	-0,1021	-0,7079	0,0854365	0,09305062
24	0,9320	-1,0568	-0,6337	0,3267	0,072722	0,10076032
25	0,6863	0,8164	1,5276	-1,3184	-0,006789	0,13310057
26	0,2247	0,6968	1,7709	0,9284	-0,06499	0,15047129
27	-1,5893	-0,9930	-0,4824	1,0987	-0,100839	0,16293278
28	0,2752	0,7471	0,7335	1,0424	-0,184307	0,17221703
29	1,0254	1,1170	-1,0393	0,2599	-0,325399	0,20841494
30	-1,2610	-0,3486	1,1342	0,6291	-0,390068	0,21185647
31	0,5036	1,0395	-0,4153	1,6129	-0,52228	0,27526608
32	-2,9875	0,1102	0,4094	-0,1161	-0,564253	0,38710452
33	-1,3620	1,4959	0,1092	-0,6647	-0,565434	0,41609322
34	1,4616	-1,6966	-0,0586	-0,3082	-0,576287	0,45870744
35	1,5494	1,6657	-1,5317	0,3040	-0,646524	0,57544388
36	-0,6794	0,3163	0,7372	-1,5224	-0,651472	0,61312075
37	1,7709	-1,3572	-0,0183	-0,2511	-0,660807	0,61390802
38	-0,5597	-0,7080	-1,7914	-0,4745	-0,67869	0,74487732
39	0,5889	-0,4244	-1,7277	-0,5469	-0,690386	0,74965722

40	-0,4264	-0,7163	0,7258	-0,9048	-0,718391	0,77912391
41	-0,1061	1,1903	-0,1577	1,0946	-0,750782	0,78913358
42	-0,8802	-1,4072	-1,2600	-0,8081	-0,763153	0,79188905
43	-3,0908	-1,0030	0,4698	-1,3829	-0,857346	0,90458226
44	1,5897	0,8982	0,9539	-0,8499	-0,891761	1,12007145
	0,00000	0,00000	0,00000	0,00000	0,000000	0,000000
	1,80670	1,08467	0,82441	0,82441	0,31623	0,31623
	-0,0694	0,002543	-0,0708	0,01803	-0,0972	0,0000

Таблица 7. Модельные матрицы значений валидных переменных V_{mp}

1	2	3	4	5	6	7
	Матрица $V_{44,6}$					
1	-0,3564	-0,2199	-0,4097	1,1328	-0,0120	1,6504
2	0,0319	0,8249	-0,0631	0,5521	-0,2477	-0,4758
3	1,0270	-0,8598	-0,3754	-1,0183	0,0836	-0,4431
4	0,0522	-0,5567	-0,0221	-1,2529	0,0557	-0,4347
5	-4,3512	0,0211	-0,4629	0,8106	0,1092	-0,4560
6	0,0105	4,2508	0,5865	-1,3929	0,1503	-0,4602
7	0,1834	0,5060	0,2833	0,0305	0,1521	-0,4725
8	0,2547	0,1627	1,0822	0,2749	0,2975	-0,4389
9	-0,3555	-0,7885	0,7690	0,7871	0,2980	-0,4611
10	0,2537	-1,8157	-0,1509	0,1316	0,3313	-0,4389
11	0,3511	0,4393	0,0430	0,9710	0,3509	-0,4392
12	-0,4033	0,6881	-2,1852	-0,3557	0,3346	-0,4266
13	0,4951	-0,5290	0,2663	-1,3848	0,3311	-0,4359
14	0,1005	0,0286	-1,3918	-0,4925	0,2591	-0,4212
15	-0,8617	1,2264	-0,1874	-0,0616	0,2083	-0,3449
16	0,2490	-0,3156	1,4355	0,3354	0,2061	-0,2994
17	-0,2812	-0,5491	0,8136	-0,0505	0,1714	-0,1793
18	-0,1658	1,5144	-0,2296	-1,1780	0,1633	-0,0995
19	-0,0964	-0,1610	-0,4201	2,0675	0,1514	-0,0648
20	-1,2861	-0,4902	0,2597	0,2796	0,1339	-0,0068
21	0,7804	-1,4517	0,5266	0,3856	0,1022	0,0728
22	2,4837	-0,0944	-0,0543	1,4086	0,0944	0,0856
23	1,6730	0,4198	-0,0565	-0,5006	0,0867	0,0934
24	0,3851	-0,7119	-0,4109	0,1907	0,0738	0,1007
25	0,2700	0,4808	1,6334	-1,4044	-0,0067	0,1332
26	0,0841	0,3885	2,1203	0,7597	-0,0633	0,1496
27	-0,8165	-0,6435	-0,2930	1,0115	-0,0961	0,1626
28	0,1033	0,4258	0,4999	0,9231	-0,1627	0,1711
29	0,4335	0,7819	-0,8412	0,1486	-0,2305	0,2063

