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Economic sciences

THE ROLE OF HUMAN RESOURCES IN THE DEVELOPMENT OF SMALL AND MEDIUM ENTERPRISES

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The purpose of the study. In order to ensure the effective use of human resources, this study will examine the role that human resources have played in the growth of small and medium-sized businesses in Azerbaijan, the link between productivity and staffing levels, and potential remedies.

Research methodology. This research included observation, analysis, and comparison techniques. Application of the study's relevance. Enterprises, employers, and state agencies can utilize the analysis' findings.

Originality and scientific innovation of research. From our perspective, the human development management subsystem's functional responsibilities should also include measures to develop programs for the implementation of policies aimed at boosting the intellectual base, creating favorable conditions for effective use and exchange of acquired knowledge and intellectual resources, and increasing the intellectual base.

Keywords: human resources, strategy, development, micro, enterprise, management

Açar sözlər: insan resursları, strategiya, inkişaf, mikro, müəssisə, idarəetmə

Introduction

Modern management of human resources practices and their application leads to the establishment of new needs. A small-group cooperative environment, employee involvement in achieving organizational goals, delegating responsibility to subordinates, the creation of controlling teams, and utilizing them in management are all necessary for the strict regulation of supervisor-subordinate relationships.

It is currently quite challenging to draw distinctions between classic HRM theory and other aspects of strategic Human Resources Management (HRM). Selecting the criterion for distinction presents challenges. The development of new traits and talents is brought to the forefront when using human resources as a strategic resource, necessitating the employment of cutting-edge management techniques.

A small number of human resources in small and medium-sized businesses results in superior indicators and various selection criteria. In this sense, effective human resource management is linked to business efficiency in small and medium-sized businesses. Over the past fifty years, the idea of strategic human resource management has changed. Numerous studies have made the case that human resources at the micro level should be examined in relation to the business's objectives, strategy and have recommended a method for selecting employees from this perspective, as well as for forming bonds, integrating, etc. Consider it vital to consider these factors and to advance HRM as the primary goal (Cascio W. F., 2015; Kaufman B.E., 2015).

Yet in recent years, numerous IRI ideas as well as varied ways of implementing them have been noted. The concept of human capital and human resources is still relevant today, unlike at the end of the 20th century when the interests of opposing groups and the institutional approach served as the foundation (Beer M., Boselie P., Brewster C., 2015). The overpowering nature of the strategical approach to HRM, a progressive break from conventional personnel control, and a transfer to it is also suggested by numerous researchers (Bratton J., Gold J., 2015). Several others broaden the scope of IRI activities to include the influence of human resources on the business's accounting metrics at the micro level, as well as corporate responsibility, situational and strategic features (Kaufman B.E., 2015;). For example, it investigates the influence of high-performance work organization systems on staff happiness and how it varies based on their connections within the organization (Van De Voorde K., Beijer S., 2015).

As a result, the following tendencies may progressively be used to describe the growth and evolution of strategic Human Resources Management concepts:

- ❖ Design of a strategic IRI on labor and personnel in the management system;

❖ *Development of a Single Category Apparatus Reflecting the Subject Area of Strategic HRM, Specifically, "Strategic HRM" and "HRM Strategy", "Types of HRM Strategies", "Vertical Integration of IRI Strategies" and "Horizontal Integration of HRM Strategies" Concepts;*

❖ *Recognition of the Impact Factor of the Systematic Mechanism of Strategic HRM (HR Strategy - Personnel Policy - HRM Specialist The number of empirical investigations has significantly increased;*

❖ *The amount of empirical research on the influence of IRI methods and practices on organizational performance has increased significantly.*

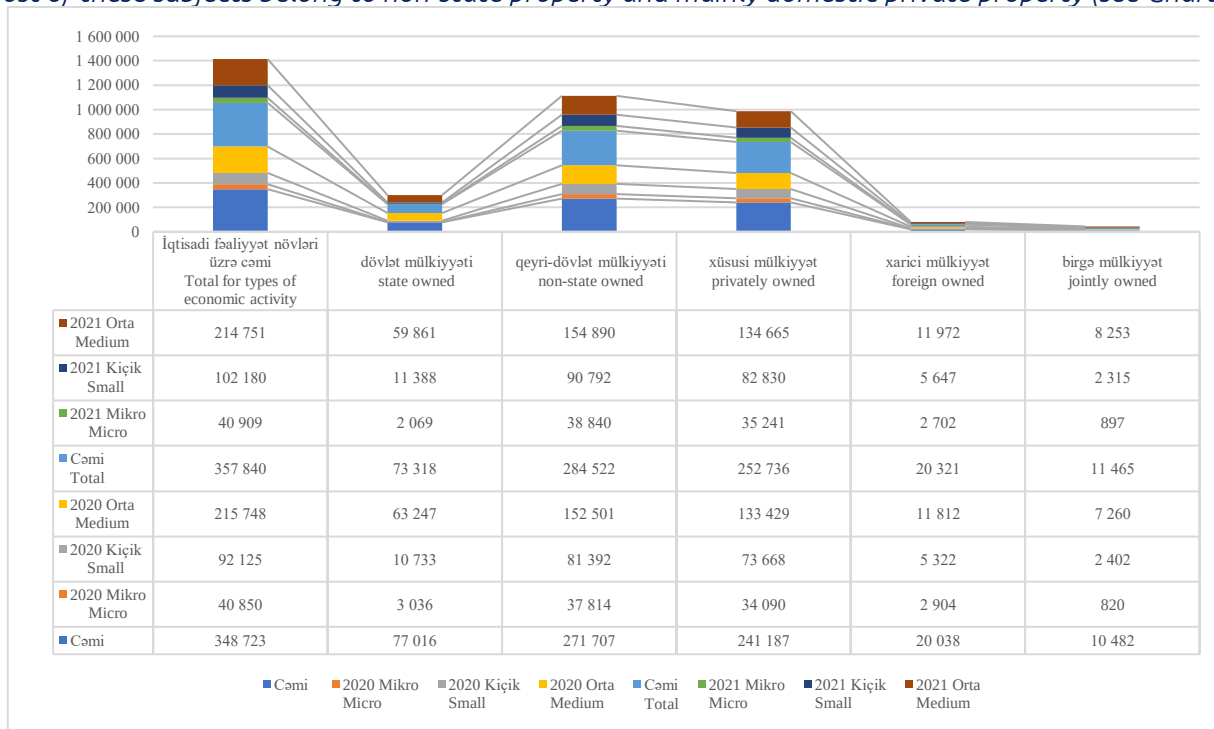
Employees are regarded as the company's assets, which assures its achievement in the competitive fight, and must be positioned, inspired, and developed to fulfill the stated goals, according to the current approach to human resource management. There are various sorts of strategies in the context of strategic management:

- Business strategy
- Corporate strategy
- Functional strategy

The strategic planning process as an entire supply the mechanism for achieving the organization's and its structural divisions' long-range objectives, namely the protection and development of the company's main competencies - long-term competitive advantages over other market/industry players (Yakhontova E.S., 2013). Using a strategic approach to human resource management ensures that the company's competitiveness is maintained and developed. When the company's many tasks, such as career development, personnel selection, recruiting, motivation, certification, and so on, are united in a unified program that is part of the business plan, human resource management may have a substantial influence on the company's outcomes. The impact of introducing HRM practices will be limited unless they are integrated into the broader business plan.

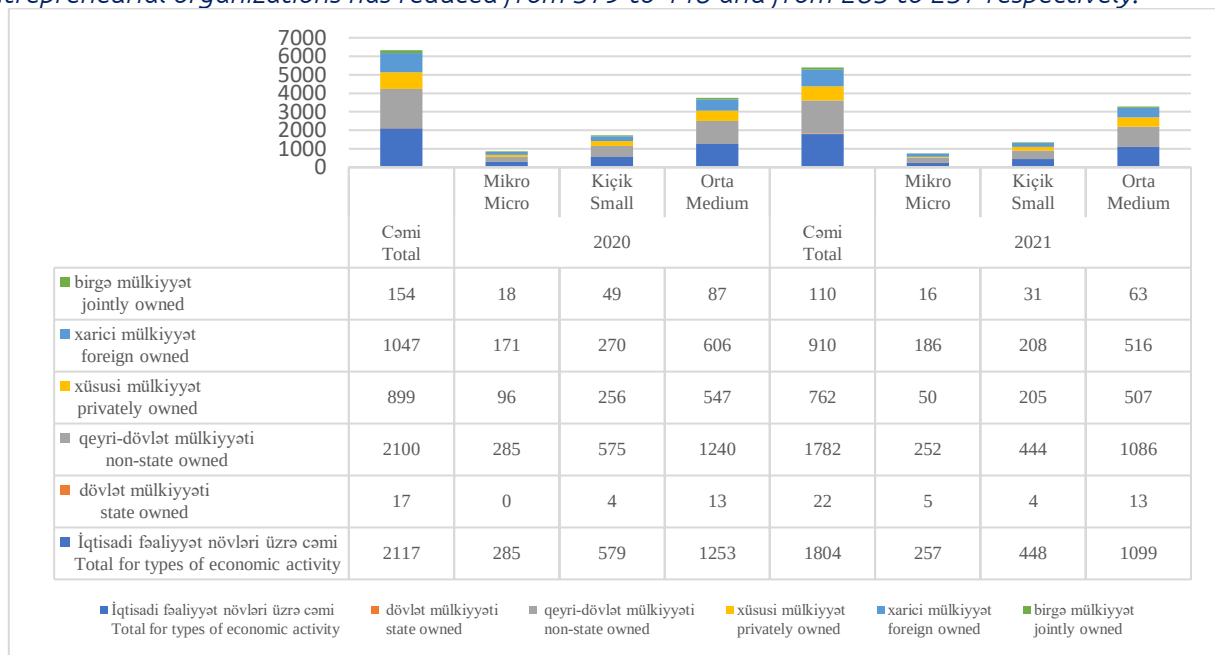
The modern state of human resources management in small and medium-sized enterprises in the Republic of Azerbaijan

One of the top priorities for the contemporary domestic economy is the growth of small businesses. The government is consciously working to help regional small businesses by developing initiatives at the regional level. This resulted in a rise from 313,660 to 353,027 in the number of micro and small company entities operating in 2020–2021. Micro and small business entities produced added value worth 6073.1 million manats in 2020; in 2021, this indicator rose to 8175.1 million manats. Additionally, a rise in staff numbers was seen at the same period. Therefore, from 133 thousand to 143.1 thousand individuals were employed by micro and small businesses in 2020–2021. This is a 12.5% gain. The analysis shows that most of these subjects belong to non-state property and mainly domestic private property (see Chart 1.).



Graph 1. Number of employees working in micro, small and medium enterprises, people
Source: compiled based on the data of <https://www.stat.gov.az/source/entrepreneurship/>.

The analysis of international experiences also shows up in luring in human capital. As a result, current knowledge demonstrates that the total number of foreign employees in small and micro-entrepreneurial organizations has reduced from 579 to 448 and from 285 to 257 respectively.



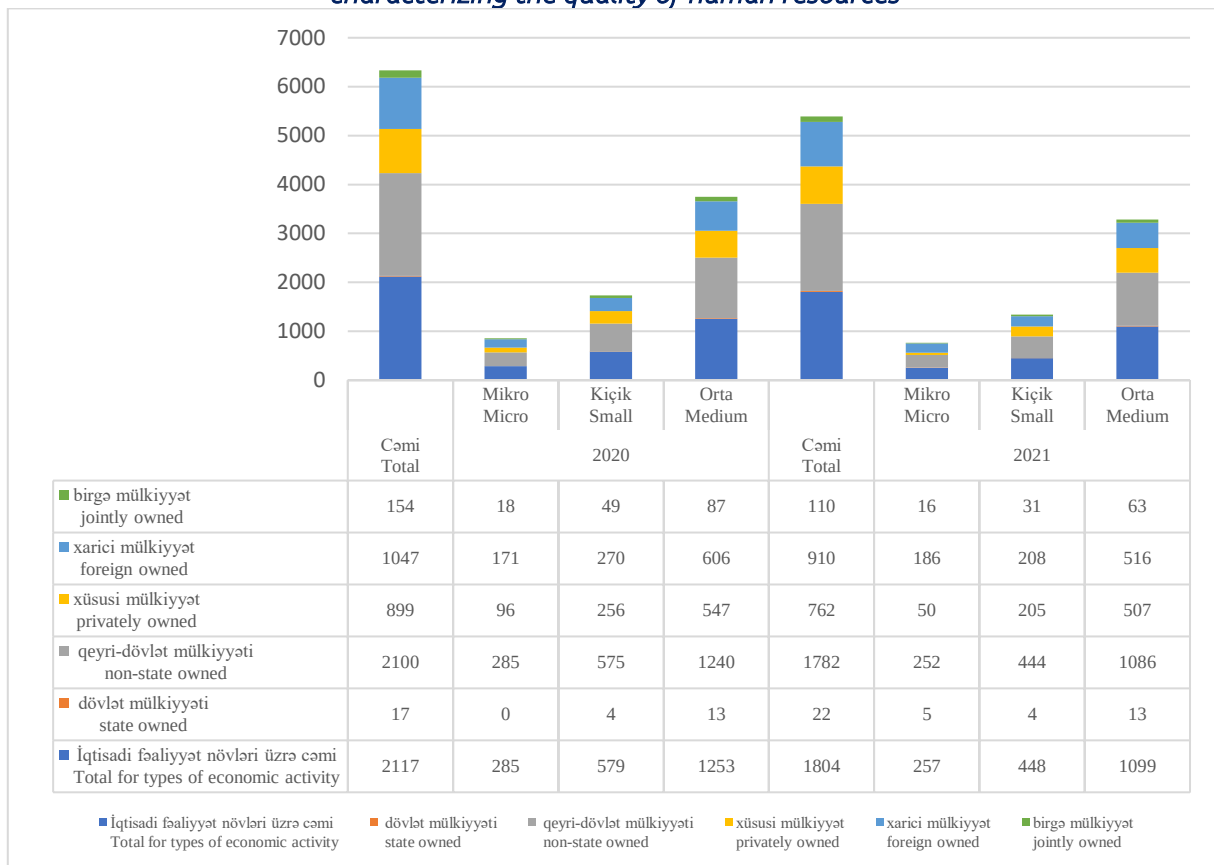
Graph 2. Number of foreigners working in micro, small and medium enterprises, people
Source: compiled based on the data of <https://www.stat.gov.az/source/entrepreneurship/>.

The main issues (a minimal amount of initial investment, lengthy periods of growth in the company, financial challenges, a relatively high degree of risk at the first phase of the enterprise's life cycle, a high labor intensity and a low level of professional management of the head of a small enterprise, etc.) are similar in many ways, as evidenced by experience from other countries.

More than 143.1 thousand individuals, or more than 2.7% of the total working population of 5303.9 thousand, were employed in the micro- and small-business sector in 2021. However, it is these individuals that develop original intellectual assets and actual business concepts. A small business's ability to compete and develop is boosted by its human capital. Entrepreneurial structures must be business-like, and entrepreneurs must be informed, considerate, and competent. In this context, education should be selected as a criterion for assessing the caliber of human resources. As a result, it's important to evaluate the link between an indication like the caliber of human resources and the set of primary criterias of company conduct consider the relationship of this criterion as a condition for the development of small business.

Table 1.

Comparative analysis of indicators characterizing the development of enterprises and indicators characterizing the quality of human resources



Source: compiled based on the data of <https://www.stat.gov.az/source/entrepreneurship/>.

According to the study, there is a clear correlation between the metrics for measuring the added value that businesses generate, the number of people employed by them, and the number of man-hours they require. The research demonstrates the extremely low levels of professional training indicators among staff, and we believe that steps in this regard should be taken. The obtained results have a practical guidance in that the impact of human resources' involvement and function in supporting innovative ideas and guaranteeing small business competitiveness has been identified, and the association between these indicators and the standards for judging the quality of human resources has been confirmed.

Now, the majority of micro and small company operations in Azerbaijan operate in the service industry. In contrast to many other nations, our service industry is considerably undeveloped. This is due, in part, to antiquated human management models. The outdated Soviet model, nevertheless employed by many businesses today, is deemed unproductive if the business' interests come first and the personnel have no financial incentive to do their duties. With the development of market relations, many switched from this model to external management techniques, which aided in raising management and service quality. However, these strategies are not anymore applicable since they prioritize the financial gain of the employee over other crucial variables. The rapid growth of economic activity in modern post-industrial society contributes to the expansion of the service sector. As a result, both the management and the employee in this sector must be ready to react to continually shifting market circumstances, which include assessing professionalism and credentials on a regular basis, as well as increased competition.

Conclusion

The main problems of human resource management in small enterprises are:

- use of human potential and quality in poorly way;
- inadequate organizational and methodical support for human resource management;
- insufficient development of assessment and recruitment techniques;
- the existence of challenges in matching individual motivation with the organization's overall goals.

The process of enhancing a small business's human resource management might involve the following goals:

- *growth of corporate HR policy objectives and standards;*
- *establishment of the HR company leadership mechanism;*
- *to identify the road map of the process of human growth and knowledge transformation;*
- *Inclusion of HR in the business's intellectual properties;*
- *Implementation of procedures on the creation and utilization of human resources' intellectual capabilities in line with the enterprise's aims.*

The provided personal growth management objectives of a small industrial enterprise can be used to prepare preliminary organizational decisions about the likelihood of shaping a subsystem of human development management in the organizational structure of specific businesses operating in the current market environment. We believe that the functional tasks of the human development management subsystem should cover standards and measurement techniques to improve programs for the application of procedures aimed at growing the rational base, providing circumstances for the operative practice and exchange of acquired information and intellectual resources, and creating favorable conditions for effective activity.

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INCREASE EFFICIENCY OF ECONOMIC RISKS OF TEXTILE INDUSTRY ENTERPRISES BASED ON THE MECHANISM OF INCREMENTAL INNOVATIVE ACTIVITY

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ТЎҚИМАЧИЛИК САНОАТИ КОРХОНАЛАРИ ИҚТИСОДИЙ РИСКЛАРИНИ ИНКРЕМЕНТАЛ ИННОВАЦИОН ФАОЛИЯТ МЕХАНИЗМИ АСОСИДА САМАРАДОРЛИКНИ ОШИРИШ

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Тўқимачилик саноатида рискларнинг мавжудлиги унинг хомаше базасининг таъминоти ва захирасидан бошланиб, бозорда мижозлар томонидан қарши олинишига қадар бўлган жараёнларни қамраб олади. Бугунги кунга келиб тезкор ўзгарувчан иқлим шароити ҳамда инсонларнинг иқтисодий қонуниятларни ўзларининг ижтимоий ҳолатидан келиб чиққан ҳолда ўзгартира олиш таъсири ҳам риск бошқарувини муқобиллаштиришни тақозо этади. Тўқимачилик саноати иқтисодиёти аввало ишлаб чиқаришнинг эстетик ва руҳий ҳолатга таъсири, маҳсулотнинг инсониятнинг ҳашамати учун юзага келтирувчи маънавий таъсирларни мужассамлаштирган ҳолда ҳар бир мамлакатнинг энг юқори даромад келтирувчи экспорт салоҳиятига эга тармоқни бошқаришни ташкил этади. Бу мураккаб жараёнлар мажмуи инновацион қарашлар билангина барқарор бўлиб қола олмайди, унинг бозор қонуниятларини бўйсундиришга таъсир этувчи стратегиялар ҳамда механизмларнинг иштироки ўта муҳим аҳамият касб этади. Ҳозирда инновацион фаолиятнинг юқори кўрсаткичлари асосан тўқимачилик саноати корхоналарига тўғри келиши, ҳар бир ишлаб чиқарувчи томонидан тан олинган механизм доирасида фаолият олиб боришига ундайди.

Тўқимачилик саноати корхоналарига рақамли технологиялар жалб этиш орқали ҳеч бир мижоз ёки буюртмачига мақтаниб бўлмайди, негаки хатто янги тўқимачи корхона рақамли технологиялар қўшимча қиймат ярата олишини англаган ҳолда инновацион фаолиятни тараққий эттириш ҳамда уни рискларини муқобиллаштириш сингари вазифа кўндаланг туради. Мазкур рискларни инкрементал инновацион фаолият орқали стратегик бошқарувини муқобиллаштириш чора-тадбирларини тўқимачилик саноати корхоналарига инкрементал инновацияларни киритиш бошқариш моделини шакллантиришни тақозо этади.

Инкрементал инновацион фаолиятни асосий мақсади корхонада узлуксиз қўшилган қиймат яратувчи маҳсулотларни ишлаб чиқиш орқали корхонанинг иқтисодий барқарорлигини оширишни таъминлаш саналар экан, дастлаб корхонанинг ички имкониятлари ҳамда шароитини мақсадни амалга оширишга мослаштириш ёки қайта тузилмавий ўзгартириш талаб этилади. Шунга кўра, корхонанинг ички ўзгаришлари юзасидан корхона модернизацион ҳолатни амалга оширади. Бунинг натижасида қўшилган қиймат яратишни оширишни таъминлаш ўз йўлида эришишга қаратилади ҳамда унинг учун шароит ва имкониятлари кенгайтирилган, такомиллаштирилган бўлади.

Корхонанинг ички тузилмавий ўзгаришлари асосида бозорни тобора каттароқ қўламини самарали эгаллаш техник воситаларни такомиллаштириш ҳамда инкрементал инновацияларни ишлаб чиқиш асосида амалга оширилади. Бу ўз навбатида корхонадаги харажатларнинг табиий равишда пасайиши ҳамда маҳсулот таннархининг нисбатан пастроқ бўлишини таъминлайди. буларнинг барчасини мужассамлаштириган ҳолда самарали ишлаб чиқаришни йўлга қўйилганлигини англатади.