30	-0,5712	-0,1738	0,9712	0,4242	-0,2362	0,2091
31	0,1930	0,6928	-0,2461	2,0235	-0,1805	0,2682
32	-4,2166	0,0531	0,2422	-0,0644	-0,1356	0,3604
33	-0,6389	1,3911	0,0604	-0,4577	-0,1343	0,3854
34	0,7120	-1,8843	-0,0323	-0,1788	-0,1218	0,4148
35	0,7824	1,7983	-1,6414	0,1762	-0,0042	0,4714
36	-0,2670	0,1567	0,5034	-1,8260	0,0046	0,5149
37	0,9913	-1,1285	-0,0101	-0,1432	0,0218	0,4734
38	-0,2161	-0,3966	-2,1626	-0,2946	0,0292	0,4652
39	0,2283	-0,2155	-2,0314	-0,3522	0,0530	0,5024
40	-0,1621	-0,4027	0,4927	-0,7286	0,1332	0,4818
41	-0,0395	0,8755	-0,0878	1,0048	0,2082	0,4917
42	-0,3594	-1,2170	-1,1618	-0,6096	0,2288	0,4637
43	-4,8635	-0,6538	0,2840	-1,5329	1,9837	0,3615
44	0,8169	0,5518	0,7345	-0,6593	-5,1756	-1,8907
	-0,1673	0,0550	-0,0300	-0,0025	0,0000	0,0000
	1,8067	1,0847	0,8244	0,8244	0,7299	0,2701
				0		
	3,264199567	1,176502506	0,679648964	0,679648964	0,1	0,1
	1,806709597	1,084667002	0,824408251	0,824408251	0,316227766	0,316227766
	1,806709597	1,084667002	0,824408251	0,824408251	0,824408251	0,824408251
	3,264199567	1,176502506	0,679648964	0,679648964	0,1	0,1

Таблица 8. Модельные матрицы Z_{mq} значений q=z-переменных

1	0,89624492	0,283186	-0,45911	-0,6724856	-0,255308	0,216921
2	0,34452035	0,944814	0,690519	-0,0356548	0,487278	0,545117
3	-0,00908697	-0,4589	-0,3611	0,0624017	0,5656776	-0,012597
4	-0,7645614	-0,85088	-0,68385	-0,3773478	-0,331388	-0,22074
5	-0,15592333	-1,25625	-1,29092	-1,752034	-1,051008	-0,403785
6	-1,82891073	1,564661	1,029451	0,1226602	0,4610462	0,40516
7	-0,04749725	1,224037	0,833997	0,4077711	0,2908522	0,547702
8	0,50551658	0,559468	1,127579	1,0143759	-0,2338	0,711452
9	0,88931114	-0,45633	-0,09174	0,2815713	-1,381508	0,240726
10	0,92834968	-1,26196	-0,548	0,0228564	-0,333586	-0,026608
11	0,98612792	0,764588	0,970856	0,5246558	0,5523599	0,606364
12	-1,14062241	0,259136	-1,09552	-1,875806	0,7178678	-0,655745
13	-0,52466823	-0,861	-0,11381	0,351794	-0,171188	-0,086877
14	-0,5699643	-0,43431	-0,87278	-1,0998732	0,6590816	-0,535591
15	-1,09405224	0,91355	-0,34491	-1,1201243	-0,133145	-0,317332
16	0,84713193	-0,07743	0,836462	1,2105314	-0,700886	0,531901
17	-0,04190541	-0,48059	-0,18677	0,2583672	-1,181632	-0,009671
18	-1,67336474	0,846271	-0,02889	-0,7126844	0,6198446	-0,197227
19	1,46277561	-0,02318	-0,08529	-0,1631204	0,09121	0,198063

20	0,00025279	-0,40451	-0,78481	-0,515261	-1,389789	-0,238822
21	1,51613336	-0,81665	0,610165	1,3903024	-0,192315	0,570655
22	2,09695615	0,142483	1,370498	1,481903	1,2115729	0,936869
23	-0,09057217	0,428438	1,06293	0,8871442	1,433693	0,507976
24	0,93911475	-0,80078	-0,22947	0,168075	0,3823725	0,073089
25	-1,17515324	0,676512	1,093796	1,0673795	-0,030926	0,409832
26	0,68667892	1,07387	1,587507	1,4896649	-0,416405	0,860386
27	0,75377339	-0,59646	-0,99359	-0,7481683	-0,838552	-0,336213
28	0,77960508	0,903559	1,093847	0,8532158	0,0823564	0,560846
29	0,21458798	0,642917	0,396771	-0,1232213	1,3708334	0,044739
30	0,22805871	0,051288	0,017964	0,2713588	-1,29756	-0,052576
31	1,24707179	0,948167	0,794359	0,3042487	0,7621904	0,297435
32	-1,14344578	0,09853	-1,07577	-1,1099868	-1,531323	-0,765179
33	-1,51261322	0,960843	-0,10982	-0,6575669	-0,093945	-0,410949
34	0,72583868	-1,3544	-0,27726	0,6312991	0,0094625	-0,191852
35	0,26269926	0,971281	0,628301	-0,0952785	2,1116921	0,076534
36	-1,66868574	0,070406	-0,20405	-0,0558499	-0,489212	-0,431383
37	0,78082496	-1,06674	0,060175	0,8650244	0,3072563	-0,033036
38	-0,37935971	-0,9571	-1,54845	-1,3256349	0,4170499	-0,906011
39	-0,15013922	-0,75071	-0,94372	-0,7728103	1,0137862	-0,623049
40	-0,71248519	-0,54824	-0,33307	0,2512199	-0,722988	-0,339292
41	0,56755072	1,077757	0,708924	0,266027	0,5890113	0,230937
42	-0,56774749	-1,4434	-1,81442	-1,2082168	-0,267861	-1,053623
43	-1,93100792	-0,90929	-1,82365	-1,2201793	-1,907931	-1,17587
44	-0,47724918	0,743034	1,386632	1,45743	0,8157516	0,451309
	2,4724E-06	0,00772	-4,3E-07	-6,183E-07	-2,33E-07	-2,56E-07
	0,9464657	0,680617	0,793937	0,7688665	0,7284625	0,25341
	z 1	z 2	z 3	z 4	z 5	z 6

Таблица 9. Модельные матрицы Z_{mp} значений p=6 z-переменных

1	0,4526	0,8858	0,9151	0,3160	-0,0024	0,8205
2	-0,1029	0,1344	-0,6166	-0,3982	0,2509	0,3150
3	0,1740	-0,6370	0,8945	0,5357	-0,7310	-0,6589
4	-0,3853	-0,7837	0,0748	-0,0460	-0,5741	-1,0144
5	-2,0542	-1,1123	-1,0080	-1,8386	-1,1604	-1,4140
6	0,6502	1,3786	-3,0430	-1,8412	1,8734	0,7328
7	0,1940	0,2471	-0,4658	-0,0781	0,4611	0,2699
8	0,4635	1,2208	-0,5136	0,5671	1,2036	0,7453
9	-0,0391	-0,1353	0,1586	0,7051	0,4399	0,2942
10	-0,2140	-1,2020	1,4957	0,9889	-0,9649	-0,6614
11	0,5226	0,1720	-0,0077	0,1394	0,4763	0,8097
12	-0,3351	-0,7811	0,2627	-1,4191	-1,6058	-0,9578
13	0,1071	-0,6782	0,1652	0,3021	-0,1550	-0,6639
14	-0,2122	-0,9004	0,5449	-0,7398	-1,3733	-0,8840
15	-0,1496	0,2226	-0,9148	-0,9874	0,1251	-0,0529
16	0,4198	0,3776	-0,3694	0,9862	1,3723	0,7936
17	-0,0529	-0,0157	-0,1104	0,5084	0,4748	0,0292
18	0,0858	0,2288	-1,0065	-1,0566	0,1373	-0,2990