Тўқимачилик саноати корхоналарини инкрементал инновациялар асосида бошқариш модели¹

Ташқи триггерлар ўз ичига иқтисодий қонуниятларни ўзгартириш, миқозлар эҳтиёжини кенг қўламда қондириш, ижтимоий танаффусларни қамраб олади. Иқтисодий қонуниятларни ўзгартириш асосан қўшилган қиймат яратишда мавжуд бозорларни эгаллашда рискларни бошқариш қонуниятларини иқтисодий жиҳатдан таъсирини камайтирувчи механизмларни фаоллаштиришни назарда тутди. Шунингдек, бунда рақамли технологиялардан фойдаланиш интенсивлигининг самарадорлигини ҳам устунлик жиҳатларига алоҳида урғу берган ҳолда корхоналарнинг лойиҳа бошқарув офисларини такомиллаштириш билан характерланади. Шунга кўра, корхоналарда инкрементал инновацияларни ишлаб чиқариш рискларни сўндиришдаги асосий контстратегия ҳамда рақамли технологияларнинг улушини оширишни таъминлашни талаб этади.

Мижозлар эҳтиёжини кенг қўламда қондириш мавжуд маҳсулотларни такомиллаштирган ҳолда бозорни тўлмай қолган талабини тўлдириш билан тавсифланади. Шу боис инкрементал инновацияларнинг тадбири миқозларни талабини тўлақонли қондиришда муҳим аҳамият касб этади.

Ижтимоий танаффуслар корхонадаги ижтимоий-иқтисодий муносабатларни ривожлантириш ҳамда рағбатлантириш сингари механизмларини жорий этишга эҳтиёж юзага келмаслигини таъминлайди. Бунда қўшилган қиймат эвазига яратиладиган сармоявий маблағнинг ошиши натижасида ишчи ходимларни рағбатлантириш узлуксизлиги таъминлади.

“Stage Gate” модели лойиҳа менежерлари томонидан янги маҳсулотларнинг рақобатбардошлилик ва барқарорлик даражасини баҳолашга ҳамда уни такомиллаштириш юзасидан корхонадаги мавжуд бизнес жараёнлар ва моделларни самарадорликни ошириш мақсадида қўлланиладиган услуб саналади.² Бунда асосан ишбилармонлик кейслари, яъни қўллаш учун услубий моделларнинг танловли мажмуидан фойдаланган ҳолда рискларни баҳолаш ва уларнинг таъсирини прогнозлаш, энг муқобил тадбирларни ажратиш олиш сингари асосий жараёнлар амалга оширилади.

“Stage Gate” модели маълум бир гоёни беш босқичдан ўтказишдан иборат жараёнларни ташкил этиб, улар маҳсулот ишлаб чиқариш қўламини аниқлаш, бизнес кейсларни шакллантириш, тадқиқ этилган ҳолатларга нисбатан стратегиялар ишлаб чиқиш, ишлаб

¹ Муаллиф ишланмаси

² <https://slidemodel.com/stage-gate-process-for-product-development/>

чиқилган стратегия ва маҳсулот юзасидан лойиҳани синовдан ўтказиш ҳамда реализация қилиш саналади.

“UNITE” модели стратегик менежментда бошқарувда фреймворк модели деб аталади. Фреймворк ўз ичига бир нечта модел ва стратегияларни қамраб олиши мумкинлиги жиҳатдан инкрементал инновацион фаолиятни самарадорлигини таъминлашга ўзининг таҳлилий ҳамда ривожлантириувчи моделларини жалб этиши билан қатор афзаллик ва устунликлар касб этади. Тадқиқот иши доирасида мазкур моделни яъни фреймворкдан фойдаланишда чакана савдо модели, ишлаб чиқарувчи модели, хизмат кўрсатиш модели, франшиза модели, тақсимот моделларига тегишли тактикаларни қўллаймиз. Қисқача қилиб изоҳлаганда мазкур фреймворк инфратузилманинг ҳар бир жараёнига қаратилган моделларни қамраб олади.

Трансформацион мақсадлар модели корхона олдига қўйилган мақсадни амалга ошириш учун хизмат қилувчи ташкилий-иқтисодий механизмларни, уларнинг рискларини оптималлаштириш ҳамда келгусида тадбиқ истиқболлини баҳолашда бажарилган ва бажарилажак ишларни саралайди ва муддатларли амалга оширади. Бордию қўйилган мақсад амалга оширилиши таъминланмаса, у ҳолда қайтадан ташқи триггерлар кўриб чиқилади ва тегишли ўзгартиришлар устида тадқиқот олиб борилади. Бу ҳолат мақсадга йўналтирилганлик амалга оширилмагунга қадар давом этади.

Трансформацион мақсадлар амалга оширилиши таъминланиши натижасида инновацион фаолиятни стратегик бошқариш таъминланган ҳамда ушбу стратегияни қайта кўриб чиқишга ҳолат қолмаган бўлади. Шунга кўра, рискларни сўндирувчи босқичли инновациялар ишлаб чиқишни давом эттиришни жадаллаштириш мумкин. Ҳар қандай стратегиянинг ўзига хос хизмати ўталгач уни ёки такомиллаштириш ёки бошқа стратегияга ўзгартириш тавсия этилганлиги боис корхона учун стратегияларни такомиллаштириш янги бизнес моделларга эгилувчан моделларни жалб этишни тақозо этилади. Бу ишлаб чиқариш циклини тезлаштиришга хизмат қилади, яъни маҳсулотнинг ҳаётийлик индексининг оширилиши таъминланади. Бу ўз навбатида инвестицион жозибадорликни салмоқли ошишига сабаб бўлади, ушбу ҳолат рискларни бошқариш механизмларини самарадорлигини таъминлашга ижобий таъсир қилади.

Юқорида келтирилган натижаларга эришиш учун инкрементал инновацион фаолият маҳсулотлари учун тўлдирувчи инновацияларни ишлаб чиқиш талаб этилади. Бунинг учун тўлдирувчи инновацияларнинг тузилмасини ишлаб чиқиш механизмини яратиш зарур ҳисобланади. Яъни, инкрементал инновацион маҳсулот учун тўлдирувчи маҳсулот билан комплекс сифатида ишлаб чиқариш механизми талаб этилади. Аммо шуни таъкидлаш жоизки, тўлдирувчи инновацияларни чегалаш қўлланилмаса инкрементал инновацион маҳсулотни ишлаб чиқаришга тўсқинлик қилиш ва бозорни тез тўйинтирган ҳолда маҳсулотнинг ҳаётийлик индексини сўнишига сабаб бўлиши мумкин.

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Geographical sciences

ASSESSMENT OF THE CONSEQUENCES OF FIRE ON THE TERRITORY OF THE DALNENY FORESTRY OF THE ZHANASEMEY BRANCH

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Abstract

Wildfires are periodic disturbances that greatly affect the structure and distribution of global forest ecosystems, changing soil erosion causing loss of biodiversity, habitat, production and productivity, endangering human lives and destroying livelihoods. Operational, reliable and accurate information on the state of forest ecosystems is the basis for the effective and environmentally safe use of forest resources, the organization of specially protected natural areas, other types of forest and nature management and remote monitoring of the state of the environment. To a special extent, all this applies to the forests of the Eastern Kazakhstan region. The implementation of forest monitoring requires the involvement of a wide range of means of obtaining information; an important place is given to space remote sensing systems. The quantitative and qualitative characteristics of forests are constantly changing in the process of natural development of biogeocenoses and under the influence of various anthropogenic and natural factors: its composition is changing, borders are migrating.

Keywords: forest management, remote sensing of the earth, forest.

In many cases low-value deserts or clearings appear in areas of burnt areas formed as a result of fires and subsequently cleared of burnt forests. This problem is the most relevant for the forestries of the Semey Ormany GLNR, since here forests play a leading role in protecting the territory from dust storms, slowing down the processes of erosion and deflation. In addition, ribbon pine forests stretching across the entire territory of East Kazakhstan are relic, as they grow on sandy deposits of the ancient runoff valley, where desertification processes and prevailing winds led to the formation of eolian landforms (dunes), which are very well deciphered inside the forests. on space images due to the characteristic wavy structure and crescent shape.

According to the report of the GLPR "Semey Ormany", the fire season was from April to October. Taking into account the weather conditions of the forestry, the number of days with increased (IV, V according to Table 1) hazard classes (hereinafter KPO) amounted to 60% of the total number of days of the fire season.

The compiled local scale (Table 1) for determining the fire hazard class according to weather conditions for tape burs allows the fire departments to carry out their work in a differentiated manner.

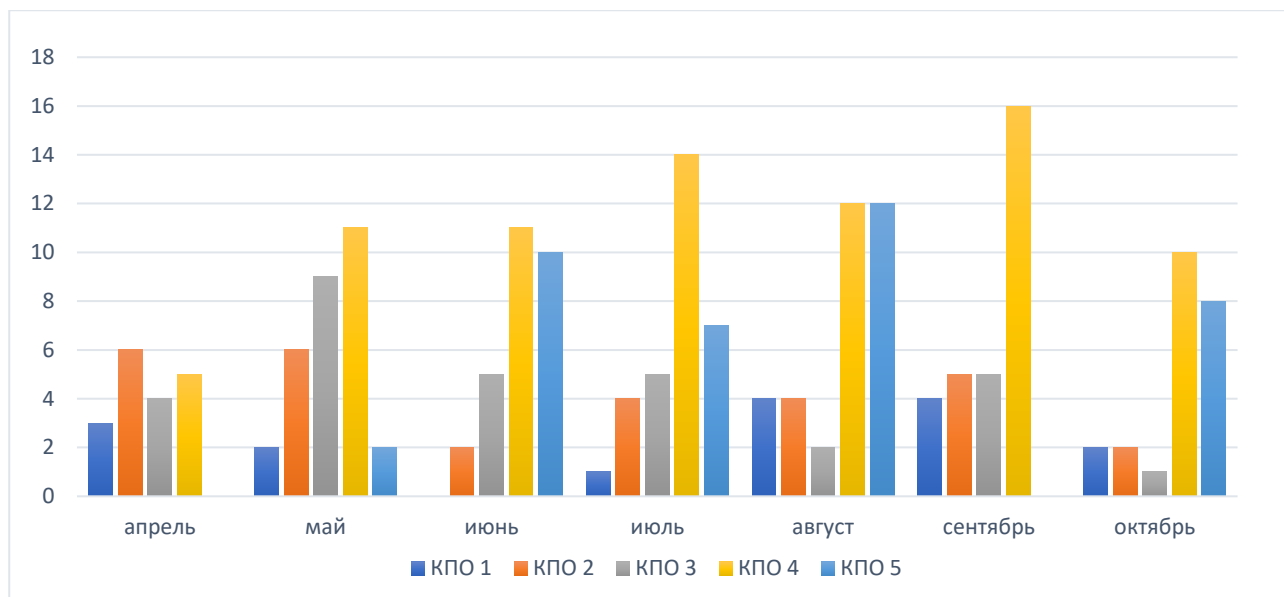


Fig.1 Dynamics of changes in the fire hazard class by months during the fire season

Application of geographic information systems (GIS) allows you to develop a unified methodology for environmental monitoring of the state of natural resources in specially protected natural areas and create a unique digital database for a specific area with its further use for a comprehensive study [6].

At present, the belt forests are very much disturbed due to the destructive effects of fires and predatory logging. Radishes and wastelands, forest clearings and large areas of burnt areas, and fire-burnt areas, where only steppe grass vegetation grows, have become an integral part of the landscape. The unforested areas make up more than half of the entire territory of the forestry. Such factors greatly increase the high fire hazard and the likelihood of repeated forest fires.

The high flammability of the forest of the reserve is caused by a number of factors, the main of which are: hot and dry summers with frequent and strong winds, temperature amplitude up to 90 °C, average annual rainfall 300 - 600 mm, easy burning of forest combustible materials and their burning intensity.

The images used in this study were obtained from the archives of the United States Geological Survey (USGS). Access to it is possible both for simple viewing of the catalog, and for direct receipt of the materials stored in it. Since 1972, the USGS/NASA collaborative series of Earth observation satellites, Landsat, has continuously acquired images of the earth's surface, providing continuous data to help land surveyors and policy makers make informed decisions about natural resources and the environment. Landsat is part of the USGS National Terrestrial Imaging (NLI) Program.

After screening, we selected only the four most suitable images based on the absence of clouds and relative to the same season and the corresponding time interval obtained in 1991, 2010, 2018, 2020 and 2022 using Landsat Thematic Mapper (TM) and Operational land imager.

The availability of a complete archive of several decades of medium-resolution Earth observation data has greatly increased the potential of remote sensing to support research on global climate change and the Earth's carbon cycle. We explored a dense time series of Landsat multisensor data Normalized Difference Vegetation Index (NDVI) in the Far Forestry of the GLPR "Semey ormany".

Landsat satellite data collection for the study area was converted to a stack of NDVI time series image layers. First, NDVI was calculated for each individual Landsat scene based on the well-known relationship of high red absorption and high reflectance of incoming solar radiation in the near-IR electromagnetic spectrum as an indicator of "green" vegetation and vegetation productivity.

$$NDVI = (NIR - Red) / (NIR + Red),$$

where NIR is near infrared light;

Red - visible red light.

NDVI was used in this study because it is a reliable environmental indicator. Due to its spectral characteristics and rather long history, NDVI has become the most commonly used tool for assessing forest and non-forest vegetation around the world.

The density of vegetation at a certain point in a space image is equal to the difference between the intensities of the reflected light in the red and infrared ranges, divided by the sum of their intensities.

Processing of satellite images was carried out using a specialized program ArcGis . The index can take values from -1 to 1. For vegetation, the NDVI index takes positive values, usually from 0.01 to 1.

Table 1

Discrete scale NDVI

No.	The color in the picture	Object type	Meaning of NDVI
1.		0 - 0.075270057	cinder
2.		0.075270057 - 0.1	Open ground with sparse vegetation
3.		0.1 - 0.15	Plantations damaged by fire
4.		0.15 - 0.2	Medium-aged forest (70 to 90 years old)
5.		0.2 - 0.3	Mature forest (age 100 to 110 forest)
6.		0.3 - 0.4	Mature forest (age 110 to 120 forest)
7.		0.4 - 0.5	Mature forest (age 120 to 130 forest)
8.		0.5 - 0.6	Mature forest (age 130 to 180 forest)

NDVI gradation in the range of 0.001-0.011 (open soil) is typical for the areas most affected by the fire, since the soil and vegetation cover is practically absent. This area is marked in red in Figure 3 and coincides with the fires.

NDVI gradation in the range 0 - 0.075270057 (burnt area) part of the forest area where trees are damaged or destroyed by fire. This area is marked in red in the figures.

The NDVI gradation in the interval 0.075270057 - 0.1 (Open soil with sparse vegetation) is typical for the areas most affected by the fire, since the soil and vegetation cover is practically absent. This area is marked in purple in the figures.

Gradation NDVI in the range of 0.1 - 0.15 (Plantations damaged by fire) brick color is assigned in the figures and corresponds to areas with vegetation damaged by fire.

The NDVI gradation in the range of 0.15 - 0.2 (Medium-aged forest) in the figures is assigned a blue color and corresponds to areas with forest plantations aged from 70 to 90 years.

The NDVI gradation in the range of 0.2 - 0.3 (Mature forest) in the figures is assigned a yellow color and corresponds to areas with forest plantations aged from 100 to 110 years.

The NDVI gradation in the range of 0.3 - 0.4 (Mature forest) in the figures is assigned a light green color and corresponds to areas with forest plantations aged from 110 to 120 years.

The NDVI gradation in the range of 0.4 - 0.5 (Mature forest) in the figures is assigned a light green color and corresponds to areas with forest plantations aged from 120 to 130 years.

The NDVI gradation in the range of 0.5 - 0.6 (Mature forest) in the figures is assigned a light green color and corresponds to areas with forest plantations aged from 130 to 180 years.

NDVI values in the period from 1991 to 2022 in the area under consideration remain below typical values for forest vegetation. This may indicate the presence of factors that limit the growth and development of vegetation in this particular area. Possible reasons for low NDVI values may include changes in climatic conditions, lack of water, soil degradation, exposure to pests or plant diseases, and anthropogenic factors such as logging or illegal logging. Low NDVI values may indicate a deterioration in the condition of vegetation and the ecosystem as a whole. This can have negative consequences for biodiversity, ecosystem balance, soil retention and other ecological functions associated with forest vegetation.

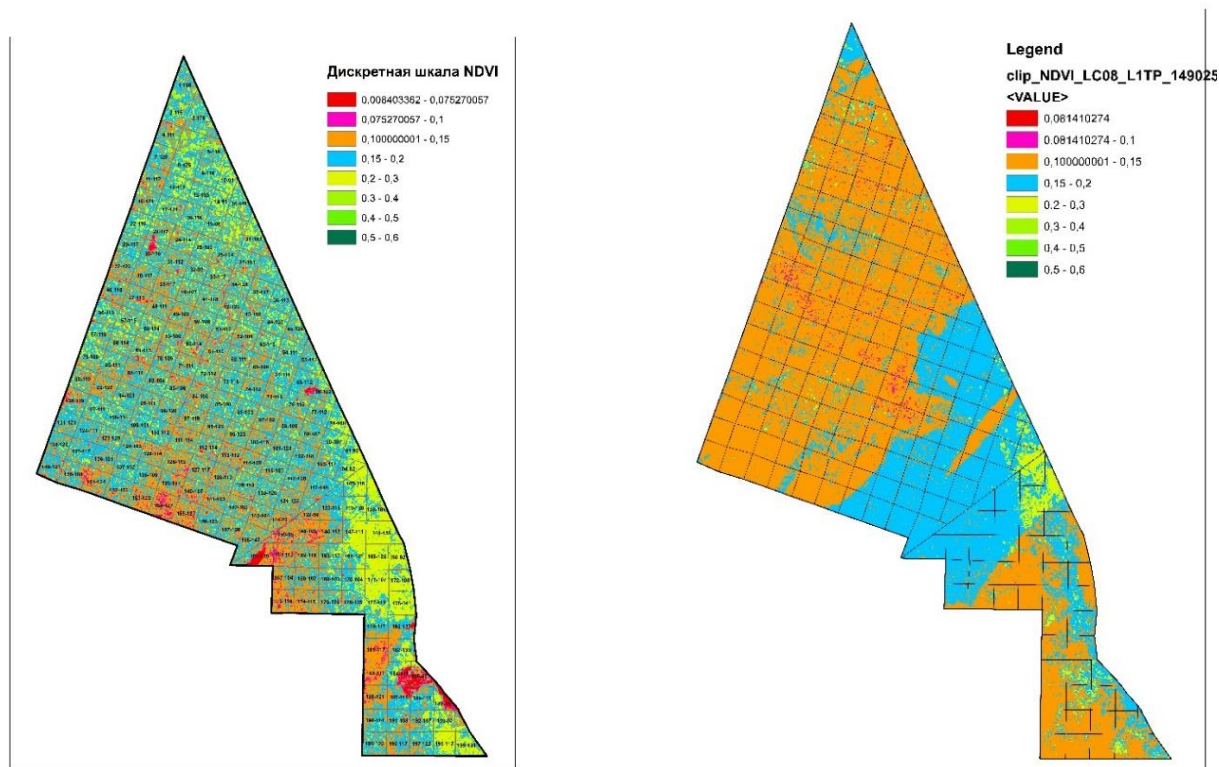


Fig.2

The figure below shows the results of processing the NDVI index for 1991. The analysis of satellite images of this year made it possible to determine that the middle-aged forest prevailed on the territory of the Far Forestry. However, the presence of forest fires was also found in plots 23, 30, 65, 160, 184, 185, 187, 188, and 189. about the presence of a large fire, the area of which spread to 5 blocks. This circumstance is important for further analysis and assessment of the state of forest cover in this area. Such observations are valuable for scientific research, as they allow studying and analyzing the impact of fires on ecosystems and developing forest management strategies aimed at preventing and reducing fire hazards in the future.

An analysis of images for 2022 allows us to conclude that there is a positive trend in the area not affected by fires. In these areas, there is an increase in forest density with age over 90 years. However, illegal felling of trees has a negative impact. In the 2022 image, it is noticeable that the areas in the forest belt show a negative trend with an NDVI index from 0.15 to 0.2. This indicates a decrease in vegetation density and possible damage from illegal logging.

These observations point to the need to take measures to control and prevent illegal logging in order to maintain and restore healthy forest cover and maintain positive dynamics in the area not affected by fires.

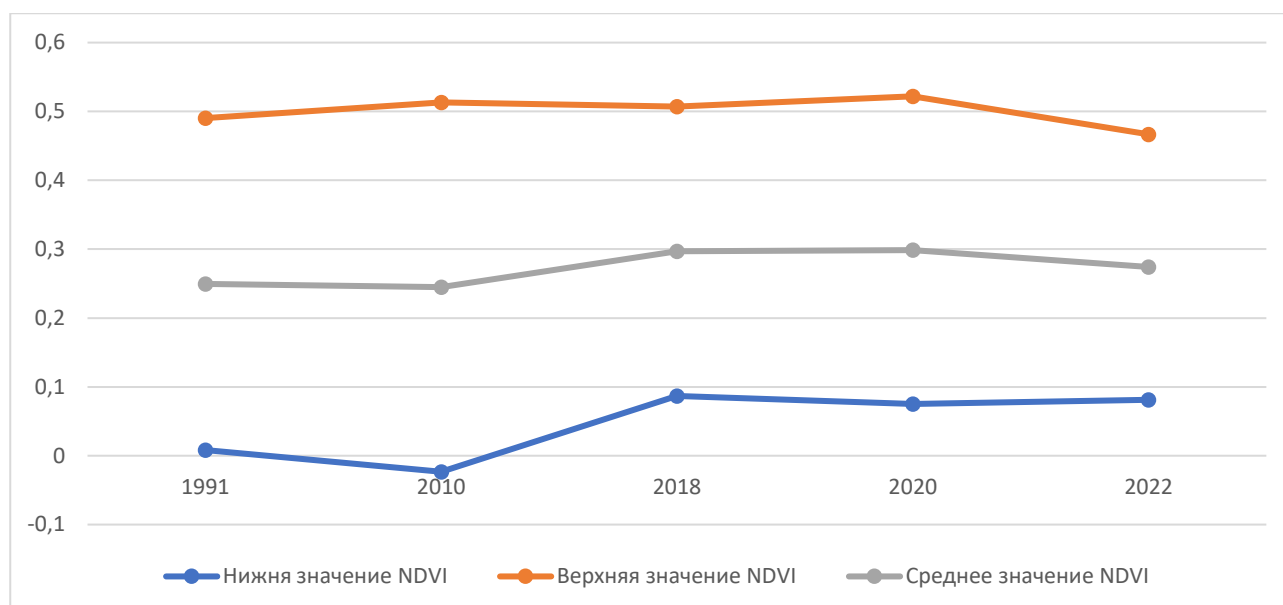


Fig.3

A graph based on data on the lower, upper and average values of the change in the NDVI indices from 1991 to 2022 illustrates the dynamics of vegetation indicators on the territory of the Far Forestry. Based on the analysis of images and vegetation index (NDVI), the following conclusions can be drawn:

1. Analysis of images and NDVI allows you to observe changes in the state of vegetation in the area under consideration. An analysis of the average value of the NDVI index shows that in the period from 2010 to 2018, an increase in this value began. This indicates an increase in the density and health of vegetation in the area under consideration during this time period.

2. The analysis shows that in the period from 1991 to 2010, the burned areas in the territory under consideration increased. This indicates an increase in the area where vegetation has been damaged or destroyed by fires.

3. The analysis shows that in the period from 2010 to 2018, there is a good dynamics of vegetation restoration and a decrease in areas with an NDVI index of zero. This indicates a positive change in the state of vegetation in the area under consideration during this time period. Vegetation restoration can be the result of natural recovery processes from fires or other damaging events, as well as the effects of vegetation regeneration and protection measures. A decrease in areas with an NDVI index of zero indicates an increase in vegetation density in these areas where vegetation was previously absent or damaged. These positive changes can have a beneficial effect on the ecosystem and biodiversity, providing healthier and more sustainable habitats for plants and animals.

4. The analysis shows that in the period from 2020 to 2022, there was a decrease in the upper value of the NDVI index. This decrease may indicate the impact of illegal logging in the area under consideration. Illegal logging is the illegal practice of logging without proper permits or controls. Such actions can lead to a significant reduction in the area of forest cover and the destruction of the ecosystem. This can have a negative impact on biodiversity, soil retention, watersheds and other ecological functions of the forest. A decrease in the upper NDVI value indicates a decrease in the density and health of vegetation in the area, which may be associated with illegal logging. To counter illegal logging and conserve forest resources, appropriate measures should be taken, including increased control and punishment for illegal activities, educational programs and the promotion of sustainable use of forest resources.

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Geological and mineralogical sciences

ASSESSMENT OF ENGINEERING AND GEOLOGICAL RESEARCH IN THE TERRITORIES OF CITIES IN CRAMPED CONDITIONS

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ОЦЕНКА ИНЖЕНЕРНО-ГЕОЛОГИЧЕСКИХ ИССЛЕДОВАНИЙ НА ТЕРРИТОРИЯХ ГОРОДОВ В СТЕСНЕННЫХ УСЛОВИЯХ

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Abstract

In cases of engineering and geological justification of the project of construction of buildings and structures in cramped conditions of urban development is the most relevant problem. Due to the intensive development of built-up areas, reconstruction, re-planning of buildings and structures and the use of underground space in urban areas. In large cities of the republic, the pace and volume of construction work has sharply increased, their implementation in areas of dense development, as a rule, in complex and dynamically changing engineering and geological conditions, has caused numerous cases of complications in construction, including deformations and accidents on reconstructed objects and falling into the zone of influence of construction works. In this connection, the authors evaluate the specifics of engineering and geological research in conditions of dense urban construction.

Аннотация

В случаях инженерно-геологического обоснования проекта строительства зданий и сооружений в стесненных условиях городской застройки является наиболее актуальной проблемой. В связи с интенсивным освоением застроенных территорий, реконструкции, перепланировка зданий и сооружений и использованию подземного пространства городских территорий. В крупных городах республики, резко возросли темпы и объемы

строительных работ, их проведение в районах плотной застройки, как правило, в сложных и динамично изменяющихся инженерно-геологических условиях, вызвало многочисленные случаи осложнений в строительстве, в том числе деформации и аварии на реконструируемых объектах и попадающих в зону влияния строительных работ. В связи с чем, авторами оценивается специфика инженерно-геологических исследований в условиях плотной городской застройки.

Keywords: *engineering and geological studies, conditions of dense urban development, cramped conditions of development, building construction project, irrigation ditches.*

Ключевые слова: инженерно-геологические исследования, условия плотной городской застройки, стесненные условия застройки, проект строительства зданий, каналы арыки.

В последнее годы в практике градостроительства участились случаи инженерно-геологическое обоснование проекта строительства зданий и сооружений в стесненных условиях городской застройки, а также интенсивному освоению и использованию подземного пространства городских территорий. В Ташкенте, как и в других крупных городах республики, резко возросли темпы и объемы строительных работ, их проведение в районах плотной застройки, как правило, в сложных и динамично изменяющихся инженерно-геологических условиях, вызвало многочисленные случаи осложнений в строительстве, в том числе деформации и аварии на реконструируемых объектах и попадающих в зону влияния строительных работ.

Анализ сложившейся ситуации, показал, что в подавляющем большинстве случаев указанные осложнения в строительстве вызваны недостаточным вниманием учета информации об инженерно-геологической обосновании проекта строительства сооружений и производстве работ нулевого цикла в стесненных условиях существующей городской застройки.

Несмотря на развитие нормативной базы, в действующих КМК, ШНК СП, ГОСТов и других нормативных документах отсутствуют научно-обоснованные подходы к установлению необходимой детальности и информативности инженерно-геологических исследований на городских территориях, особенно в зонах исторической и плотной застройки. Недостаточно учитываются особенности ПТС «геологическая среда–город», градостроительное зонирование, региональные инженерно-геологические условия и их техногенные изменения.

Поэтому поиск путей и способов повышения уровня инженерно-геологических исследований для изыскательской информации в условиях плотной городской застройки является весьма актуальной задачей.

Изменение представлений об инженерно-геологических исследованиях для обоснования проекта строительства зданий и сооружений на городских территориях проследим на примере развития изыскательских работ в Ташкенте.

Схематический план ново городской территории г.Ташкента на 1910-12 годы можно рассматривать как освоение восточной части территории города новостройками (рис. 1.). При этом, из-за четкого планирования улиц можно предполагать, что для этих целей велись инженерные изыскания. Но по некоторым нам, неизвестным причинам эти результаты не дошли до наших дней.

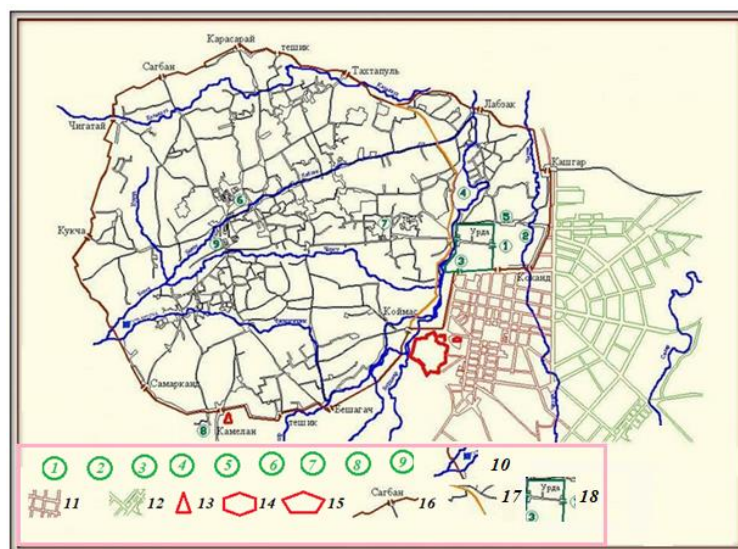


Рис. 1. Схематический план города Ташкента на 1865 год с определенными ориентирами связанные с местными названиями или рельефом местности: 1-сарбазный двор (место открытого размещения войск со стойлами для лошадей, пунктами питания, легкими навесами и т.д.); 2 -ханская ставка; 3 -дворец какандского хана; 4 -Якка базар; 5 -Кашкар базар; 6 -Эски Джуву; 7 -Шайхонтоур; 8 -мусульманское кладбище с мавзолеем Аламбардора; 9 -медресе Кукельдаш; 10 -оросительные каналы и арыки; 11 -улицы и кварталы русского Ташкента; 12 -улицы и кварталы русского Ташкента последующей постройки; 13 -часовня с захоронением русских солдат; 14 -русская крепость; 15 дом Черняева; 16 -городская стена; 17 -участок городской стены снесенный 1808 г.; 18 -стена цитадели.

За редким исключением до конца XIX века ни одна из сотен улиц и улочек старого Ташкента не имела государственных построек, кроме мечетей медресе и основной глинобитных стен. Официальных почтовых служб и городских карт как таковых не существовало. Но с глубокой древности существовала и существует сейчас другая группа городских ориентиров – небольшие местности, получившие среди городского населения названия или от особенностей локального рельефа или от того, что на этих местностях имеется какое-либо историческое сооружение или объект.

В названиях этих местностей присутствуют приставки тепа, означавшие бугор или возвышенность -Актепа, местности с растущими на них соответственно яблонями, урючинами и кустами миндаля -Алмазар, Урикзар и Бадамзар, джар (овраг) и некоторые другие.

В городе Ташкенте массовые изыскания начали проводиться после землетрясения 1966 года XIX века в связи со строительством зданий, сооружений, прокладкой канализации, автомобильных и железных дорог [1]. Длительный период времени инженерно-геологические исследования на городских территориях не отличались какими-либо особенностями.

До начала 30-х годов в Советском Союзе практически отсутствовала методологическая и техническая база инженерно-геологических исследований. Изыскательские работы для строительства проводились преимущественно с привлечением иностранных специалистов. При производстве инженерно-геологических исследований использовались только ручные способы буровых и горнопроходческих работ [1, 2].

Вопросы, относящиеся к специфике проведения инженерно-геологических исследований на городских территориях, впервые возникли в начале 30-х годов в связи с развитием градостроительства.

Как свидетельствуют многочисленные дореволюционные источники по истории завоевания Средней Азии, специальные очерки и книги, строительство нового города в Ташкенте началось в 1865 г. с разрушения оборонительных и военных построек на левом берегу Анхора. Были снесены полуразрушенные вовремя военных действий крепостные стены старой кокандской цитадели - Урды, и стены, окружавшие примыкавшие к Урде земли с постройками приверженцев кокандского режима (рис.1). Новые постройки, возводившиеся летом и осенью 1865 г., носили чисто военный характер. Расположилась она на возвышенности против бывших ворот Коймас.

Анализ фондовых материалов до революции показал, что инженерно-геологические исследования в Средней Азии в период 1917-1945 гг. характеризуется слабым развитием инженерно-геологических исследований. Они в свою очередь отставали от геологических и гидрогеологических, исследований и выполнялись на отдельных разрозненных участках преимущественно проектно-изыскательскими организациями.

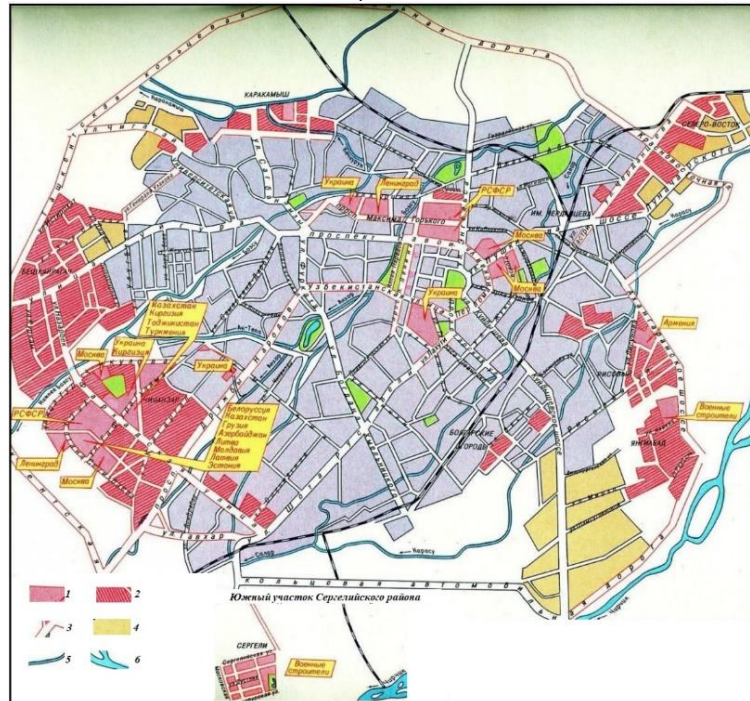


Рис. 2. Схематический план территорий проведенные массовые планировочные и инженерно-геологические исследования в г. Ташкенте: 1 -районы, застроенные Москвой, Ленинградом, союзными республиками и военными строителями; 2 - районы, застроенные Главташкентстроем и др. организациями г.Ташкента и Узбекской ССР; 3 -улицы, проложившие заново или расширенные; 4 -территории включенные в черту города; 5 -каналы и арыки; 6 – р.Чирчик

В конце 30-х - начале 40-х годов под руководством Г. И. Архангельского завершены инженерно-геологические исследования для обоснования проектов строительства крупных оросительных каналов: Большого Ферганского, Южно-Ферганского, Северо-Ферганского, Северо-Ташкентского, Каракумского.

Г. И. Архангельский, в 1925-1930 гг. проводились инженерно-геологические исследования для изучения причины заболачивания старой части Ташкента, отмечает, что «осенью 1925 года в Кукчинской, Сибзарской и Шейхантаурской частях города в некоторых пунктах подземные воды подтопили и заболотили значительные участки, вызвали осадки и разрушения жилых и торговых, помещений». Причиной этого, как выяснилось проведенными исследованиями, было увеличение фильтрации воды из каналов вследствие их реконструкции и повышения расходов. Последующее подтопление было связано с подпором воды плотиной Шейхантаурской ГЭС, сооруженной в 1948 г., и возведением ряда других плотин на каналах Каракамыш, Анхор, Кукча и др. Несмотря на принятые меры после проведения инженерно-геологических исследований связанные с уменьшением фильтрации из каналов на некоторых участках г.Ташкента наблюдаются подтопление территорий. К этим годам относится начало деятельности организации «Ташгорпроект», который упорядочил застройку индивидуального строительства, разработал для них типовые проекты жилых домов, создаёт проекты новых улиц и расширения существующих, обеспечив транспортные связи растущего города. По проекту «Ташгорпроекта», в 1938-1939 годах проектируется Полиграфическая улица (сегодня), соединившая Рабочий городок на Тахтапуле с улицей Навои, ул. Фурката, от Бешагача до Хадры; значительно расширяется улица (ныне Ш. Руставели), от Сапёрной до Текстильного комбината. Это градостроительное мероприятие имело большое значение для развития города. В 1939 году под руководством архитекторов А. Кузнецова, М. Клейменова в «Ташгорпроекте» создаётся проект генплана реконструкции города на 20-25 лет с расчётной численностью населения 900

тыс. человек, на территории 13,5 тыс. гектаров. Великая отечественная война изменила направленность исследований института. Но, несмотря на трудное военное время, в Ташкенте продолжалось проектирование и строительство, правда в ограниченных масштабах и, в основном, жилых домов.

В послевоенный период происходит постепенное усиление инженерно-геологической службы. В первые годы после Великой Отечественной войны инженерно-геологические исследования выполнялись под строительство небольших объектов. Только в 50-х годах началось планомерное изучение инженерно-геологических условий городских территорий Средней Азии. Работы выполнялись преимущественно разнотомными проектными и научно-исследовательскими институтами таких как Узгоспроект и ГПУ-4, Главташкентстрой, ТашГИИТИ, УзГИИТИ, Институт «ГИДРОИНГНО», Институт сейсмологии АН РУз, ТашНИИПИГенплан и мн.др.

Ташкент расположен на водораздельной лессовой пролювиальной равнине междуречья Чирчика и Келеса (примерно 75% территории), а южная его часть - на террасах и пойме р. Чирчик. В геологическом строении территории, определяющем ее инженерно-геологические условия, участвуют лессовые породы средне четвертичного возраста мощностью 50 м, верхнечетвертичные и современные отложения вложены в средне четвертичные [4,5,6]. В их основании залегают песчано-галечниковые отложения мощностью 20-30 м. Верхняя часть разреза четвертичных отложений представлена лессами или супесчано-суглинистым покровом. Долинно-балочная сеть пролювиальной равнины впадает в реки Чирчик и Келес. Общий перепад высот в пределах города и его ближайших окрестностей не превышает 140 м. Грунтовые воды залегают на глубинах 1-2 м в долине Чирчика и 15-25 м на водоразделах пролювиальной равнины. Застройка города осуществляется в основном 4-5-этажными зданиями, 7-9-этажные и 2-этажные составляют соответственно 10 и 5-7% от занятой строениями территории. В планировке города намечаются две композиционные оси. Первая, представленная системой вечнозеленых полос вдоль каналов Бозсу и Бурджар, пересекает город с северо-востока на юго-запад. Вторая в виде общегородского центра соединяет западную часть города (старый город) с восточной («новый город»). Вся территория города делится на несколько планировочных районов, связанных системой главных транспортных артерий с общегородским центром, промышленными зонами и местами загородного отдыха. Крупной градостроительной задачей является максимальное обогащение ландшафта города зелеными насаждениями вдоль русел каналов, организация зеленых массивов в центре, озеленение и обводнение крупных оврагов. Решаются вопросы инженерного оборудования городской территории - водоснабжения, канализации, теплоснабжения, газоснабжения, электроснабжения и телефонной связи. Внедряются в практику строительства города прокладка инженерных коммуникаций в общих коллекторах проходного сечения. Осуществляются мероприятия по инженерной подготовке территории для развития орошения, строится дренаж на подтопляемых участках, создается система ливневой канализации, принимаются меры по борьбе с оползневой опасностью.

Таким образом, инженерно-геологические исследования выполняются в целях получения материалов о природных условиях территории, на которой будут осуществляться строительство или реконструкция объектов, и о факторах техногенного воздействия на окружающую среду, прогнозе их изменения, необходимых для разработки решений относительно территории строительства. В истории изысканий можно выделить несколько этапов с характерными особенностями:

Период с 1944 по 1960 гг. характеризуется становлением или организацией предприятий, наращиванием производственной базы и началом работ по концентрации, систематизации и сохранению материалов инженерно-геологических исследований прошлых лет. В послевоенные годы возросли объемы строительства, соответственно увеличились объемы инженерно-геологических исследований. В этот период инженерно-геологические исследования велись преимущественно до глубин 15-20 м [1,2]. Начала развиваться техническая база изысканий. К 1957 (по данным ПНИИИС) уровень использования технических средств, т.е. буровых работ при инженерно-геологических исследованиях составлял 10-15 %. В период с 1961 по 1985 гг. отмечается рост инженерно-геологических работ. С возрастанием высотности возводимых зданий глубина инженерно-геологических исследований увеличивается до 20-50 м [1,2]. К 1966 году уровень механизации буровых работ при инженерно-геологических исследованиях составляли уже 60-70%. С начала 60-х годов проводилась работа по созданию региональных таблиц показателей физико-механических свойств грунтов на территории города Ташкента и в целом

по Республики Узбекистан [2,3,4]. Период с 1986 по 1991 гг., в целом, характеризуется стабилизацией и даже некоторым снижением объемов инженерно-геологических исследований, связанным с использованием накопленных за прошедшее время десятков тысяч заключений по результатам инженерно-геологических исследований в городе Москве.

Необходимо отметить, что применяемая в этот период техника и технология ведения инженерных изысканий, в том числе под реконструкцию зданий и сооружений, мало отличается от той, которая принята на свободной от застройки территории. На застроенных участках меньше применяются зондировочные, геофизические и штамповые исследования [4]. До конца 80-х годов примерно 90% всех изыскательских работ в г. Ташкенте выполнял ТашГИИТИ. С изменением экономических отношений резко увеличилось число организаций различных форм собственности, проводящие инженерно-геологические исследования в городе.

Таким образом, анализ литературных материалов и личных исследований показывает, что в настоящее время, несмотря на ценность многих методических разработок и нормативных документов: -не в полной мере изучена и оценена специфика инженерно-геологических исследований в условиях плотной городской застройки; -существующие подходы к постановке и проведению инженерно-геологических исследований не учитывают комплексно специфику инженерно-геологических условий городских территорий и особенности их застройки; -отсутствуют обобщения публикаций, посвященных вопросам проведения инженерно-геологических исследований на городских территориях, в том числе в стесненных условиях городской застройки; -вопросы обследования оснований зданий недостаточно согласованы с вопросами обследования технического состояния их строительных конструкций.

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Jurisprudence

THE CONSTITUTIONAL COURT IN THE REPUBLIC OF KOSOVO: TYPES OF DECISIONS, THEIR LEGAL EFFECT AND JUDGES' OPINIONS

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Abstract

The Constitutional Court of the Republic of Kosovo represents the European model of constitutional justice and as such is considered a special constitutional body that is not part of any state power. The protection of constitutionality and legality, the protection of human rights and freedoms, as well as the final interpretation of the constitution is exclusively targeted to it.

The Constitutional Court announces the end of a constitutional trial with a decision which is considered a legal act that, depending on the procedural phase when it is taken, the problem it solves or the legal effects it brings, is known by different names.

The Constitution of the Republic of Kosovo only uses the term decision, while the Rules of Procedure of the Constitutional Court further specify the types of decisions that this body can make.

Decisions of the Constitutional Court are made "by majority vote of the judges", where the judges are also recognized the right to express their dissenting and concurring opinions. If the votes of the judges present at the consultation are divided proportionally and the voting result is equal, then the request is considered inadmissible.

The decisions of the Constitutional Court of the Republic of Kosovo are mandatory for the judiciary, all persons as well as the institutions of the Republic of Kosovo, here we note their erga omnes and inter partes effect.