19	0,2255	0,1839	0,6525	0,2596	-0,0531	0,8992
20	-0,4475	-0,0465	-0,0302	-0,0195	-0,1053	-0,2672
21	0,3960	-0,3482	1,1888	1,4903	0,1276	0,3134
22	2,5834	0,3047	1,8182	2,2867	1,1767	2,5533
23	1,3715	0,1160	0,5358	0,7953	0,5840	0,8791
24	0,1070	-0,3844	0,8870	0,4028	-0,5379	-0,1085
25	0,3878	0,6935	-1,2043	0,4494	1,6211	0,3017
26	0,6370	1,3686	-1,1427	1,0881	2,4984	1,6227
27	-0,4134	-0,1009	0,5187	0,0887	-0,4935	-0,0505
28	0,3012	0,6882	-0,3279	0,2807	0,8581	0,9250
29	0,1807	0,1324	0,0590	-0,4840	-0,3349	0,1643
30	-0,1571	0,5401	-0,4795	0,4139	0,8372	0,4106
31	0,4481	0,7915	0,0997	0,0937	0,5132	1,3598
32	-1,8200	0,3262	-1,2775	-1,4782	-0,4999	-1,2786
33	-0,0326	0,7373	-1,0500	-0,8513	0,4552	0,1043
34	0,0126	-0,7596	1,7088	1,3755	-0,7542	-0,4323
35	0,7304	0,4171	0,1536	-0,9773	-0,4667	0,5097
36	-0,0778	0,2087	-0,5589	-0,2016	0,2364	-0,6401
37	0,5507	-0,2709	1,3028	1,1622	-0,1943	0,1572
38	-0,4169	-0,8276	1,2991	-0,8497	-2,1830	-1,1474
39	-0,1030	-0,6723	1,2655	-0,6774	-1,8736	-0,8550
40	0,0884	0,1828	0,0582	0,3216	0,2390	-0,1715
41	0,6025	0,8830	-0,1049	-0,1211	0,5999	1,0324
42	-0,4532	-0,9967	1,5779	0,0685	-1,8061	-1,2850
43	-0,5208	-0,0976	-0,1547	-1,0145	-0,5868	-1,5164
44	-3,7047	-1,1375	-3,2503	-0,5461	-0,1055	-1,6842
	0,0000	0,0126	0,0000	0,0000	0,0000	0,0000
	0,7943	0,4564	1,1613	0,7976	0,9556	0,8138
	z 7	z 8	z 9	z 10	z 11	z 12
	0,94647	0,680617	0,793937	0,76887	0,72846	0,25341
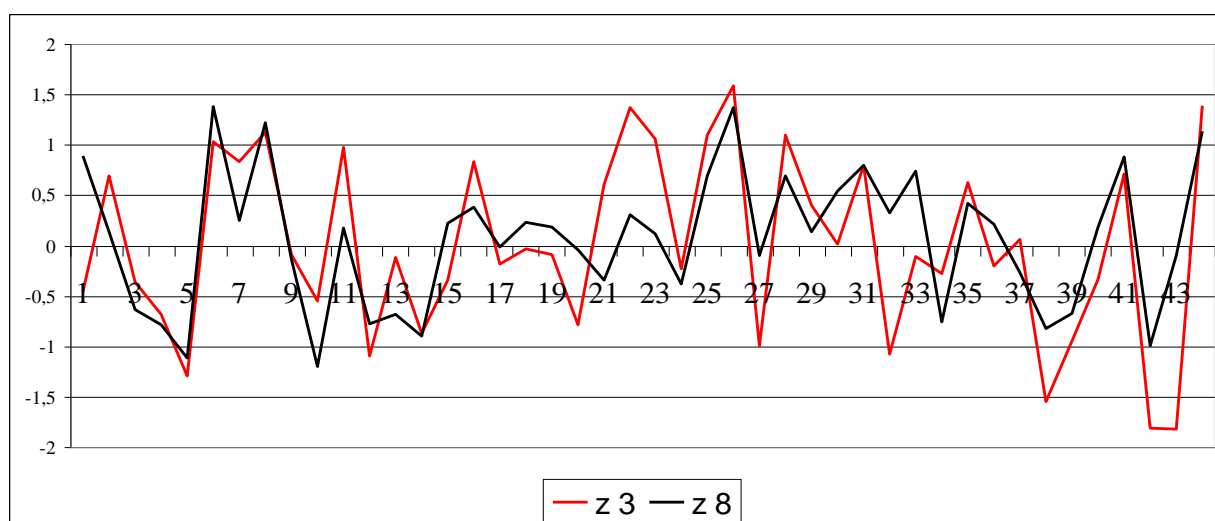
Рисунок 2. Согласованность динамик «междугородный трафик для предприятий» (z_3) и «количество междугородных разговоров на 1 предприе» (z_8)