The decisions of the Constitutional Court of the Republic of Kosovo are announced in the Official Gazette and in principle enter into force on the day of publication, so the publication is an important moment as legal consequences start from there.

Keywords: *Constitutional court, decisions, dissenting opinions, concurring opinions.*

Research questions

RQ 1: Do the decisions of the Constitutional Court of the Republic of Kosovo have common elements with the decisions of the courts belonging to the judicial power?

RQ2: Is it possible for the Constitutional Court of the Republic of Kosovo to expand the constitutional trial by deciding on other issues that the party did not request in the constitutional request submitted?

RQ3: Is the Constitutional Court of the Republic of Kosovo qualified as a negative or positive legislator?

RQ4: Have the judges of the Constitutional Court in the Republic of Kosovo exercised their right to submit dissenting and competing opinions based on constitutional jurisprudence?

RQ5: How does the announcement of the constitutional claim inadmissible affect the citizens as a result of the fact that the result of the decision during the voting by the present judges is equal?

Research hypotheses

H1: The decisions of the Constitutional Court and the regular courts in terms of form have common elements but differ deeply in content, since the decisions of the Constitutional Court have some characteristics that correspond to the objectives and purpose of constitutional justice.

*H2: When making a decision, the Constitutional Court must respect the principle *ne eat judex ultra petita partium* defined as "the principle of compatibility between what is requested and what is announced".*

H3: Based on its constitutional jurisdiction, this body only ascertains the compatibility or not of the legal norm with the Constitution, this is also proven by constitutional jurisprudence, as a result it is a negative legislator.

H4: From the analysis of the constitutional practice in Kosovo since its establishment in 2009 until 2019, dissenting opinions have dominated in relation to concurring ones.

H5: This has a negative impact on the citizens' perception of the work of the Constitutional Court of the Republic of Kosovo, precisely on the constitutional protection of rights and freedoms since the request which is declared inadmissible as a result of the equal voting of the judges may contain constitutional violations, and the citizens this body is the last instance where they can seek constitutional protection.

Methodology

There are different methods that can be applied to verify the hypotheses and answer the research questions related to the topic that we have treated. Some used methods in this topic are: quantitative and qualitative data analysis, comparative analysis and document analysis.

The main findings

The main findings of this study are listed as below:

The Constitution of the Republic of Kosovo only uses the term decision, while the Rules of Procedure of the Constitutional Court further specify that this body can adopt judgments, resolutions, decisions when deciding on requests for temporary measures, administrative rulings and orders.

In announcing the decision, the Constitutional Court must adhere to what was requested by the parties and not expand the "thema decidendum" beyond the limits of the constitutional requirement.

The Constitutional Court of the Republic of Kosovo by judgment decides on the basis of the merits of a request, while by resolution it decides on the inadmissibility of the request.

The judges of the Constitutional Court have the right to a dissenting opinion, in cases that end only with a judgment, where they must argue in written form why they do not agree with the opinion of the majority of judges.

In addition to the dissenting opinion, the judge can also give a concurring opinion, when he agrees with the judgment of the Constitutional Court, but not with the reasoning given there, he must justify this through his concurring opinion.

In cases that end with a resolution on inadmissibility or a decision is made, it is only emphasized that the judge did not agree with the majority of judges and does not have the right to prepare a dissenting or even concurring opinion.

In terms of legal effect, the decisions of the Constitutional Court in the case of abstract control have an erga omnes effect, while in the case of concrete control they have an inter partes effect.

Conclusion

The Constitutional Court of the Republic of Kosovo materializes its constitutional powers through the decisions it issues, which can be in the form of a judgment, resolution, decision and order.

The Constitutional Court is a negative legislator, it cannot replace the legislative body, its constitutional control is focused only on the evaluation of the constitutionality of the law.

The procedural aspect of decision-making is regulated by the Law on the Constitutional Court and the Rules of Procedure of the Constitutional Court.

Decisions of the Constitutional Court are approved in session with the vote of the judges, respecting the principle of collegiality.

The decisions of the Constitutional Court based on its jurisprudence over the years have also been characterized by dissenting and concurring opinions that the judges have given, international judges such as Almiro Rodrigues and Robert Carolan were distinguished, followed by local judges.

The decisions of the Constitutional Court are final and enforceable at the moment of publication, which means that there is no right of appeal against these decisions and, as a result, they are executed immediately after publication in the Official Gazette. This is because the state of Kosovo is not yet a member of the Council of Europe and therefore it is not possible for the decisions of the Constitutional Court of the Republic of Kosovo to be appealed to the European Court of Human Rights.

Through its jurisprudence, the Constitutional Court has managed to successfully convince the judiciary, people and institutions that they have a constitutional obligation to implement its decisions even though they may not agree with them. In this regard, all the generations of judges of the Constitutional Court who have professionally contributed not only in terms of the advancement of the Constitutional Court, but also the raising of awareness in general in the country about respect for the constitution and the decisions of the Constitutional Court, deserve credit.

We recommend that the state of Kosovo should commit to membership in the Council of Europe as soon as possible, as this would affect the creation of the opportunity for Kosovo to be represented in

the European Court of Human Rights and at the same time offer international legal protection for violated rights and freedoms.

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Mathematical sciences

ON ONE PROBLEM FOR THE INHOMOGENEOUS GENERALIZED EULER-POISSON-DARBOUX EQUATION

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ОБ ОДНОЙ ЗАДАЧЕ ДЛЯ НЕОДНОРОДНОГО ОБОБЩЕННОГО УРАВНЕНИЯ ЭЙЛЕРА-ПУАССОНА-ДАРБУ.

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Многие дифференциальные уравнения гиперболического типа с двумя линиями вырождения сводятся к уравнению вида

$$L(u) \equiv u_{\xi\eta} + \left(\frac{\alpha}{\eta + \xi} + \frac{\beta}{\eta - \xi} \right) u_{\xi} + \left(\frac{\alpha}{\eta + \xi} - \frac{\beta}{\eta - \xi} \right) u_{\eta} + \gamma u = f(\xi, \eta), (1)$$

здесь, α, β, γ – заданные действительные числа, а $f(\xi, \eta)$ – заданная функция.

В работе [1] сформулирован и доказан принцип экстремума для однородного уравнения (1) и его частных случаев, при $f(\xi, \eta) = 0$ и $0 < \alpha \leq \beta < 1/2$. В работе [2] рассмотрена задача Дарбу для уравнения (1). В работах [3]–[5] для уравнения (1) при $f(\xi, \eta) = 0$ и $0 < \alpha \leq \beta < 1/2$ изучена задача Гурса, Дарбу и Коши-Гурса. Однако, задача Коши-Гурса для неоднородного уравнения (1) к настоящему моменту и исследованию.

Рассмотрим уравнение (1) в характеристическом треугольнике Δ плоскости $\xi O \eta$, ограниченной отрезками $\overline{OA} = \{(\xi, \eta) : \eta = \xi, 0 \leq \xi \leq 1\}$, $\overline{CA} = \{(\xi, 1) : 0 \leq \xi \leq 1\}$, $\overline{OC} = \{(0, \eta) : 0 \leq \eta \leq 1\}$, где $0 < \alpha \leq \beta < 1/2$.

Задача Коши-Гурса. Найти регулярное в области Δ решение $u(\xi, \eta) \in C(\bar{\Delta})$ уравнения (1), удовлетворяющее краевым условиям

$$\lim_{\eta - \xi \rightarrow +0} (\eta - \xi)^{2\beta} (u_{\xi} - u_{\eta}) = \nu(\xi), 0 < \xi < 1; u(\xi, 1) = \psi_2(\xi), 0 \leq \xi \leq 1,$$

где $\nu(\xi)$ и $\psi_2(\xi)$ – заданные непрерывные функции.

Эта задача при $f(\xi, \eta) \equiv 0$ и неоднородных условиях (2), (3) изучена в работе [8].

При этом существенно используется, так называемая, функция Римана-Адамара $V(\xi, \eta; \xi_0, \eta_0; \gamma)$ [8], которая удовлетворяет следующим условиям:

1⁰. $V(\xi, \eta; \xi_0, \eta_0; \gamma)$ по переменным ξ_0, η_0 является решением уравнения (1), а по переменным ξ, η – удовлетворяет сопряженному ему уравнению:

$$2^0. V_{\eta} - [\alpha(\eta + \xi)^{-1} + \beta(\eta - \xi)^{-1}] V = 0 \text{ при } \xi = \xi_0,$$

$$V_{\xi} - [\alpha(\eta + \xi)^{-1} - \beta(\eta - \xi)^{-1}] V = 0 \text{ при } \eta = \eta_0;$$

$$3^0. V(\xi_0, \eta_0; \xi_0, \eta_0; \gamma) = 1; \quad 4^0. \lim_{\eta - \xi \rightarrow +0} V(\xi, \eta; \xi_0, \eta_0; \gamma) = 0;$$

$$5^0. \lim_{\eta - \xi \rightarrow +0} [V_{\eta} - V_{\xi} - 4\beta(\xi - \eta)^{-1} V] = 0;$$

$$6^0. \lim_{\xi \rightarrow 0} \left\{ V_{\xi} - [\alpha(\eta + \xi)^{-1} - \beta(\eta - \xi)^{-1}] V \right\} \Big|_{\eta = \xi_0 + \varepsilon} -$$

$$-\{V_{\xi} - [\alpha(\eta + \xi)^{-1} - \beta(\eta - \xi)^{-1}]V\}\Big|_{\eta=\xi_0-\varepsilon} = 0, \varepsilon > 0.$$

Пользуясь функциями Римана и Римана-Адамара, построенная М.Капилевичем в работе [1, стр. 1480-1481] для уравнения (1), нетрудно убедиться, что функция $V(\xi, \eta; \xi_0, \eta_0; \gamma)$, обладающая перечисленными выше свойствами $1^0 - 6^0$, существует и определяется следующим равенством:

$$V(\xi, \eta; \xi_0, \eta_0; \gamma) = \begin{cases} R_1(\xi, \eta; \xi_0, \eta_0; \gamma) & \text{при } \eta > \xi_0; \\ R_2(\xi, \eta; \xi_0, \eta_0; \gamma) & \text{при } \eta < \xi_0, \end{cases} \quad (4)$$

где

$$R_1(\xi, \eta; \xi_0, \eta_0; \gamma) = \sigma_0 \sum_{k=0}^{+\infty} \frac{\sigma_3^k}{(k!)^2} F_3(\beta, \alpha, 1-\beta, 1-\alpha; 1+k; \sigma_2, \sigma_1),$$

$$R_2(\xi, \eta; \xi_0, \eta_0; \gamma) = \chi_2 \left(\frac{\eta + \xi}{\eta_0 + \xi_0} \right)^{\alpha} \frac{(\eta - \xi)^{2\beta}}{[(\xi_0 - \xi)(\eta_0 - \eta)]^{\beta}} \times \\ \times \sum_{k=0}^{+\infty} \frac{\sigma_3^k}{k!(1-\beta)_k} H_2\left(\beta - k, \beta, \alpha, 1-\alpha; 2\beta; \frac{1}{\sigma_2}, -\sigma_1\right),$$

$\chi_2 = \Gamma(\beta) / \Gamma(1-\beta)\Gamma(2\beta)$, $\Gamma(z)$ – гамма-функция Эйлера, $F_3(a, a', b, b'; c; x, y)$ – функция Аппеля и $H_2(a, b, c, d; x, y)$ – функция Горна [9]. $(z)_n = z(z+1)\dots(z+n-1)$ – символ Похгаммера, $\sigma_0 = [(\eta + \xi) / (\eta_0 + \xi_0)]^{\alpha} [(\eta - \xi) / (\eta_0 - \xi_0)]^{\beta}$, $\sigma_1 = -[(\xi - \xi_0)(\eta - \eta_0)] / [(\eta + \xi)(\eta_0 + \xi_0)]$, $\sigma_2 = [(\xi - \xi_0)(\eta - \eta_0)] / [(\eta - \xi)(\eta_0 - \xi_0)]$, $\sigma_3 = -\gamma(\xi - \xi_0)(\eta - \eta_0)$.

В силу разложения [9]

$$F_3(a, a', b, b'; c; x, y) = \sum_{m=0}^{+\infty} \frac{(a')_m (b')_m}{(c)_m m!} y^m F(a, b; c + m; x),$$

$$H_2(a, b, c, d; e; x, y) = \sum_{m=0}^{+\infty} \frac{(-1)^m (c)_m (d)_m}{(1-a)_m m!} y^m F(a - m, b; e; x),$$

где F – гипергеометрическая функция Гаусса, функции R_1 и R_2 можно переписать в виде

$$R_1(\xi, \eta; \xi_0, \eta_0; \gamma) = \sigma_0 \sum_{k=0}^{+\infty} \frac{\sigma_3^k}{(k!)^2} \sum_{n=0}^{+\infty} \frac{(\alpha)_n (1-\alpha)_n}{n!(1+k)_n} \sigma_1^n F(\beta, 1-\beta; 1+k+n; \sigma_2), \quad (5)$$

$$R_2(\xi, \eta; \xi_0, \eta_0; \gamma) = \chi_2 \left(\frac{\eta + \xi}{\eta_0 + \xi_0} \right)^{\alpha} \frac{(\eta - \xi)^{2\beta}}{[(\xi_0 - \xi)(\eta_0 - \eta)]^{\beta}} \times \\ \times \sum_{k=0}^{+\infty} \frac{\sigma_3^k}{k!(1-\beta)_k} \sum_{n=0}^{+\infty} \frac{(-1)^n (\alpha)_n (1-\alpha)_n}{n!(1-\beta+k)_n} \sigma_1^n F\left(\beta - k - n; \beta; 2\beta; \frac{1}{\sigma_2}\right). \quad (6)$$

Пользуясь разложениями (5) и (6) функций R_1 и R_2 соответственно, можно убедиться, что функция (4) действительно удовлетворяет условиям $1^0 - 6^0$.

Пусть $u(\xi, \eta)$ – решение задачи Коши-Гурса для уравнения (1), а $P(\xi_0, \eta_0)$ – произвольная точка области $\bar{\Delta} \setminus (\eta = \xi)$. Найдем $u(\xi_0, \eta_0)$.

Интегрируя тождество

$$2[VL_{\alpha, \beta}(u) - uM_{\alpha, \beta}(V)] + f(\xi, \eta)V \equiv \\ \equiv \frac{\partial}{\partial \eta} \left[Vu_{\xi} - uV_{\xi} + \left(\frac{2\alpha}{\eta + \xi} - \frac{2\beta}{\eta - \xi} \right) uV \right] +$$

$$+\frac{\partial}{\partial \xi}\left[Vu_{\eta}-uV_{\eta}+\left(\frac{2\alpha}{\eta+\xi}+\frac{2\beta}{\eta-\xi}\right)uV\right]+f(\xi,\eta)V\equiv 0.$$

по треугольнике $O'A'D'$, ограниченная отрезками $O'A'$, $A'D'$, $O'D'$ прямых $\eta = \xi + \varepsilon$, $\eta = \xi_0 - \varepsilon$, $\xi = 0$ соответственно, и по прямоугольнику $D''A''C''C'$, ограниченная отрезками $D''A''$, $C''C'$, $D''C'$, $A''C''$ прямых $\eta = \xi_0 + \varepsilon$, $\eta = \eta_0$, $\xi = 0$, $\xi = \xi_0 - 2\varepsilon$ соответственно, а затем применяя формулу Грина, имеем

$$\begin{aligned} &\left(\int_{\partial O'A'D'} + \int_{\partial D''A''C''C'}\right)\left[Vu_{\eta}-uV_{\eta}+\left(\frac{2\alpha}{\eta+\xi}+\frac{2\beta}{\eta-\xi}\right)uV\right]d\eta - \\ &- \left[Vu_{\xi}-uV_{\xi}+\left(\frac{2\alpha}{\eta+\xi}-\frac{2\beta}{\eta-\xi}\right)uV\right]d\xi + \\ &+ \iint_{\partial \Delta} f(\xi,\eta)V(\xi,\eta;\xi_0,\eta_0;\gamma)d\xi d\eta = 0. \end{aligned}$$

Отсюда, и учитывая свойства $1^0 - 6^0$ функции $V(\xi,\eta;\xi_0,\eta_0;\gamma)$ и краевые условия (2), (3), вычислим интегралы по сторонам треугольника и прямоугольника. Затем, переходя к пределу $\varepsilon \rightarrow 0$, получим представление решения задачи Коши-Гурса $\{(1), (2), (3)\}$:

$$u(\xi_0,\eta_0) = \int_0^{\xi_0} d\xi \int_{\xi}^{\eta_0} f(\xi,\eta)V(\xi,\eta;\xi_0,\eta_0;\gamma)d\eta. \quad (7)$$

Исследуем формулу (7).

Теорема. Пусть выполнено условие:

$$f(\xi,\eta) = (\eta - \xi)^{-\delta} f_1(\xi,\eta), \quad \delta = \text{const} \in [0,1), \quad f_1(\xi,\eta) \in C(\bar{\Delta}). \quad (8)$$

Тогда функция $u(\xi_0,\eta_0)$, определяемая формулой (7), удовлетворяет уравнению (1), и краевым условиям (2), (3).

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Medical sciences

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ACUTE CALCULOUS CHOLECYSTITIS IN OVERWEIGHT PATIENTS AND IMPROVEMENT OF DIAGNOSIS AND TREATMENT

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Introduction: Overweight is a serious medical and social problem. On average, BMI greater than 40 kg / m² is observed in 2-4% of people. About 30% of the working population in the CIS countries and 35% of adults in the US are obese. Some common etiological factors of calculous cholecystitis and obesity contribute to an increase in the incidence of overweight in patients with gallstones, as well as a history of cholecystectomy in 6.7% of patients with overweight and in 11.6% with obesity.

Methods: For all patients, men and women diagnosed with acute calculous cholecystitis admitted to the Semey State Medical University Medical Hospital, Municipal Hospital "Gore Hospital No. 1 in Pavlodar", Emergency Hospital in Semey and Municipal Hospital Aksu, Pavlodar Region, determine the mass index body (BMI). Inclusion Criteria: All patients with acute calculous cholecystitis are men and women 18 years and older with a BMI of 25 and above. Exclusion Criteria: Children and teenagers under 18 years old, patients do not agree for the study and pregnant.

Diagnosis was carried out by us developed by the method of ultrasound diagnosis of acute calculous cholecystitis. In patients with BMI, surgical treatment was applied with the use of the device we developed for patients with BMI. In patients with cholecysto-duodenal fistula (ChDF), the method of uncoupling cholecysto-duodenal fistula developed in our clinic was used. All the patients were divided into groups: Liga-7 n=103; universal retractor Aymagambetov (URA) n=23; Liga-7 +new cholecysto-duodenal fistula dissections (ChDFD) n=5; URA+new ChDFD n=7.

Results: We carried out a prospective analysis of n = 244 cases in patients with ACC who were treated at the Semey Medical University Clinic of General Surgery from January to March 2018. There were 63 (25,8%) men and women - 181 (74,2%). All ACC patients were at the age of 18-79 years old, according to the WHO classification are distributed as follows. Most patients were in the group from 45 to 59 years old - 104 (42,6%) patients. When measuring BMI turned that 188 patients (77%) exceeding the BMI rate, in 56 - (23%) patients, BMI was normal or did not exceed the norm. Of them 86 (45.7%) - pre-obesity, 73 (38.8%) - obesity I st, 20 (10.6%) - obesity II article, and in 9 (4.8%) cases obesity was detected in III degree.

Discussion: Conversion in the group of patients with the use of the apparatus "League-7" was - 9 patients, Liga-7 +new ChDFD – 1 patient. Intraoperative bleeding: the use of the apparatus "League-7" was – 2 patients, Liga-7 +new ChDFD – 2 patients. Postoperative complications (abscesses, seromas) use of the apparatus "League-7" was - 6 patients, URA -2 patient, Liga-7 +new ChDFD – 1 patient, URA +new ChDFD – 1 patient. Bile excretion use of the apparatus "League-7" was – 1 patient. Lethal outcome ended in one patient who had a myocardial infarction.

Conclusion: Thus, the "Method of uncoupling (dissection) cholecysto-duodenal fistula" and the use of the universal Aymagambetov retractor developed in the clinic for patients with overweight and obesity with acute calculous cholecystitis complicated by destruction and infiltration allows performing and completing the operation with minimally invasive access.

Pedagogical sciences

THE IMPORTANCE OF THE LIFT RAMP IN EDUCATIONAL INSTITUTIONS TO SUPPORT PEOPLE WITH DISABILITIES ON THE EXAMPLE OF MNU. K.SH. TOKTOMAMATOV

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Abstract

This article discusses the need to install a lift ramp in educational institutions to support people with disabilities (PWD). Inclusive education and ensuring equal opportunities for all students are becoming more and more priority in modern society. The installation of an elevator ramp allows students with limited mobility to move freely around the building and access academic activities.

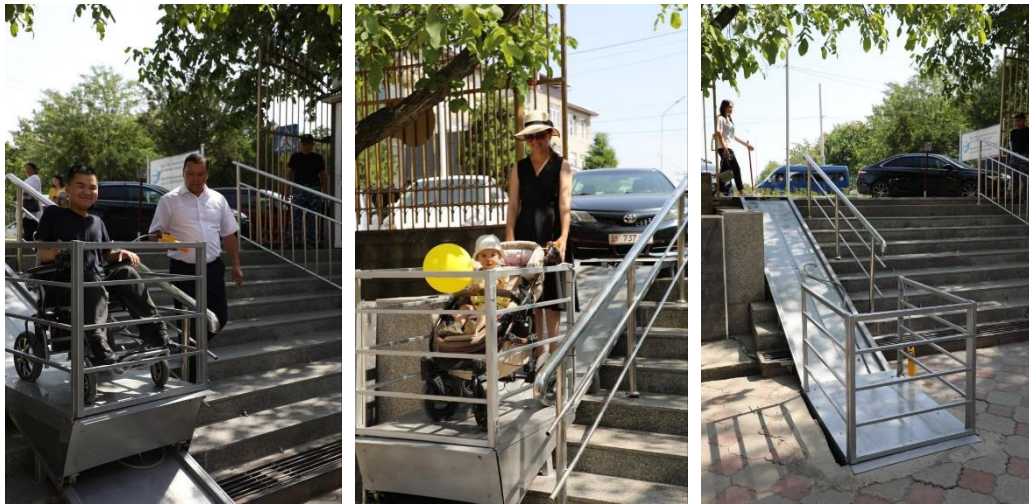
This promotes their independence, removes physical barriers, and promotes their social integration. The installation of the lift ramp also complies with legal requirements in many countries. In general, the lift ramp is an important means of creating an inclusive educational environment and ensuring equal opportunities for all students.

Keywords: *lift ramp, educational institutions, people with disabilities, inclusive education, equal opportunities, limited mobility, accessibility, independence, social integration, physical barriers, legislation*

Introduction

In 2018, the Kyrgyz Republic ratified the UN Convention on the Rights of Persons with Disabilities, adopted by the General Assembly of the United Nations on December 13, 2006 and signed on September 21, 2011. Cabinet of Ministers of the Kyrgyz Republic (previously by Government Decree) dated July 19, 2019. The PROGRAM "Development of inclusive education in the Kyrgyz Republic for 2019-2023" was approved. The purpose of the UN Convention on the Rights of Persons with Disabilities is to promote, protect and ensure the full and equal enjoyment by persons with disabilities of all human rights and fundamental freedoms, and to promote respect for their inherent dignity. The implementation of the Program puzzled everyone, as the above people need support and development. Inclusive education is becoming more and more a priority in modern society. People with disabilities (PWD) have the right to a full education and participation in the academic environment on an equal basis with other students. However, barriers still exist in many educational institutions that make access to education difficult for people with limited mobility. In this article, we will discuss the need to install a lift ramp in educational institutions to support people with disabilities. [5]

For example, we took the university MNU (International University) them. K.Sh. Toktomamatov, which is actively developing, and the number of students is growing from year to year. This university has gifted students, some of whom have physical limitations or health problems that make it difficult for them to move around the educational complex. Installing a lift will be an important step towards creating a more accessible and inclusive learning environment. In this regard, we decided to install a lift ramp at the entrance to the university. This support will help improve the learning environment and increase accessibility for all students. In general, a lift ramp is an element of the building infrastructure, which is an inclined platform for lifting from the ground level, sidewalk. (pic 1)



The purpose of this article is to draw attention to the need to install a lift ramp in educational institutions to support people with disabilities (PWD). The article aims to inform the public, educational institutions and decision makers about the importance of creating an accessible and inclusive educational environment for all students. She emphasizes that the installation of a lift ramp promotes equal opportunities for students with limited mobility, removes physical barriers and promotes their independence and social integration. The purpose of the article is also to support and promote the introduction of lift ramps in educational institutions and draw attention to the need to create a more accessible and inclusive environment for all students, including those with limited mobility[7].

- Ensuring equal opportunities:

One of the main principles of inclusive education is to provide equal opportunities for all students. The installation of an elevator ramp allows students with limited mobility to move freely around the building and access various classes, lectures and other academic activities. This allows them to fully participate in the educational process and not feel excluded[1].

- Increasing autonomy:

The lift ramp allows students with limited mobility to be more independent. They can move freely around the building without having to constantly ask for help from other people. This contributes to the development of their independence and self-confidence, which is important for their personal and social development[5] Fig.1

- Removal of physical barriers:

Many educational institutions have multiple floors and the lack of elevators or ramps creates physical barriers for students with limited mobility. Installing an elevator ramp solves this problem by providing access to the entire building[9].

-Social integration:

The installation of a lift ramp promotes the social inclusion of students with limited mobility. They can more easily interact with other students, teachers and staff of the educational institution, participate in social events and take an active part in the life of the educational community. This helps them not only get an education, but also develop their social skills and establish contacts with a variety of people[8].

-Compliance with the law:

Many countries have laws and regulations that require educational institutions to provide accessibility for all students, including those with disabilities. Installing a lift ramp is one way to comply with these legal requirements. Institutions that do not provide appropriate means of access may be subject to legal consequences and risk loss of funding or licenses.

fig.2 diagram of the lift fig3. lift

- physical properties of the lift ramp

The physical properties of the lift ramp vary by model and design. Here are a few general physical properties that are characteristic of a lift ramp:

1. Length: Ramp lifts come in various lengths depending on the configuration of the building or the space to be covered. They can be relatively short if you need to overcome a small height, or long to allow you to climb to a greater height[6].

2. *Width:* Lift ramps are designed wide enough to allow safe and comfortable movement for users in wheelchairs or other assistive devices. The width can vary, but is usually at least 90 centimeters to allow access for users with reduced mobility.

3. *Slope:* The lift ramp usually has a specific slope which determines the angle of the lift. The inclination can be different depending on the specific needs and limitations of users. It should be steep enough to allow safe movement up or down, but not too steep to allow users to comfortably use the ramp[6].

4. *Materials:* The lift ramp is made of iron. This ensures strength, reliability and durability of the structure. The materials must also be weather resistant and provide a non-slip surface for safe use.

5. *Security:* The lift ramp is equipped with various security systems such as guardrails, handrails and emergency brakes. This is to ensure the safety of users during use. The ramp lift includes its mass and load capacity. The mass of the lift ramp determines its stability. The load capacity indicates the maximum weight that the lift ramp can support[2].

6. *Lifting mechanism:* Lifting ramps can use various lifting mechanisms such as hydraulic, electric or mechanical. In this case, an electric type of lifting was installed at our university (Fig. 3). The lifting mechanism determines the way the lift ramp moves up and down, as well as its speed and smoothness of movement [8].

7. *Control and Automation:* Some lift ramps may be equipped with control and automation systems to allow users to easily control and operate the lift ramp. This may include buttons, remote controls, or security sensors. In our case, an automatic control mechanism is installed.

8. *Weather Resistant and Resistant:* Elevator ramps can be designed and built to withstand weather conditions such as rain, snow or wind. This may include anti-corrosion coating, moisture protection and other features that ensure durability and reliability regardless of weather conditions [3].

However, it should be noted that the specific physical properties of the lift ramp may vary depending on the manufacturer, model and individual requirements. When choosing a lift ramp, it is important to take into account specific needs and conditions of use, as well as comply with applicable safety codes and standards[4].

Conclusion

The installation of a lift ramp in educational institutions is essential to support students with disabilities and create an inclusive educational environment. This allows to ensure equal opportunities for all students, increase their independence and social integration, as well as comply with legal requirements. The lift ramp is an investment in the future that promotes a tolerant and inclusive society where every student has the opportunity to reach their full potential.

The physical properties of the lift ramp must be carefully selected and designed to meet the specific needs of users and comply with applicable safety codes and standards. Ensuring accessibility and inclusion in educational institutions is becoming increasingly important, and installing a lift ramp is one way to ensure equal opportunities for all students, including those with limited mobility. This creates an inclusive educational environment, promotes independence and social integration of students with disabilities.

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Physical education and sports

DEVELOPMENT OF SPORT-IN THE CONDITIONS OF HOSTILITIES

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Introduction

Nowadays a lot of scientists work on the issue of development and setting Ukrainian sport terminology and phraseology. It is obvious that this issue is very important. A lot of people go in for sports, are interested in it and use sport terms in everyday life. The implementation of Ukrainian system of sport terms for everyone to use it (for sportsmen, amateurs, fans) is of great importance. The English origin of terms complicates the establishment of Ukrainian sport lexicon. Such Ukrainian scientists as Balaban T., Vakylenko M., Kotukova O., Marks K., Shynevuch B. dedicate a lot of their efforts and time for this issue. Scientist try to find out the origin of the word and their equivalents in Ukrainian (they create these equivalents using transliteration, calque or descriptive methods). But the adequate translation hardship is not solved for today.

The aim of this work is to investigate sport terminology in English and ways of its adequate translation into Ukrainian. The sport terms translation deals with all the terminology translation hardships and equivalent search with account of lexical, grammatical, stylistic and communicative information.

The main objectives include the following:

- a) to analyse lexical peculiarities of Soccer terminology in English;
- b) to analyse their translation methods;
- c) to develop an on-line translation dictionary of sport terms based on Soccer sport art.

The research object of this diploma paper is English sport comments and their Ukrainian translation as well English on-line lexicographical databases.

The research subject of this diploma paper is European football sport terminology in modern English and translation of these terms into Ukrainian.

Methods of investigation:

Morphological analysis of English sport terms and their Ukrainian equivalents;

Contrastive analysis of English sport terms and their equivalents;

Theoretical value may lie in consistent analysis of English sport terms from the viewpoint of their external and semantic structure and ways of their faithful translation.

Practical value of the paper is based on the translation of sport terminology and creating sport terms on-line dictionary. On-line dictionary is supposed to facilitate the language acquisition for language learners, sportsman and amateurs and also be useful for translators and interpreters. Especially today, as the great championship Euro 2012 will take place in Ukraine. Many people from different countries will come here, so we should be ready to speak with them on the same level. But it is not only the problem of understanding. The main task is to translate these terms using Ukrainian means of verbalization and to implement them in general use in order to make our language more pure.

There is no need to speak about the importance of dictionaries for those who studies or investigates languages. The demand for on-line dictionaries is particularly high in time of IT progress. Nowadays there is no on-line sport dictionary available, especially English-Ukrainian one. That's why, I decided to create such software for everyone to use it for free and joy.

The on-line dictionary of sport terms will be represented in the practical part of the given diploma paper. It has been developed in PHP software environment. PHP was designed to be easy to learn and use. PHP is a scripting language originally designed for producing dynamic web pages. Released under the PHP License, the Free Software Foundation considers it to be free software. PHP is a widely-used general-purpose scripting language that is especially suited for web development and can be embedded into HTML. It generally runs on a web server, taking PHP code as its input and creating web pages as output. It can be deployed on most web servers and on almost every operating system and platform free of charge. PHP is installed on more than 20 million websites and 1 million web servers. The most recent major release of PHP was version 5.2.6 on May 1, 2008.

I. Linguistic background

"In sport you either know the language or you don't - you're either an insider or an outsider"

1. Sport Discourse

The sport discourse is very complicated phenomenon. A lot of studies deal with it: linguistics, psychology, philosophy, history, sociology, semiotics and many others. This issue is of great interest for the investigation because communication is very important for the society. Nikolayeva T.M., Karasik V.I., Kybrjakova E.S. discover this subject, but none of them can give the definition for this notion. We understand it as a text that is used in some special conditions for special purposes.

Sport comments are aimed at wide audience and should cater for the entertainment, leisure and relaxation. It also is of great importance for the mass media. When we hear sport comment – it usually is a monologue of the commentator who by means of language can express the movement, activity, shift of events and meanwhile analyse it.

Texts in sport discourse may be written for several purposes. They may inform people of an ongoing match, give a technical evaluation of the match, introduce a player or a team. Verbal comments are the part of publicistic style and its genre varieties. This genre does not have strict composition (unlike written texts) and here may be noted only the beginning and the end. The place of the game, participants, the weather, stadium, the time are usually mentioned at the beginning but as a game is an action and things may change, this information can be also mentioned in the middle and at the end of a comment. These data are usually mentioned in a speech flow when there nothing important is taking place during the game to fill the gap and not to be silent. Commentator usually reviews the game and make some conclusions at the end. The central part of the comment is denoted to everything connected with the play. Verbal comments are usually fulfilled with commentator's emotions that make it more interesting and critical.

The text producer intends to give information. While doing so, he usually gives facts, that is, past achievements of the teams, how they qualified for the finals, who is their coach at the moment, who are their well known players, what are their aims in the championship. He tells this very clearly, so unless a person is totally indifferent to this subject, we can say this is second order informativity. In this case, the person will understand what the text is about and the intention of the text producer will be achieved.

In fact, football reports rarely provide only news; many people who read the sports pages already know the result, and may even have seen the game live on television. This helps to explain some of the vivid language used in newspaper reporting, as its function is not just to give the score. Reports also have to give opinions and explanations, and engage the reader on an emotional level. And as we have seen elsewhere in this edition, some newspapers sell copies by being sensationalist. There is also an obsession with after-match quotes from players or managers; another 'angle' on the game has to be found. Of course these are not always as coherent and useable as journalists would like. Mihir Bose, a football journalist with 'The Times', talked about how he and fellow journalists would get together after the post-match conference to agree on the most acceptable and reportable version of the manager's stream of consciousness and non-sequiturs. In other cases it is those very memorable phrases from post-match interviews, ('the boy done good'; 'we wus robbed'; 'it was a game of two halves'; 'I'm over the moon'), which are part of an affectionate football folk-lore and language, gently parodied in places like the satirical magazine Private Eye. Even the articulate are prone to the linguistic faux pas: when the England player Tony Adams was asked before the England/Poland European Football Championship game in September 1999 what the atmosphere in the Legia Warsaw stadium would be like, he replied, 'Intense – I think the Polish crowd will be very compassionate'(Guardian, Thursday 9 September, 1999).

The reports in English newspapers after the Poland/England game of 8 September 1999, and Brian's report of the Manchester United /Bayern Munich game of 26 May 1999, illustrate a common metaphor used in football reporting, that of war. It is also drew on the reputation of German football teams to describe the German's defence (itself a military term), as 'well-drilled', and a 'solid rearguard', which withstands the attempts of Manchester United to 'attack' and 'probe' its ranks. The sense of chaos is compounded by the way the united fans are described as 'hordes', while the Manchester goalkeeper advances near the end hoping to 'cause havoc'. It is somehow fitting that it is the United player with the nickname 'the Baby-Faced Assassin', who supplies the final coup de grace.

Such military language was also reflected in the reports after the Poland/England game on September, 8. A sample of quotes from just one of the tabloids, The Mirror, from Thursday September, 9 illustrates this. The 'old enemy' Poland, (remembering Tomaszewski's heroics 26 years earlier), had come back to haunt England's qualifying 'campaign', and had thwarted Alan Shearer and his 'troops'. During the first half hour of the game England had been 'under siege' and Martin Keown had received a yellow card for 'taking out' Miroslaw Trzeciak. Scholes, who in the earlier game that year at Wembley had

'plundered' a hat trick, was now kept subdued. Pearce, however, was magnificent; he 'always has heart for the battle'.

We should not be surprised that the language used to describe matches between countries should display elements of nationalism or even jingoism. Ryszard Kapuściński has written about two South American countries going to war over the result of a soccer match, and George Orwell saw sport as 'an unflinching cause of ill will'.

The relationship between sport and metaphor is two-way; not only are many sporting terms metaphorical in origin, drawing on other fields of activity for their semantic connection (as with the military images mentioned above), but sport acts as a source of metaphors too. This is best seen in the example of cricket, which for a long time was viewed as representing essential English characteristics such as fair play, team spirit, and an acceptance of victory or defeat with equal grace. As Vita Sackville-West, the close friend of Virginia Woolf, wrote in 1947, 'the Englishman is seen at his best the moment that another man starts throwing a ball at him'. The way in which the game of cricket is viewed as a metaphor for life is reflected in the use of such expressions as 'it's not cricket' (it's not fair), 'to be on a sticky wicket' (to be in a difficult situation), and 'off one's own bat' (without help from anyone else). Of course language evolves and changes, and cricketing metaphors and images are not as common nowadays as they were thirty years ago (Sporting Idioms, gives a fuller range of others in popular use). However it is still the case that cricket provides a romantic, rural ideal for some people, as seen in former Prime Minister John Major's definition of Britishness as 'long shadows on county cricket grounds'. Such an image is restricted; it has its roots in the past, and is mainly applicable to England and not the rest of the United Kingdom.

Recently there has been a notable increase in both the quantity and quality of sportswriting appearing in daily papers, Sunday broadsheets, glossy magazines, and bookshops (with a special chain of bookstores, 'Sportspages', now catering for the literate fan). Much of the increased interest initially came from football; not only did the sport become very fashionable in the past ten years, but fanzines also offered a fresh perspective on the game. These magazines, produced by and for fans, can be irreverent, controversial, offensive, and anti-establishment, attacking the growing commercialisation of the game, and defending the rights of the 'real' fan. They are printed in opposition to official club magazines, and although the quality of the production and the writing is varied, they have shaken up football writing. Every club will have at least one fanzine, and the big clubs several. What they helped to do was show that 'fanatical' devotion to a soccer team was not synonymous with illiteracy, racism, and hooliganism. This message was reinforced by the book and film success of Nick Hornby's Fever Pitch, chronicling his love affair with Arsenal Football Club. Nowadays football is not the only sport being written about, and sport attracts print from Prime Ministers to Poet Laureates.

It should be mentioned that sport comment as a discourse genre takes place supported by the illuminated indicator boards at a stadium that gives additional visual information (here belong also the stadium, the audience, the play, the score). In general sport comment is a speech piece that should be completed and ordered. It is verbal spontaneous monologue, but its main hardship is that it must be completed and well structured.

1.1 Sport metaphor

Metaphor is one of the implements that help us to see and understand the world. We should distinguish metaphor and symbols, concepts or signs. Metaphor is the result of the semantic process when a form of a linguistic unit is transposed from one object of designation to another on the basis of a certain similarity between these objects as reflected in the speaker's mind (snow melts – time flows, money melts). Metaphors may be used on different types of similarity, for example, similarity of shape, function, position, colour, temperature, etc. E.g. cold reason, the foot of mountain, to catch an idea. Words denoting animals and their actions may be used metaphorically to denote human qualities. E.g. a fox ("a crafty person"), to wolf ("to eat greedily").

Metaphors are one of productive elements for the discourse. Discourse is a communication delivered into the situation. The field of it is the type of activity a person is engaged in expressed through language.

The main field of this research is sport terminology. For this matter Lackoff and Johnson marked out six main types of soccer metaphor:

1. Sport is war:

- the game is a battle: A great game of soccer with two superb sides battling for supremacy. Бумба футбольних титанів.

- the football field is the war field: Holland mounted their first attack on the right flank. Стадіон – полігон для експериментів, простір для маневрів.

- the ball is weapon: Kaka blasted the ball past Kahn. A rocket shot, a snap-shot, a bullet header. Розстріл воріт, постріл у ворота.

2. A team is a mechanism:

- a player is a part of the mechanism: Makelele is a crucial part of Chelsea machine. Схема гри, обробка м'яча.

- a team is machine: he Galacticos have hardly been firing on all cylinders in league this season. Динамо на всіх парах несеться до перемоги.

3. A game is a travel:

- movement of players is traveling: But this only allowed Robbens freedom to roam down the left flank. Реєс вільно розгулював по правому флангу.

- the tournament is a travel: Chelsea march on to the Fifth round, route to the final. Путь в півфінал.

4. The game is a building:

- football field is a castle. The gates are the front door: Neither side could break the deadlock, the defensive wall. Підібрати ключ до воріт суперника, відкрити ворота.

- the play of a team is a building: to break the defensive wall, to build attacks. Геометрія футболу, фундамент атак.

5. The team is a group; the tournament is a group:

- a play is a job, a player is a worker: Robin van Persie was dismissed in the 45th minute. Ювелірна передача, каліграфічний удар.

- role – home: Duff is an exciting player equally at home on the wing or in the center. На лівому фланзі Робен почував себе як вдома.

6. Sport is art:

- game is a play, players are artists: Zidane and Materazzi had been the key actors in the drama all night. Суперники помінялися ролями, маестро, віртуоз, сценарій фіналу.

- game is music: Newcastle seem to have found their rhythm. Дует форвардів, дери жер.

Metaphors that are connected with orientation in space are called orientational metaphor. Metaphor orientations are based on our physical and cultural experience. Defensive game is related with the notion of depth, attack with the notion of sharpness: Counter – attack started from deep in their penalty area. Діяти з глибини; гострота атаки.

Among all the analysed expressions the most frequent is “Sport is war” model. Most of the metaphor models are universal and it is an essential part of the sport discourse.

2. Language for specific purposes

Specialized lexis is not found somewhere in between the units of common vocabulary, but forms its sublanguages, organized according to the pattern of language in general, which, however, are smaller and professionally oriented. Sublanguages are not used by professionals only, but also by large groups of people as professional argot. Thus, sublanguage is a subvariety of language used in a particular field or by a particular social group and characterized especially by distinctive vocabulary.

Such professional orientation of lexis ranging from top scientific terminology to professional argot allows us to speak about the existence of a number of autonomous and smaller specialized sublanguages, or languages for specific purposes (LSP) within an all-national language. The term “sublanguage” arose in the 60s of XX c. and designated the complex of means (basically lexical ones) used in texts on a particular subject. On the one hand sublanguages are richer than general language – because of a great number of specialized words. On the other hand, they are poorer because they use only a part of the expressive means of the language in general. The expressive means of a sublanguage develop lopsidedly, because here only those linguistic elements develop that are required by a particular professional activity. The language in general becomes a certain background for it, just a reserve from which necessary means are borrowed.

A professional sublanguage that embraces the whole trade but remains obscure to non-professionals should be distinguished from the so-called lingua franca, i.e. freely functioning languages that include a certain international fund of special (but not narrowly professional) lexis and thus understandable to many. Such languages arose among sailors, travelers, merchants etc. Later in Europe Latin became the lingua franca of tradesmen, and in the East Arabic played such a role for a long time.

Professional sublanguages as autonomous language systems within one national language are not strictly isolated from one another. They all form a part of the national language. Persons who use a

certain sublanguage usually have a command of one or a number of other sublanguages and may serve the transition of borrowings from one system into another.

In many sublanguages international elements prevail over the national ones.

2.1 Growth of languages for specific purposes

The term "languages for specific purposes" (LSP) arose in the 70s in the countries where German is spoken. It is extremely close to the term "sublanguage" because any LSP is based on specialized lexis.

In terms of grammar, LSP is poorer than the general language, whose syntax is deliberately developed. LSP is, on the contrary, marked by poor and frequently repeated constructions. Thus, many scholars regard LSP as a complex of terms and typical constructions.