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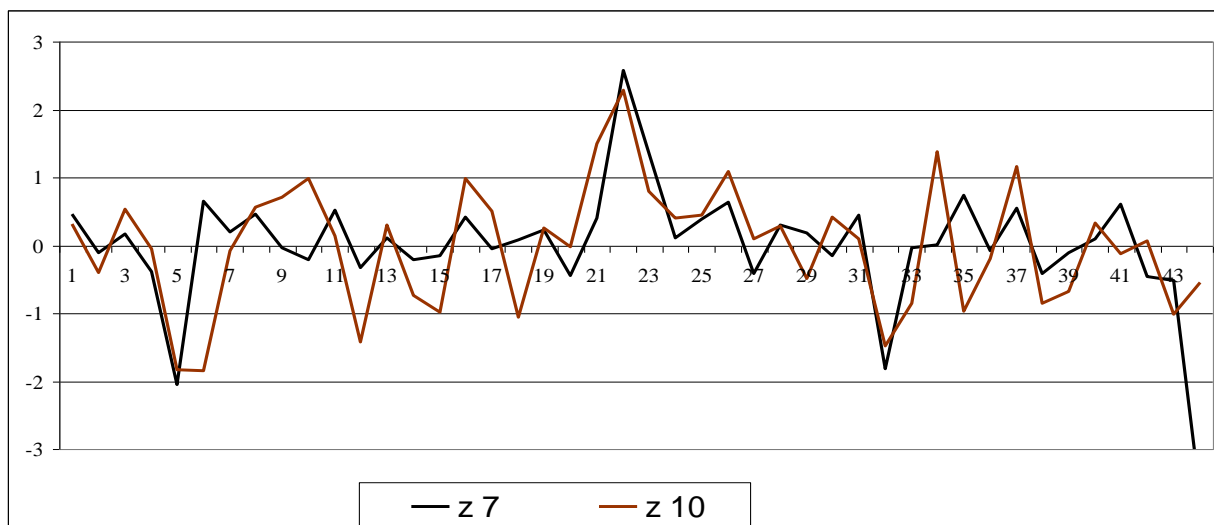
Рисунок 3. Согласованность динамик «количество ОТА для населения» (z_7) и «ввод в действие жилых домов» (z_{10})
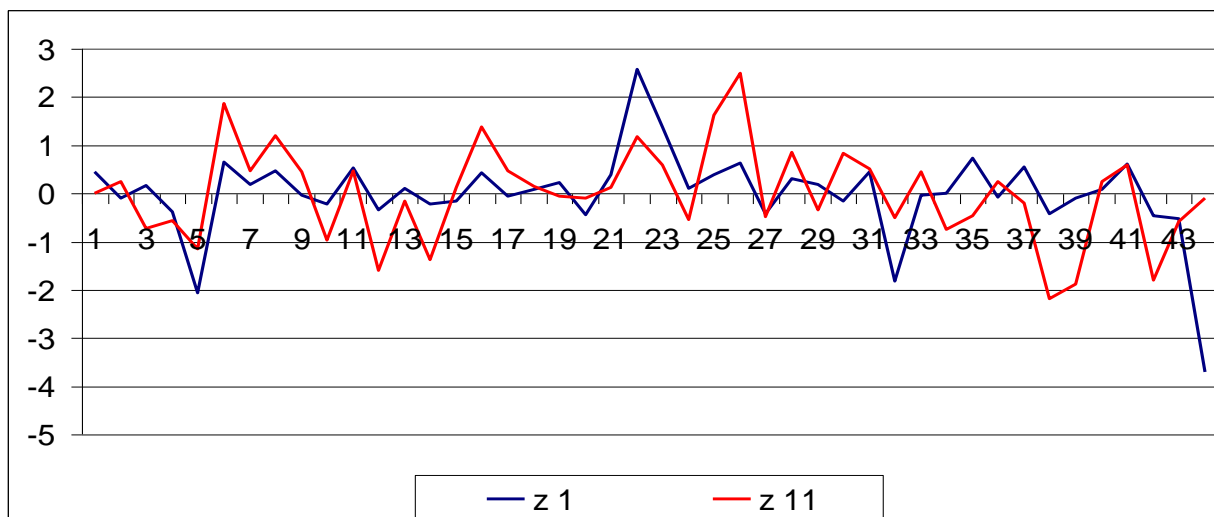
Рисунок 4. Согласованность динамик «««расходы предприятий на услуги связи» (z_1) и «количество предприятий»» (z_{11})

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Contents

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http://isindexing.com/isi/journaldetails.php?id=327

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https://www.myendnoteweb.com/EndNoteWeb.html

Research Bible (Japan)
http://journalseeker.researchbib.com/?action=viewJournalDetails&issn=23084944&uid=rd1775

Scientific Object Identifier (SOI)
http://s-o-i.org/

РИНЦ (Russia)
http://elibrary.ru/contents.asp?issueid=1246197

Google Scholar (USA)
http://scholar.google.ru/scholar?q=Theoretical+t-science.org&btnG=&hl=ru&as_sdt=0%2C5

Turk Egitim Indeksi (Turkey)
http://www.turkegitimindeksi.com/Journals.aspx?ID=149

Directory of abstract indexing for Journals
http://www.daij.org/journal-detail.php?jid=94

DOI (USA)
http://www.doi.org

CrossRef (USA)
http://doi.crossref.org

Open Academic Journals Index (Russia)
http://oaji.net/journal-detail.html?number=679

Collective IP (USA)
https://www.collectiveip.com/

Japan Link Center (Japan) https://japanlinkcenter.org

PFTS Europe/Rebus:list (United Kingdom)
http://www.rebuslist.com

Kudos Innovations, Ltd. (USA)
https://www.growkudos.com

Korean Federation of Science and Technology Societies (Korea)
http://www.kofst.or.kr

AcademicKeys (Connecticut, USA)
http://sciences.academickeys.com/jour_main.php

Sherpa Romeo (United Kingdom)
http://www.sherpa.ac.uk/romeo/search.php?source=journal&sourceid=28772

Cl.An. // THOMSON REUTERS, ResearcherID (USA)
http://www.researcherid.com/rid/N-7988-2013

RedLink (Canada)
https://www.redlink.com/

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http://orcid.org/0000-0002-7689-4157

TDNet
Library & Information Center Solutions (USA)
http://www.tdnet.io/

Yewno (USA & UK)
http://yewno.com/

RefME (USA & UK)
https://www.refme.com

Stratified Medical Ltd. (London, United Kingdom)
http://www.stratifiedmedical.com/

THE SCIENTIFIC JOURNAL IS INDEXED IN SCIENTOMETRIC BASES:

Advanced Sciences Index (Germany)
http://journal-index.org/

SCIENTIFIC INDEXING SERVICE (USA)
http://sindexs.org/JournalList.aspx?ID=202

Global Impact Factor (Australia)
http://globalimpactfactor.com/?type=issn&s=2308-4944&submit=Submit

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http://www.citefactor.org/journal/index/11362/theoretical-applied-science

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JIFACTOR

http://www.jifactor.org/journal_view.php?journal_id=2073

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http://journalindex.net/?qi=Theoretical+%26+Applied+Science

Eurasian Scientific Journal Index (Kazakhstan)

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SJIF Impact Factor (Morocco)

http://sjifactor.inno-space.net/passport.php?id=18062

Indian citation index (India)

http://www.indiancitationindex.com/

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Index Copernicus International (Warsaw, Poland)

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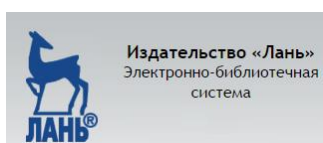
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