LSPs are usually poor in expressive means. It lacks the variety of stylistic devices found in literary texts. The reason is that expressiveness interferes with conceptual accuracy.

Non-terms in an LSP are a usual phenomenon because they serve the purpose of communication. Whatever the level of specialization, any text should include general vocabulary units for communicational purposes. However, each LSP has a certain set of common words it employs and their number is rather limited.

A great contribution to the study of functional-stylistic varieties of scientific, professionally oriented and commercial texts all functioning as Language for Specific Purposes (LSP) has been made by western researchers. The history of LSP emergence and development starts after World War II. "The notion of LSP appeared in the 1960's as a result of scientific, technological and economic revolutions that required the knowledge of the English language within a certain type of scientific and professional activity". However, the study of language was activity-oriented even before, though it was not realized. The development of LSP has 5 stages:

1. register analysis;
2. discourse analysis;
3. target situation analysis;
4. skills and strategies;
5. learning-centered approach.

Now we can also speak about the rise of the sixth stage of LSP development – it is learner-oriented approach. The main distinctive feature of this approach is that focus is on the learner with his/her needs and interests. Similarly, the teachers have recently been speaking of the learning, not teaching, process which first of all implies learner's striving for and ability of learning. The last four stages of LSP development reveal considerable deviation from language linguistic analysis and enthusiasm for teaching methodology. English for Academic Purposes as a functional-stylistic variety of LSP is divided into English for General Academic Purposes (EGAP) and English for Specific Academic Purposes (ESAP).

The latter deals with the elaboration of principles of scientific text logical arrangement, the identification of structural identity and dissimilarity of scientific texts, the revelation of their lexical, grammatical and stylistic peculiarities in various fields of science. The language of EIRS (English for International Relations Students) researchers is part of ESAP, therefore its research includes linguistic structure analysis, lexical content study as well as the study of grammar and style.

LSP research that is a combined linguistic and methodological study of the English language is of major topicality. It is connected with the fact that the aim of this trend of research is the solution of a serious contradiction between traditional linguistic studies and the existing practice of professional language in higher educational institutions.

2.2 Why sport English is a Language for Specific Purposes

We can state that Language of Sport is Language for specific purposes as it has all these characteristics:

1. it is defined to meet specific needs of the learners.
2. it is related and designed for specific field.
3. it is usually used in specific situations.
4. it is designed both for professional users and amateurs.

We can see that Language for Specific Purpose (in this case Sport language) can but is not necessarily concerned with a specific discipline, nor does it have to be aimed at a certain age group or ability range. It is created for everyone in general and for each person in particular. If we agree with this definition, we will see how broad LSP really is. In fact, one may ask 'What is the difference between the LSP and General English?' The answer is quite simple, "in theory nothing, in practice a great deal".

3. Terminology and system of terms

Terminology is a subsystem of the general lexicon, which means that it must be in compliance with the general lexical standard. According to Šipka, the difference between the term and non-term is the following:

- *Term has lexical meaning;*
- *The essential form of the term is the written one whereas it is the pronounced form with the lexeme in the general lexicon;*
- *Terms are the consequence of conscious intervention;*
- *There is terminological correlation between different languages;*
- *Synchronic dimension is particularly important for the term, as opposed to diachronic one as a characteristic of the non-term (D. Šipka, 1998).*

One of the word formation processes in terminology is borrowing words and abbreviations from other languages. The number of such words in the sports terminology is high (in the corpus of terms in football, it is as high as 57.47%). Most of the loan words are of English origin. The most common reason for lexical borrowing is a lexical gap for a particular notion. Before the borrowed term is integrated into the lexicon, it should be adapted on the semantic, phonological and morphological levels so that it may function as the domesticated one.

3.1 The way the term appears

The number of terms in developed countries usually exaggerates the number of usual words and one can count now around few millions of lexical units. This number is increasing rapidly.

Terminological units come to a language in different ways. The first one is the recognition of a usual word a term. This is not the best method because of reinterpretation and metonymy ("голова", "плече"). The form, pronunciation, declination and stress of the term may be changed to differentiate such lexemes.

Borrowing is more appropriate way of term creation. Different terms are taken from different languages depending on historical situation. Music and commercial terminology usually is of Italian origin (легато, адажіо, анданте, банк, авізо, лоро, альпачі), scenic and post terms are of French origin (антракт, партер, афіша, кур'єр, бандероль), sport terminology is of English origin (футбол, спорт, чемпіон, ринг). Military and technical terms are taken from German (верстат, кронштейн, еркер, плац, бруствер, фельдфебель, штандарт).

The usage of Greek or Latin words and word combinations is another type of borrowing. Such terms were formed in different periods of language development. Church terminology for those who profess catholicism is mainly taken from Latin. For the Greek Church it is mainly taken from Greek. But today terms can be formed by mixed type: one stem of Greek origin, another one of Latin (for example, word «термінологія» consists of Latin element terminus — limit and Greek logos — science).

It should be mentioned that new terms are not simply "thought out". Another way of term creation is borrowing from another field and in this case it may acquire a new meaning (for example, «морфологія» in linguistic and biology; «мовлення» in linguistic, physiology, medicine and psychology).

3.2 Term definition

It is not easy to define the term and there were many attempts to do it. We will consider two of them.

Golovin B.N. says that the term is the word or a word combination that denotes a professional notion and should be used in a concrete field.

The Scientific and Terminology Committee defines a term as a word or word combination as the unity of the phonetic sign and the notion of this sign in the system of concepts of some scientific branch. We may assume that terminology is the unity of terms which express the notion of some sphere, that were historically formed (Kvutko, Lejchuk 1986).

In the process of terminology research linguists define:

- a. *terminology study (terminology);*
- b. *professional lexicon of some language (ukrainian or english lexicon);*
- c. *professional lexicon of some field (linguistic or medicine lexicon).*

The system is the unity of elements and the relations between them, and the term is its essential part and it will not exist if it is not systematic. This system consists of concrete knowledge of some field.

3.3 Semantic features of a term

Terminology being a part of general lexicon has its own peculiarities. Some linguists recognise scientific and technical terminology. Winje G. and Marten A. emphasize that this difference is caused by circumstances of science and technic development: the technic appeared as the result of longlasting tests and mistakes that were held at random and the science was developed autonomous and on purpose.

That's why we cannot say that technic and science belong to the same thought field and can be expressed by means of the same linguistic units. For each case different notions and means are used. But we should also remember that these spheres had been developed in parallels and supplementing one another.

Term specification :

1. *The term should suit the norms and rules of a language.*
2. *The term should be systematic.*
3. *The term should have clear definition of some notion.*
4. *The term may be relatively independent from the context.*
5. *The term should be accurate.*
6. *The term should be short.*
7. *The term should be monosemantic (this monosemantic should exist in one system of terms).*
8. *Synonymy is not inherent to terminology.*
9. *The term should be neutral.*
10. *The term should be euphonious (dialectisms, slang or barbarisms cannot be used for term creation).*

Though, the term is not isolated or independent from general lexicon but forms a full value part of general lexicon.

3.4 Morphological structure of sport terms in English

The first stage for term translation is the determination of the field the term is referred to and comprehension of its meaning in the source language and ability to translate it to the target language.

Kovalenko A.J. determines two stages of terminology translation: defining the meaning of a term and translation of it to the target language. To make an accurate translation one should find out which type of term formation the given word belongs to. Kovalenko defines four main types:

She also notes that all the terms are united into system of terms that are devoted to some peculiar field. Each system of terms is divided into groups that denote the class of objects, processes or characteristics.

3.5 Types of terminology translation

Scientists differentiate few types of terminology translation methods. One of the easiest ways of translation is transliteration - a mapping from one system of writing into another, word by word, or ideally letter by letter. Transliteration attempts to be exact, so that an informed reader should be able to reconstruct the original spelling of unknown transliterated words; it is usually used for the simple type: dribbling – дриблінг, offside – офсайд, позиція поза зрєю. But a translator should use this method very carefully because of 'false words' that while transliteration may misrepresent the meaning: data- дані, instance - випадок.

Another method is calque or loan translation and it is a word or phrase borrowed from another language by literal, word-for-word (Latin: "verbum pro verbo") or root-for-root translation. This method is usually used for complex or compound terms translation: a standard key-combination – стандартна комбінація клавіш, Bundesliga – бундесліга, forward pass – пас вперед.

Descriptive method is useful for neologisms or author terms translation that are written in quotation marks: Today we are all members of many global "non-place" communities – сьогодні ми всі є членами багатьох глобальних спільнот, що не прив'язані до якоїсь певної території; diving header – удар „ластівкою” (удар головою в падінні).

The adequacy of translation depends on:

- *the background knowledge of the field the term is used in;*
- *the type of the term;*
- *the proper choice of translation method.*

3.6 Sport terms translation hardship

Integral processes Ukraine is involved in now are connected with different human activity spheres, including sport and physical training. Development of existing sport arts and implementation of new ones are of great interest for the linguistic studies, as most of those terms are taken from foreign languages and some of those terms do not exist at all in languages under study (English and Ukrainian). So we should take care of adequacy of its translation.

Adequacy problem is very important as the more adequate translation is the more exactly the process or phenomenon is expressed. Emotional component is very important during translation and it complicates greatly the adequacy of translation. The translation issues were of great interest for the linguists for a long time. One should mention works of Karaban V.I., Komisarova V.I., Korynets I.V.

Nowadays, the foreign language terminology peculiarities in the target language are emphasized (Mazjuk G., Borovska O.V.).

Vinogradova V.S. distinguished six main text types, one of which is socio-political (here belong magazines, newspapers, radio, television). These texts should somehow influence on society, but the function of message delivery remains the main and forms the text typology.

Connotative sense is also inherent for the sport terms (and this is emotional component). Some terms are of slang origin, so it is not that easy to convey the connotative meaning because it may be lost during translation. Sport terms are significant for games and motional component is vital for such terminology. During the game people are fulfilled with different emotions (stress, happiness, expressiveness, rage) and often terms are invented under the influence of such feelings:

Smash (lawn tennis) – means a 'удар', but this strike is crushing, because 'smach' means destroy, crash.

Timekeeper – means 'секундомерист', while 'keeper' means guard, watch.

Goalkeeper – means 'ворота', where 'goal' means ворота, гол (but the first meaning is aim, target).

English word 'foul' is of great interest because in sport it means fault, break of the rule but the first meaning is dirty, stinking or spoiled and if we consider 'foul situation' in a game, it may be translated as dirty game.

One more example is taken from basketball: key lane – it means трисекундна зона, but if to translate it literally – the meaning 'the key zone'. We can see the importance of the connotative meaning in these examples. Frequently translators do not realize the importance of connotative meanings that are vividly expressed in English but do not exist in Ukrainian translation. During translation from English into Ukrainian the denotative meaning is kept but the emotional component may be lost.

Sport terminology is specific but it is used by everyone and everywhere (by sportsman and amateurs), and it is used in texts of this type. The greatest peculiarity of sport terms among all the other terms is the sense of relative equivalence, if to take into account the type of texts they are used for. So we should mind the translation equivalence. Equivalence is keeping the relative balance of semantic, stylistic and functional information for both – the source and the target language terms (Vinogradov V.S.). Original and translation equivalence is general understanding of information located in a text, including information that can influence not only upon mind but also upon senses of the recipient. This information is expressed both explicitly and implicitly. Adequate translation is the translation that directly conveys not only the main plot but also stylistic peculiarities of lexical and grammatical notions. Chyzhakina A.P. states that the main component of adequacy in translation is direct preservation of literary norm and style.

While translating sport articles one should not lose informative plot, and the target text should be of the same style as the source one. It means that different syntax transformations will take place while translation (such translations have relative equivalence, but they are more alike the original than while interpreting):

The world champions, who will meet New Zealand in the final, scored twice inside the opening six minutes and added two more in the closing four minutes to complete a crushing victory. Australia scored a further two tries including a 41st minute effort from captain Darren Lockyer, who delivered a masterful performance.

Чемпіони світу, які зустрінуться з Новою Зеландією в фіналі, набрали 2 напівсередніх на шостій хвилині матчу та додали ще 2 очки під час заключних чотирьох хвилин на довершення розгромної перемоги. Австралія набрала ще два трьохочкових, включаючи й видатну спробу Даррена Лок'єра, капітана команди, який продемонстрував майстерну гру.

Absence of terminological accuracy and short phrases that should be decoded and explained are typical for English magazine language. Absence of terminological accuracy is caused by lexico - semantical peculiarities of English. It means that one lexeme may contain a lot of senses that are used both in general context and specific one. Very often the translation appears to be much bigger than the original text. For example:)

So, the differences in terminology use and translation in both languages is obvious. It happens because of style difference (newspaper style and translation explanation). We can see that even the size of the original and translation is different.

Scientists share the thought that terms should be referred to the lexical group in which lexical meanings of the words in different languages are almost the same:

Some terms may have many meanings. For example, terms overtime (овертайм), outsider (аутсайдер), revenge (реванш) etc. are not only sport terms, but also terms used in different systems of terms (Great Explanatory Ukrainian Dictionary).

It is stated that while translating one should not only choose the meaning from the dictionary, but should also use different unexpected words, taken from everyday speech as the dictionary cannot include all the meanings of a concrete word or word-combinations. For example, English lexeme 'goal' or 'gate' and Ukrainian 'ворота': in Ukrainian we may say 'без воріт' (it means that there were no goals in this game), but this lexeme is not expected to be used in such a word combination (it is not fixed in a dictionary):

"Обидві в поганому стані, команди видали сумне видовище, що в народі іменують як "зовсім без воріт".

Both being in bad shape the teams produced a kind of sorry sight commonly called "without a goal".

Or

"Цього року мені вже доводилося відвідувати дитячо-юнацькі спортивні змагання товариства на Кубок "Золотий колосок", а також міжнародний турнір штангістів... та за всіма не встигнути, бо "колосіївський" спортивний пульс прослуховується настільки широко, наскільки безкрайніми є сільські місцевості України."

This year I happened to visit the children's-youthful sporting event of the association which was the cup-tie "The golden spikelet" and the weight-lifters' international tournament... but one can't catch up with everybody as the athletic pulse of the 'spikelets' is strong to the extend the Ukrainian countryside is boundless (Спортивна газета, № 77, 2006).

Metaphoric expression 'спортивний пульс' can be felt only in the context and it is not taken from the dictionary. Sport terms are the object of this investigation, and they are taken from sport newspapers and articles. So we should take into account that for this text style characteristic is the use of these terms together with general lexicon. And we should mind this during translation:

"І влада, й її супротивники, здається, узяли на озброєння тактику «відкритого футболу», при якій на кожну атаку обов'язково відповідають контратакою. Подібні «ігри» тривали весь минулий тиждень. І, мабуть, ніколи ще пресинг не був такий запеклий, форварди — такі наполегливі, а захисники — такі нещадні"

(Дзеркало тижня, 9 (333), 2001).

"Both the authorities and their opponents seem to have adopted the tactics of 'open football when each attack will be repelled with a counterattack. The 'game' has been going on all the past week. Never before, it seems, has the pressure been higher, forwards more persistent, and fullbacks more ferocious" (Zerkalo nedeli, 9 (333), 2001).

Commonly used lexicon and terminology are semantically united. We should mind it while translating sport terms and articles from English into Ukrainian. When we use a general word to nominate some peculiar notion this word acquires the new meaning. Most of the sport terms are internationalisms and most of them are of English or Latin origin; those words are either absolutely or partly transliterated. A great number of realias are translated by means of transliteration, calque or paraphrase:

кваліфайн-раунд – qualifying round

Челендж кап - challenge cup

суха поразка - love game, whitewash, lopsided score

зрати в нічию - run a dead heat

опен-турнір – open tournament.

Very often the notion of synonymy complicates the translation adequacy. Sometimes synonyms of the sport term may explain it (or a term may be translated to the target language, these translated terms are called duplicates). For example:

goal-keeper – голкіпер, воротар

ball – куля, м'яч, шкіряна куля, футбольний м'яч.

But the most interesting for the translator is professional sport terminology and here the context plays the main role:

Coach: "I told ye afore no' tae skelp it frae the hauf-way line."

Translation: "Не намагайся давати подачу воротарю з відстані 60 ярдів, якщо звичайно ти не Пеле чи Девід Бекхем."

Coach: "Effin hell laddie ... you couldnae score in a knockin' shop."

Translation: "Відпрацюй техніку подачі, інакше переведу тебе назад до Реалу."

As we see, the translator should mind not only lexical equivalence but also the type of the text it is used for as a good term translation depends on the context it is used in.

Such discursive questions of equivalent translation of sport terminology as synonyms and lexical transformation are regarded on the basis of English and Ukrainian sport texts of public informative character. We make an attempt to consider the existing methods of translation of the whole amount of sport terminology taking into account lexical, grammatical, contextual and communicative information. The peculiarity of sport terminology translation - its relative equivalence is pointed out.

The analysis of the "Soccer glossary"

Terminology is the study of terms and their use. Terms are words and compound words that are used in specific contexts. Not to be confused with "terms" in colloquial usages, the shortened form of technical terms (or terms of art) which are defined within a discipline or specialty field. The discipline Terminology studies among other things how such terms of art come to be and their interrelationships within a culture.

Terminology is a subsystem of the general lexicon, which means that it must be in compliance with the general lexical standard. Terminology being a part of general lexicon has its own peculiarities. Most of the terms that exist in Ukrainian are taken from another language. Sport terms that are being investigated in this paper are mostly of English origin. The main task for me is not only to translate sport terms, but to translate them faithfully, to choose the best means of verbalization and the most suitable method of translation.

The first stage for term translation is the determination of the field the term is referred to, the comprehension of its meaning in the source language and ability to translate it to the target language.

For my research I used Soccer glossary which contains 250 words and word-combinations. For the analysis I used on-line dictionaries, sport newspapers, comments and their translations. There are three main methods of translation that are the most suitable for terminology: transliteration, calque or loan translation and descriptive method.

The most common translation method used in this investigation is calque or loan translation that is a special kind of borrowing whereby a language borrows an expression form of another, but then translates literally each of its elements. As the result I found out that 164 out of 250 terms had been translated using this method:

A small part of soccer terms had been translated using transliteration that is a mapping from one system of writing into another, word by word, or ideally letter by letter. Transliteration attempts to be exact, so that an informed reader should be able to reconstruct the original spelling of unknown transliterated words. To achieve this objective, transliteration may define complex conventions for dealing with letters in a source script which do not correspond with letters in a goal script. This method is used when there are no means of verbalization in the target language for the given word, so the term is "taken" from the source language though it is written with the means of target one.

Fig. 1. Term translation methods' relation.

My research of Soccer terminology is based on Kovalenko's classification of terms' formation, who defined:

- Simple terms, which consist of one word (e.g. beat, goalie, starter);
- Compound terms, which consist of two stems or words and may be written as one word, with a dash or separately (e.g. back header, goalmouth, on-side);
- Terminological expressions consist of three or more words (e.g. FIFA world player, Laws of the Game);
- Abbreviations (e.g. AYSO, FIFA, NOC).

I analysed Soccer glossary which counts 250 words and word-combinations. During research I found out that:

- 100 words out of 250 are of simple type (e.g. assist, hook, kit, shot, stiffness);
- 115 words out of 250 are compounds (e.g. bicycle kick, diving header, forward line, playing colours, "yellow fever");
- 21 word-combinations out of 250 are terminological expressions (e.g. build of a player, FIFA World Player, out of play, win-draw-loss record);
- 14 out of 250 terms are abbreviations (e.g. AC, FIFA, NPSL, USYSA).

Soccer terms formation relation is displayed on the Figure 1.

Fig. 1. Terms formation relation

II. Solution of the problem by means of Computational Linguistic. The creation of on-line dictionary of sport terms

1. The PHP programming language

PHP is a scripting language originally designed for producing dynamic web pages. It has evolved to include a command line interface capability and can be used in standalone graphical applications.

While PHP was originally created by Rasmus Lerdorf in 1995, the main implementation of PHP is now produced by The PHP Group and serves as the de facto standard for PHP as there is no formal specification. Released under the PHP License, the Free Software Foundation considers it to be free software.

PHP is a widely-used general-purpose scripting language that is especially suited for web development and can be embedded into HTML. It generally runs on a web server, taking PHP code as its input and creating web pages as output. It can be deployed on most web servers and on almost every operating system and platform free of charge. PHP is installed on more than 20 million websites and 1 million web servers. The most recent major release of PHP was version 5.2.6 on May 1, 2008.

Usage

PHP is a general-purpose scripting language that is especially suited for web development. PHP generally runs on a web server, taking PHP code as its input and creating web pages as output. It can also be used for command-line scripting and client-side GUI applications. PHP can be deployed on most web servers, many operating systems and platforms, and can be used with many relational database management systems. It is available free of charge, and the PHP Group provides the complete source code for users to build, customize and extend for their own use.

Originally designed to create dynamic web pages, PHP's principal focus is server-side scripting, and it is similar to other server-side scripting languages that provide dynamic content from a web server to a client, such as Microsoft's ASP.NET system, Sun Microsystems' JavaServer Pages, and mod_perl. PHP has also attracted the development of many frameworks that provide building blocks and a design structure to promote rapid application development (RAD). Some of these include CakePHP, PRADO, Symfony and Zend Framework, offering features similar to other web application frameworks.

As of April 2007, over 20 million Internet domains were hosted on servers with PHP installed, and PHP was recorded as the most popular Apache module. Significant websites are written in PHP including the user-facing portion of Facebook, Wikipedia (MediaWiki), Yahoo!, MyYearbook, and Tagged.

2. The program product development

The on-line translation dictionary of sport terms based on Soccer sport art was developed to facilitate the language acquisition for language learners, sportsman and amateurs and also be useful for translators and interpreters.

The on-line sort terms dictionary is available from. The product was developed using php software. It is very simple to use, everyone can try it, add new words and leave comments.

Here is a small dictionary user manual:

On Figure 1 the Home page is displayed.

In the 'Input search term' widow type a word or phrase to be translated. Click 'Search' or 'Enter' button. A new window with the term, its definition and translation appears (see Figure 2).

Conclusions

The translator should pay great attention to the interpretation of the lexeme connotative meaning and emotional component while adapting sport terms.

We should mind that a great part of sport terms belong to another language and it would be complicated to translate them without a background knowledge.

Sport terminology investigation and usability is still topical as the problem of Ukrainian terms implementation is not solved yet because most of the terms are of Russian origin.

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Technical sciences

DESIGN AND DEVELOPMENT OF AN INFORMATION AND ANALYTICAL SYSTEM FOR MANAGING THE EDUCATIONAL ACTIVITIES OF UNDERGRADUATES

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ПРОЕКТИРОВАНИЕ И РАЗРАБОТКА ИНФОРМАЦИОННО – АНАЛИТИЧЕСКОЙ СИСТЕМЫ УПРАВЛЕНИЯ ОБРАЗОВАТЕЛЬНОЙ ДЕЯТЕЛЬНОСТИ МАГИСТРАНТОВ

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Abstract

This project is aimed at providing an opportunity for undergraduates to get acquainted with the upcoming educational process for the entire period of study. This way of pre-submitted information will allow undergraduates to make plans based on the program of study. Based on this approach, undergraduates will have the opportunity to allocate their time and intellectual resources for training.

The project will be presented as a website that will allow you to visualize the events of the educational process in chronological order.

The site will help reduce the information load on the teaching and administrative staff of the university. Answers to the questions of the educational process can now be found on the site. The guidebook will be an excellent assistant for undergraduates.

Аннотация

Данный проект направлен на предоставление возможности магистрантам ознакомиться с предстоящим учебным процессом за весь период обучения. Такой способ заранее представленной информации позволит магистрантам строить планы на основе программы обучения. На основе данного подхода у магистрантов появится возможность распределять своё время и интеллектуальные ресурсы на обучение.

Проект, будет представлен в виде сайта, который позволит визуализировать события учебного процесса в хронологическом порядке.

Сайт поможет снизить информационную нагрузку на преподавательский и административный состав университета. Ответы на вопросы учебного процесса, теперь можно найти на сайте. Путеводитель станет отличным помощником магистранта.

Keywords: educational process; guide; handbook; scientific activity; internship; magistracy; alumni recommendations.

Ключевые слова: учебный процесс; путеводитель; гид; научная деятельность; стажировка; магистратура; советы выпускников.

Сайт «Гид магистранта»

Альтернативное название проекта, «Гид магистранта».

Проект является результатом труда пройденного процесса обучения, со стороны магистранта. Проект характеризуется фразой «Запоздалый старт иногда дает определенное преимущество. Он позволяет тем, кто начал позже, не делать лишних шагов и ошибок, допущенных первопроходцами».^[1]

Основой для проектирования было придерживаться простоты. «Простота – это не только наглядный стиль. Это не минимализм или отсутствие беспорядка. Чтобы достичь простоты, необходимо прорыть туннель в недрах сложности. Чтобы быть по-настоящему простым, нужно добраться до самой глубины».^[2] «Упрощение — это азы, тип мышления, которому каждого начинающего дизайнера учат в школе».^[3]

Проект рассмотрен на примере учебного процесса Торайгыров университет.

При помощи сайта можно:

- ознакомиться с предстоящими событиями учебного процесса за весь период обучения;
- узнать полезную информацию по стажировке, практикам и научной деятельности;
- найти необходимые в период обучения объекты в университете.

Дополнительными особенностями стали возможности:

- скачивать примеры отчетов и примеры их оформления по стандартам;
- получать уведомления о плановых и внеплановых событиях учебного процесса в чате телеграмм;
- просматривать аналитику (доступно администратору сайта).

На сайте информация представлена на трёх языках:

- русский язык;
- qazaq tili;
- english language.

Составляющие страниц сайта:

- информация, описывающая учебный процесс;
- периоды;
- полезная информация в виде примечаний;
- календари, отображающие временной промежуток, разделенный по уровням;
- изображения;
- таблицы, с возможностью сортировки данных по заголовку;
- файлы, в виде отчетов, примеров оформления, представленных для скачивания.

На главной странице сайте представлены категории, карта и направления магистратуры (Рисунок 1).



Рисунок 1 – Главная страница сайта

Карта

Отображает объекты Торайгыров университет, которые будут необходимы для студентов в процессе обучения (Рисунок 2).



Рисунок 2 – Карта

Направления магистратуры

Научно – педагогическое направление

У научно – педагогического направления время обучения составляет 2 учебных года (4 семестра). Оно направлено на углубленную научно – педагогическую подготовку. Выпускники данного направления могут преподавать в вузах по своей специализации.

Профильная магистратура

У направления профильная магистратура время обучения составляет 1 учебный год (2 семестра). Оно направлено на углубленную профессиональную подготовку. Обучение носит прикладной характер и направлено на развитие навыков управления во всех сферах деятельности. Задача профильной магистратуры – подготовка профессиональных менеджеров и руководителей.

Направления магистратуры показаны на рисунке 3.

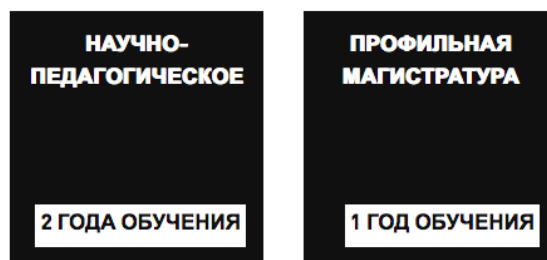


Рисунок 3 – Направления магистратуры

Категории направлений

На рисунке 4 показаны категории обоих направлений.

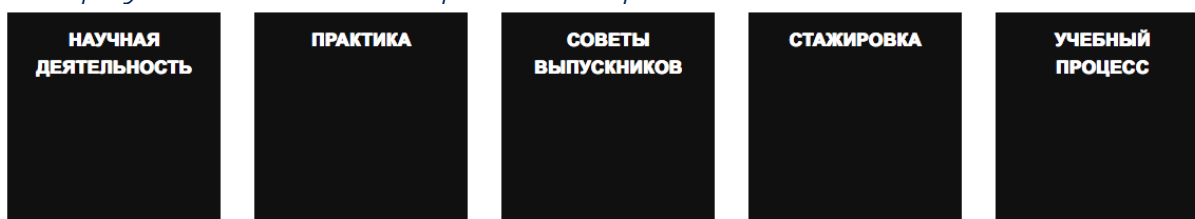


Рисунок 4 – Категории направлений

Учебный процесс

Состоит из учебных курсов, в которые входят семестры. Количество курсов зависит от направления.

Семестр отображает следующие данные:

- календарь (отображения событий учебного процесса);
- описание событий календаря;
- примечания.

Календарь показан на рисунке 5.



Рисунок 5 – Календарь

Пример описания событий учебного процесса показан на рисунке 6.

Рейтинг - семестр состоит из рейтинга 1 и 2, по завершению которых начинается учебная сессия.

- состоит из ТУ (Текущая успеваемость) и РК (Рубежный контроль);
- длительность рейтинга = 8 недель;
- длительность рейтинга ≈ 7 недель;
- на последней неделе рейтинга проводится рубежный контроль.

Рубежный контроль - контроль учебных достижений обучающихся по завершении раздела (модуля) одной учебной дисциплины.

РЕЙТИНГ НЕ ОПРЕДЕЛЯЕТСЯ ЕСЛИ

- студент не прошел РУБЕЖНЫЙ КОНТРОЛЬ
- имеет по ТЕКУЩЕЙ УСПЕВАЕМОСТИ менее 50 баллов
- получил по РУБЕЖНОМУ КОНТРОЛЮ менее 50 баллов

Рисунок 6 – Описание событий

Пример примечаний семестров показан на рисунке 7.

❗ **ФОРМУЛА РАСЧЕТА РЕЙТИНГА: $P1(2) = TU1(2) \cdot 0,5 + PK1(2) \cdot 0,5$**

❗ **ОЦЕНКУ 1-ого рейтинга семестра можно ПОВЫСИТЬ во время 2-ого рейтинга**

Рисунок 7 – Примечания

Категории научной деятельности, стажировки и практики, рациональнее было объединить в общие структуры для направлений магистратуры.

Научная деятельность

Категории научной деятельности показаны на рисунке 8.

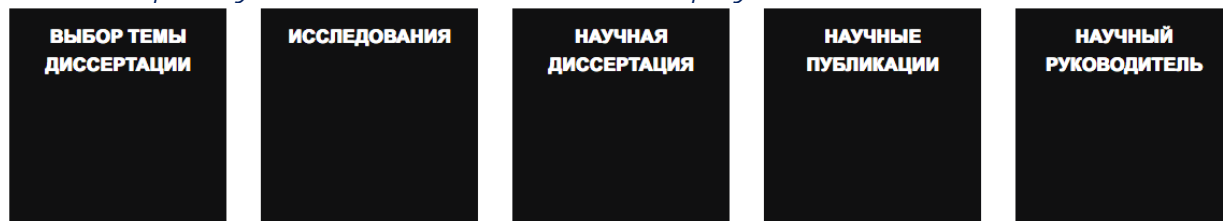


Рисунок 8 – Научная деятельность

Выбор темы диссертации

Содержит данные о периоде выбора темы магистерской диссертации, описание, полезную информацию.

Научный руководитель

Содержит описание, полезную информацию, список научных руководителей университета. Список научных руководителей университета представлен в таблице. Графы таблицы показаны на рисунке 9.

ФИО	Ученная степень	Рейтинг	Научные публикации
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Рисунок 9 – Научный руководитель

Научные публикации

Содержит полезную информацию, период публикаций и необходимое количество научных публикаций. Период и необходимое количество научных публикаций представлены в виде таблиц. Графы таблицы периода публикаций показаны на рисунке 10.

№ научной статьи	семестр
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Рисунок 10 – Графы таблицы периода публикаций

Графы таблицы списка научных конференций для публикации научной статьи показаны на рисунке 11.

Название конференции	Язык	Рейтинг	Цена (≈) Т
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Рисунок 11 – Графы таблицы списка научных конференций для публикации научной статьи

Исследования

Содержит описание, период и образцы отчетов исследований. Период исследования представлен в виде таблицы. Графы таблицы периода исследований показаны на рисунке 12.

Семестр	Название исследования	Результат
---------	-----------------------	-----------

Рисунок 12 – Графы таблицы периода исследований

Примеры отчетов по исследованиям и результат скачивания показаны на рисунке 13.

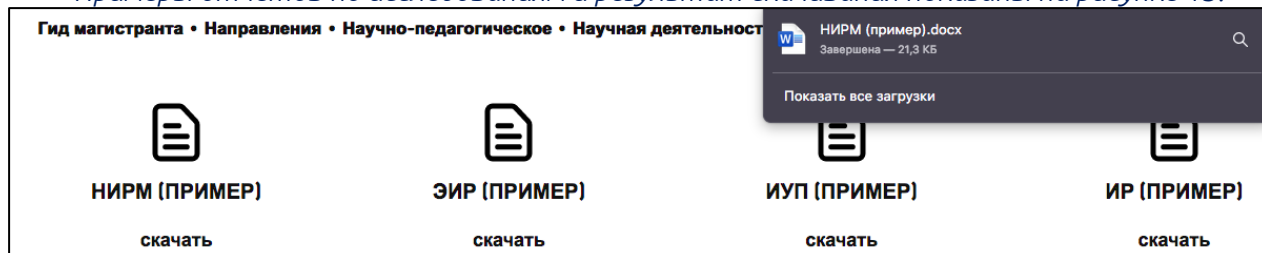


Рисунок 13 – Файлы примеров отчетов для скачивания

Научная диссертация

Содержит описание, примечания, примеры оформления. Примеры оформления представлены в виде файлов для скачивания (Рисунок 14).

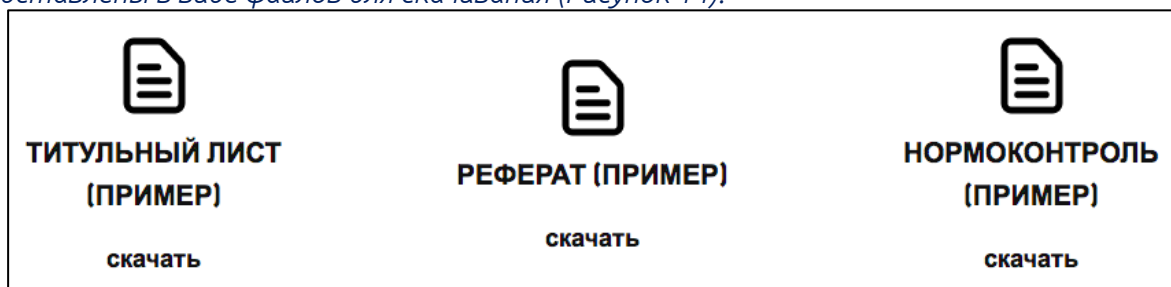


Рисунок 14 – Файлы примеров оформления для скачивания

Стажировка

Содержит описание, местоположение, период, список документов по стажировке. Период исследования, список документов и данные по месту прохождения стажировки представлены в виде таблицы. Графы таблицы периода стажировки показаны на рисунке 15.

Начало (месяц)	Завершение (месяц)	Семестр	Результат
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Рисунок 15 – Графы таблицы периода стажировки

Графы таблицы списка документов для стажировки показаны на рисунке 16.

Наименование	Количество	Время подачи (диапазон)
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Рисунок 16 – Графы таблицы списка документов для стажировки

Графы таблицы сведений о партнерах университета по стажировки показаны на рисунке 17.

Название	Местоположение	Формат	Язык	Рейтинг	Стоимость (≈) Т
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Рисунок 17 – Графы таблицы сведений о партнерах университета по стажировки

Практика

Содержит описание, период практик. Периоды практик представлены в виде таблицы. Графы таблицы периода практик показаны на рисунке 18.

Название	Семестр	Результат
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Рисунок 18 – Графы таблицы периода практик

Советы выпускников

Советы разделены по направлениям, научно-педагогическому и профильной магистратуре. Отображение советов идентично для всех категорий. Пример отображения советов показан на рисунке 19.

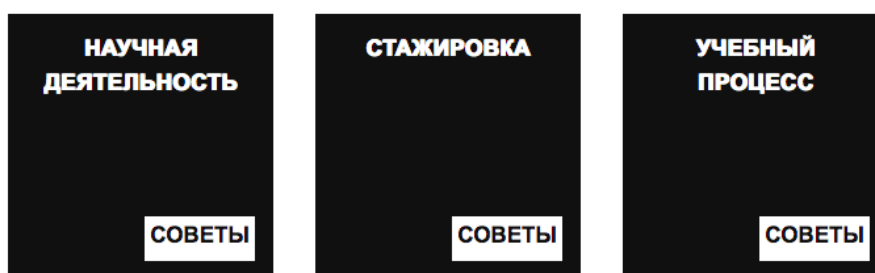


Рисунок 19 – Советы выпускников

Админ – панель сайта

Управление админ-панелью доступно на трёх языках (Рисунок 20).

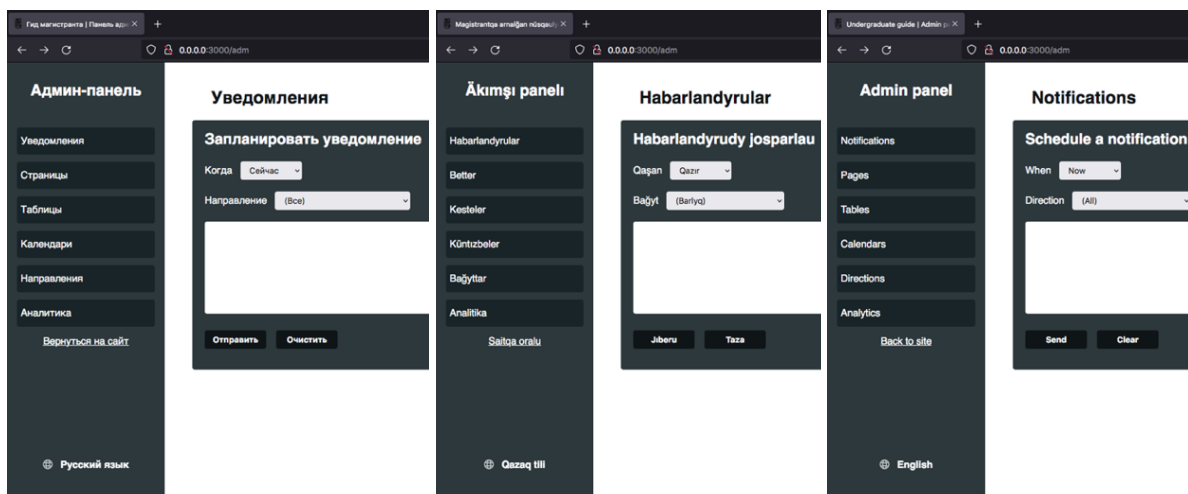


Рисунок 20 – Отображение админ-панели на русском, казахском, английском языках

Одним кликом можно выполнять добавление, редактирование данных на сайте сразу на трёх поддерживаемых языках. Для этого необходимо сменять язык заполнения, находящийся возле поле добавления (редактирования) данных. После ввода информации на трёх языках, остается только нажать на кнопку добавления (редактирования), и на сайт информация загрузится на трёх языках.

Категории для управления сайтом: страницы, таблицы, календари, направления.

Страницы

Форма для заполнения страницы показана на рисунке 21.

Рисунок 21 – Создание страницы

Таблицы

Форма добавления таблицы показана на рисунке 22.

Рисунок 22 – Заполнение название таблицы и колонок

После создания графов таблицы, заполнение структуры таблицы становится активным в свойствах типа, в категории создания (редактирования) страницы.

В свойствах типов, данные для оформления представлены следующим в виде:

- заголовок;
- параграф;
- примечание;

- список;
- таблица;
- календарь;
- советы;
- файлы;
- карта.

Данные для советов, файлов и карт хранятся в соответствующих папках, в проекте сайта.

Календарь

Форма для заполнения данных календаря и его событий показана на рисунке 23.

Рисунок 23 – Добавление событий в календарь

Направления

Форма для добавления направления показана на рисунке 24.

Рисунок 24 – Форма добавления направления

Telegram bot

Чтобы быть в курсе событий учебного процесса, на сайте представлена возможность подписки на уведомления при помощи телеграмм – бота. Ссылка на телеграмм – бота находится в подвале сайта (Рисунок 25).



Рисунок 25 – Ссылка на телеграмм – бота

После старта взаимодействия с ботом, будет предложено выбрать на уведомления какого направления вы хотите подписаться (Рисунок 26).

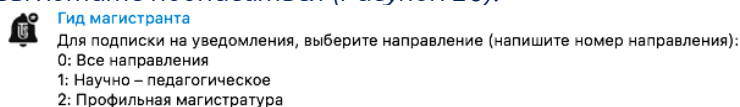


Рисунок 26 – Выбор направления для подписки на уведомления

После отправки соответствующего номера, будет оформлена подписка на уведомления. Для отписки необходимо отправить чат-боту сообщение: отписка.

Уведомления

Уведомления в чат-бот отправляются через админ-панель. В поле для сообщения вводится информация, задается время отправления и направление магистратуры (для которого отправляется уведомление).

Назначением для отправки уведомлений являются:

- научно – педагогическое направление;
- профильная магистратура;

- все направления.

Время отправки представлено в трёх видах:

- сейчас;
- после (количество минут спустя);
- в дату (год, месяц, день, час, минута).

Уведомления получают только подписанные на чат-бот пользователи.

На рисунке 27 показан процесс формирования запланированного уведомления.

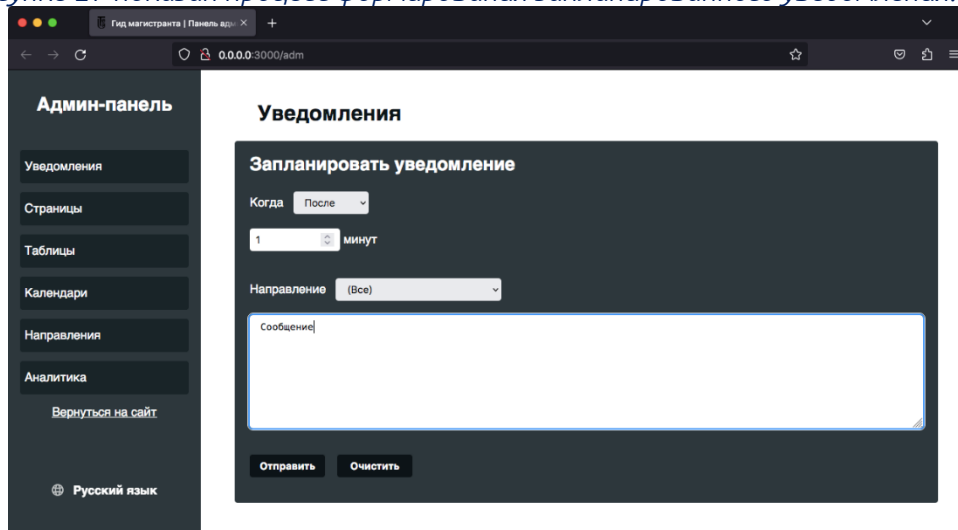


Рисунок 27 – Процесс отправки запланированного уведомления

На рисунке 28 показан результат отправки запланированного уведомления.

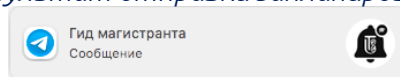


Рисунок 28 – Результат отправки запланированного уведомления

Аналитика

В админ-панели представлены сведения аналитики.

Сведения:

- общее количество пользователей сайта, и количество пользователей, просматривающих информацию на русском, казахском, английском языках.
- количество подписчиков телеграмм бота.

На рисунке 29 показаны результаты аналитики пользователями просмотра информации на сайте на русском, казахском и английском языках с общим количеством пользователей, а количество подписчиков телеграмм бота по направлениям.



Рисунок 29 – Результаты аналитики

Заключение

«Чаще всего инновации возникают при синхронизации идей и технологий. А это значит, что: глубокие идеи приходят как раз тогда, когда уже появились технологии, с помощью которых эти идеи могут быть реализованы.»^[4]

Построение информационной модели на основе опыта студентов, станет новым подходом к процессу обучения.

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ANALYSIS AND REDUCTION METHODS OF YARN WASTE FORMATION IN WEAVING**Nigar Makhmudova***Department of Engineering and Applied Sciences Azerbaijan State Economic University (UNEC)
AZ 1001, Baku, Azerbaijan***DOKUMADA İPLİK TELEFİ OLUŞUMUNUN ANALİZİ VE AZALTMA YÖNTEMLERİ****Nigar Mahmudova***Azərbaycan Devlet İktisat Universiteti (UNEC), Mühəndislik fakültəsi, Mühəndislik və Uygulamalı Bilimler Bölümü. Az 1001, İstiglaliyyət sok. 6. Bakü, Azərbaycan***Abstract**

One of the most important factors affecting the production costs in textile is the cost of the raw materials that make up the product, and yarn comes first. For this reason, it is important to realize the use of rational yarn, that is, to minimize the amount of yarn waste that occurs during the production stages and to reduce raw material consumption by making maximum use of the yarn entering the production. In this study, the warp yarn wastes that occur in the weaving production process and the ways to reduce them are examined. In addition, in order to reduce the amount of warp waste during weaving, the method of connecting the warp wires to the beam and the mechanism that realizes this have been tested in an improved production environment. Thanks to the application of this method, approximately 15 meters of warp savings per beam can be achieved. The proposed method can be applied for beam formation in warp, size and warp transfer machines.

Özet

Tekstilde üretim maliyetlerini etkileyen en önemli unsurlardan biri ürünü oluşturan hammaddelerin maliyetidir ve bunların başında iplik gelir. Bu nedenle rasyonel iplik kullanımının gerçekleştirilmesi, yani üretim aşamalarında oluşan iplik fire miktarının en aza indirilmesi ve üretime giren iplikten maksimum düzeyde yararlanılarak hammadde tüketiminin azaltılması önemlidir. Bu çalışmada, dokuma üretiminde oluşan çözümlü iplik telefleri ve bunları azaltmanın yolları incelenmiştir. Ayrıca dokuma sırasında çözümlü telef miktarını azaltmak için çözümlü tellerinin levante bağlanması yöntemi ve bunu gerçekleştiren düzene (tertibat) geliştirilmiş üretim ortamında denemesi yapılmıştır. Bu yöntemin uygulanması sayesinde levante başına yaklaşık 15 metre çözümlü tasarrufu yapılabilmektedir. Önerilen yöntem çözümlü, haşıl ve çözümlü aktarma makinelerinde levante oluşumu için uygulanabilir.

Keywords: Weaving production, yarn waste, beam formation, combining yarns with beam**Anahtar kelimeler:** Dokuma üretimi, iplik telefleri, levante oluşumu, iplikleri levante bağlama yöntemi.**1. GİRİŞ**

Tekstil sektörü içerisinde işgücü ve hammadde kullanımının en yoğun olduğu alanlardan biri dokuma kumaş üretimidir. Her endüstriyel alanda olduğu gibi dokuma üretiminde de maliyetlerin düşürülmesi önemli konulardan biridir. Burada üretim maliyetlerini etkileyen en önemli faktör hammaddelerin rasyonel kullanımıdır. İplik dokuma kumaş üretiminde kullanılan hammaddelerin başında gelmektedir. Bundan dolayı üretime giren ipliklerden maksimum düzeyde yararlanmak, dolayısıyla da iplik telef miktarını minimuma indirerek iplik tüketimini azaltmak en öncelikli hedef olmalıdır. Dokuma ürünlerin (ham veya bitmiş kumaşlar, ev tekstili, teknik kumaşlar, halılar, kilimler vb.) üretiminde oluşan iplik ve kumaş teleflerinin bir kısmından geri dönüşüm yoluyla elyaf elde edilirken, bir kısmı da atık olarak ayrılmaktadır [1,2].

Eğirme ve dokuma sırasında telef kontrolü, üretim hızının artmasında, iplik ve kumaş maliyetinin en aza indirilmesinde önemli bir rol oynamaktadır. Farklı telef kontrol yöntemleriyle, bu atıklar daha sonraki işlemler için kullanılabilir veya geri dönüştürülebilir hale getirilmektedir [3].

Buradan da anlaşılacağı üzere tekstil işletmelerinde oluşan atıkların azaltılması ve mümkün olduğunca en aza indirilmesi konusu teknik ve ekonomik açıdan önemli konulardan biridir ve her zaman güncelliğini korumaktadır. Bu makalede dokuma üretim aşamalarında iplik telef oluşumunun analizi

verilmiştir. Ayrıca çözü ve haşıl dairelerinde telef oluşumunun nedenleri kapsamlı bir şekilde araştırılmış ve bunları azaltmak için teknik çözümler önerilmiştir. Dokuma sırasında levendin dibinde açılmayıp teleflere ayrılan çözü uzunluğunu minimuma indirmek için çözü ipliklerini levende bağlama yöntemi önerilmiş ve test edilmiştir.

2. LİTERATÜR İNCELEMESİ

2.1 Dokuma hazırlıkta çözü telefleri

Dokuma üretiminin tüm teknolojik aşamalarında oluşan iplik ve kumaş telefleri ve oluşum nedenleri ayrıntılı olarak açıklanmıştır ve onların hesaplanması için denklemler [4] eserinde verilmiştir.

[5,6.] eserlerinde bu konuyla ilgili nispeten yeni bilgiler ve güncellemeler yer almaktadır. Dokuma üretim aşamalarındaki iplik teleflerini hesaplama yöntemi tüm faktörler dikkate alınarak daha detaylı olarak [7] çalışmada verilmiştir.

Pamuklu dokuma üretim sürecinde iplik telef oluşumu ve teleflerin azaltılması üzerine kapsamlı araştırmalar [8] çalışmada yapılmıştır. Bu çalışmada pamuklu dokuma işlemlerinde iplik telef oluşum nedenleri araştırılmış ve telef miktarının artışı önlemek için üretim aşamaları arasındaki uyumluluğu belirleyen hesaplamalar yapılmıştır. Ayrıca bu çalışmada kesintili seri çözü işleminde oluşan iplik telefleri üzerine deneysel çalışmalar yürütülmüştür.

Çözü atıklarının daha çok kesintili seri çözü haşıl ve dokuma işlemlerinde oluştuğunu tespit edilmiştir [9]. Kesintili seri çözü işleminde telef miktarının yüksek olmasının temel nedeni, çözü işleminde bittiğinde bobin üzerinde ipliğin kalmasıdır. Çünkü çözü işleminin sonunda çağlıktaki bobinlerde ipliğin erken bitme olasılığını önlemek için bobin üzerine gerekli uzunluktan %3 -5 daha fazla yedek iplik sarılır. Yedek ipliğin bu kadar çok olmasının temel nedeni, çözü işleminde için gereken iplik uzunluğunun çeşitli nedenlerle tüm bobinlerde aynı uzunlukta garanti edilememesidir. Bu nedenler, sarım makinesinin tüm kafalarının aynı seviyede ayarlanamaması, iplik numarasına göre düzgünlük, sarım sırasında iplik gerilimindeki düzgünlük, tüm kafalarda üretilen bobinlerin hepsinde sarım yoğunluğunun ve bobinlerin ebatlarının aynı olmaması gibi faktörlerden kaynaklanmaktadır.

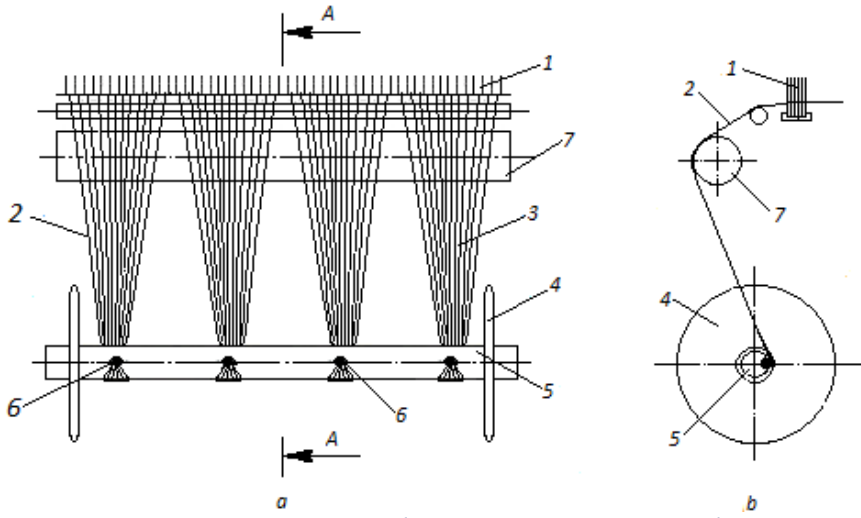
Bobinde kalan iplik miktarını etkileyen faktörler kapsamlı olarak araştırılmış ve kesintili seri çözü işleminde kullanılmak üzere yedek sargılı bobin çeşitleri önerilmiş ve bunların uygulanma yöntemi geliştirilmiştir [10.]

Haşıl işleminde telef miktarının yüksek olduğu proseslerden biridir. Burada oluşan iplik telef miktarı esasen çözü levendindeki iplik uzunluğu, sehpaye yüklenen leventlerin sayısı, haşıl işleminin bitiminde sehpadaki leventlerde ve makinede kalan iplik uzunluğu ile ilgilidir. Haşılama sırasında oluşan iplik telef miktarını hesaplanması, telef miktarını etkileyen faktörlerin incelenmesine yönelik farklı çalışmalar yapılmıştır. Ayrıca [11] araştırmasında iplik teleflerini azaltmak amacıyla haşıl işleminde farklı tip çözü sehpalarında yerleştirilen ayrı ayrı leventlere sarılacak iplik uzunluğunu belirleyen denklemler geliştirilmiş ve pratikte uygulanması önerilmiştir.

Dokuma tezgahında çözü telefleri, yeni çözü levendi yüklenirken kesilen uçlardan, levendi yükleme sırasında gücü telleri ile levent arasında kesilen uçlardan, kopuşları giderme sırasında kesilen çözü tellerinden oluşmaktadır ve levendin dip kısmında kalan çözüden oluşmaktadır. Yapılan araştırmalar [12] ve üretim tecrübeleri ile telef artışını en çok etkileyen faktörün levendin dibinde kalan çözü kısmı olduğu belirtilmiştir.

2.2 Çözü ipliklerin levende bağlanması yöntemleri ve analizi

Dokuma tezgahlarında çözü telef oluşumunu belirleyen faktörlerden biri de ipliklerin levende bağlanması yöntemidir. Haşıl ve çözü aktarma makinelerinde mevcut yöntemde iplikler levende şu şekilde bağlanır. (Şekil 1); Dağıtıcı zikzak tarağın (1) dişlerinden geçen çözü telleri (2) birkaç gruba (3) ayrılır ve her grubun uçunda bu tellerden bir düğüm oluşturulur. Daha sonra bu düğümler levendin (4) gövdesinde (5) bulunan deliklere (6) takılarak iplikler leventle birleştirilir ve sonra sarılma işlemi başlatılır. Sarma işleminin başlangıcında levendin genişliği boyunca gövde üzerinde grup sayısı kadar oval biçimde topaklar oluşur. Sarma işlemi devam ederken gruplardaki iplikler gittikçe birbirine paralel durumda sarılmaya başlar. Bu sırada levendin genişliği boyunca farklı yoğunluklara sahip sarım yapısının alt bölgesi oluşur. Daha sonra tüm iplikler işlemin sonuna kadar paralel biçimde sarılarak normal sarım yapısına sahip bir levent oluşur [12].



Şekil 1. Mevcut yöntemle çözgü ipliklerini levende bağlama şeması: a- önden görünüş, b - A-A yönünde görünüş.

Dokumada kullanımı sırasında levendin normal sarım yapısına sahip bölgesinden tüm iplikler yaklaşık aynı gerilimle, alt kısmından ise farklı gerilimlerle çözülür. Bu nedenle levendin alt kısmından çözülen ipliklerde kopuş sayısı artmakta ve dokuma tezgahının verimliliği düşmektedir. Bu sırada sonuna kadar çözülemeyen çözgü iplikleri ise telef olarak ayrılır. Bir leventte telefe giden çözgü uzunluğu ortalama 3-10 metreye kadar çıktığı yapılan incelemeler sonucunda belirlenmiştir ki bu da mevcut yöntemin dezavantajıdır [12, 14].

Bu dezavantajı ortadan kaldırmak veya telef miktarını en aza indirmek amacıyla mevcut dokuma leventlerin kullanımı sırasında çeşitli yöntemler ve teknik çözümler önerilmiştir. Bu konudaki çalışmalardan biri, tüm ipliklerin levende paralel bağlanmasını sağlamak için önerilen bir yöntemle ilgili patenttir [15]. Bu patentte, çözgü ipliklerini levent üzerinde birbirine paralel olarak bağlamak için uzunlamasına oluklu bir gövde ve içteki boşlukla eş eksenli olarak yerleştirilmiş bir borudan oluşan özel yapıya sahip bir levent kullanılmaktadır. Iplikleri levende sabitlemek için enine kesiti köşeleri yuvarlatılmış bir kama olan bir çubuk şekil inde yapılmış sabitleme aracı kullanılır. Bu çalışmanın en büyük dezavantajı standart dışı levendin kullanılmasıdır.

Yapılan çalışmada, levendin gövdesine sıkıca sarılmış çeşitli detaylardan oluşan bir elastik bağ ile birleştirilmiş bir ara eleman kullanarak bu sorunu çözen bir cihazdan bahsedilmektedir [16]. Ara eleman, alt ve üst sıkıştırma parçalarından oluşan bir bağlantı plakasından oluşur. Bu plakalar, elastik bandın ucundaki bağlantı elemanlarına takılarak bantlarla birleştirilir ve böylece ipliklerin levende bağlanmasını sağlar. Bu tertibatın esas kusuru, elastik bandın karmaşık yapısı ve standart olmayan bir levent yapısının kullanılmasıdır.

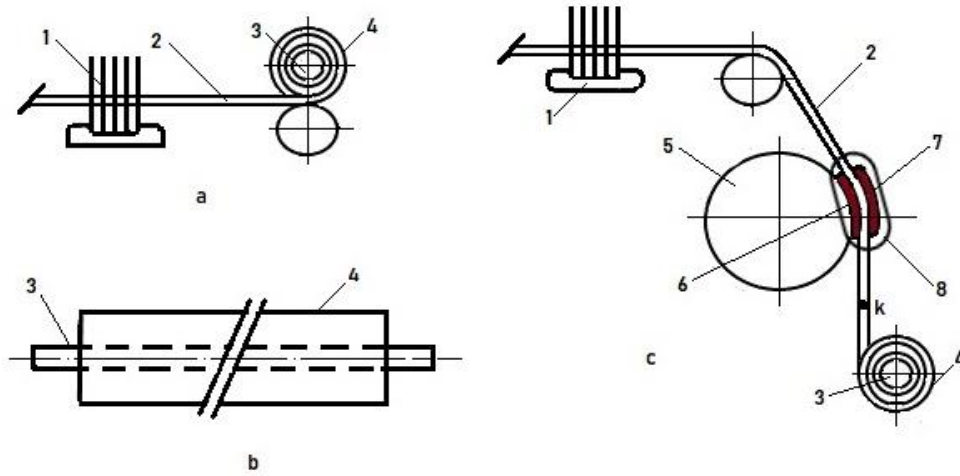
Çözgü ipliklerinin levende doğrudan ara elemanı ile ve yahut gövdesine birleştirilmiş elastik bağ aracılığıyla bağlanma yöntemi ile ilgili yeni bir yöntem geliştirmiştir [17]. Ara eleman üzerine 2-3 tur çözgü ucu sarılan sabitleme plakalarından oluşur ve bu plakalar elastik eleman bantlarının kancalarına takılır veya doğrudan levent gövdesi üzerinde boyuna oluşturulmuş oluklara sokulur. Bu yöntemin dezavantajı, levendin alt katmanlarından açılırken çözgü ipliklerinin yarıklardan dışarı çıkabilme olasılığının ve dokuma tezgahının çalışmasının kesintiye uğramasıdır.

3. Yapıştırma yoluyla ipliklerin levende bağlanması yöntemi.

Dokuma sırasında levendin dip kısmında kalan kalan çözgü uzunluğunu en aza indirmek için çözgü ipliklerinin levende birleştirilmesi için bir yöntem ve bunu gerçekleştiren tertibat geliştirilmiştir [18]. Geliştirilen yöntemi test etmek için, 20 Tex doğrusal yoğunluğa sahip pamuk ipliği, BENNINGER hasıl makinesi, bağlantı şeridini oluşturmak için Rus şirketi Relief-Center tarafından üretilen OfficeSpase çift taraflı yapışkan bant kullanılmıştır. Önerilen yöntemle hazırlanan çözgü leventleri PICANOL Ominplus-Summum dokuma tezgahında test edilmiştir. Test, Gilan tekstil parkında (Sumgayıt-Azerbaycan) pamuklu bez kumaşının üretimi sırasında gerçekleştirilmiştir.

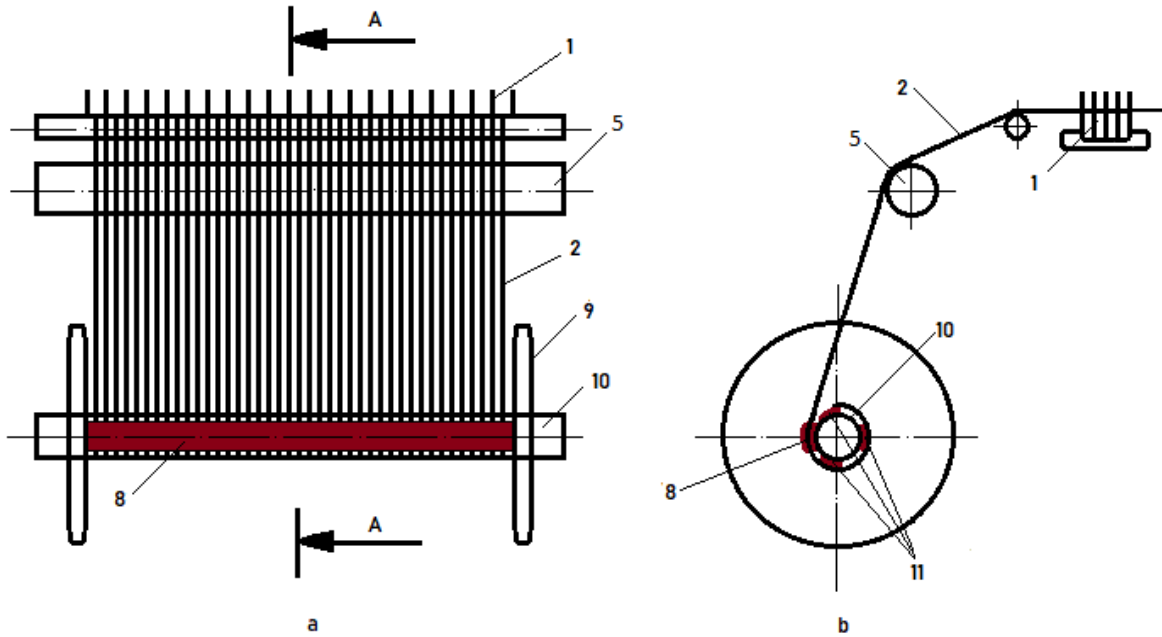
Bu yöntemle göre çözgünün eni boyunca her iki yüzüne simetrik olarak yapıştırılan iki adet çift taraflı yapışkan bant vasıtasıyla çözgünün uç bölgesinde şerit şeklinde bir şerit biçiminde bir bağlantı elemanı oluşturulur. Daha sonra bu eleman levent gövdesine yapıştırılır ve böylece çözgü iplikleri levende paralel bağlanır. Ipliklerin levende sıkıca tutunmasını sağlamak için, levendin genişliği boyunca gövde

yüzeyine aynı türden birkaç yapışkan bant yapıştırılır. Yapışkan bant olarak genişliği 50 mm'den az olmayan çift taraflı bant kullanılmaktadır.



Şekil 2. Ara eleman oluşumunun şematik görünümü: a - sargı oluşumu, b - sargının uzunlamasına görünümü, c - ara eleman oluşturma süreci.

Yöntemin uygulanması şöyle açıklanabilir. Bağlantı elemanı oluşturmak amacıyla önce makinenin on tarak dişlerinden (1) geçirilen çözgü ipliklerini (2) çapı 10 mm olan bir silindirik çubuk (3) üzerine 4-5 tur sararak bir sargı (4) oluşturulur (Şekil 2a). Sargının yüksekliği levendin genişliğinden (levendin yan kapakları arasındaki mesafe) 15-20 cm daha küçüktür. Sonra haşıl makinesinin çekme milinin (5) yüzeyine çift taraflı yapışkan bantı (6) yapıştırılır. Daha sonra çubuğun (3) uçlarından tutularak çekilir ve çözgü iplikleri bu bant üzerine paralel şekilde yerleştirilir. Alt bantın (6) bulunduğu yerde ipliklerin yüzeyine çift taraflı üst yapışkan bantı (7) yapıştırılarak aralarındaki çözgü kısmı birlikte yapıştırıcı şerit, yani bir ara eleman (8) oluşturur (Şekil 2b). Ara elemanı elde edildikten sonra levendin (9) genişliği boyunca gövde (10) yüzeyine aynı türden 4 adet yapışkan bant (11) yapıştırılır (Şekil 4b). Ara elemanını levende ile birleştirmek için çubuğun (4) uçlarından tutularak sargı levende doğru çekilir ve ara elemanın alt ucundaki k noktasından (şekil 2c) kesilerek sargı ortadan kaldırılır. Sonra ara elemanı ve onun ucundaki iplikler levendin (9) gövdesinin yüzeyine (10) yapıştırılmış çift taraflı yapışkan bantlarına (11) yapıştırılır (Şekil 3).



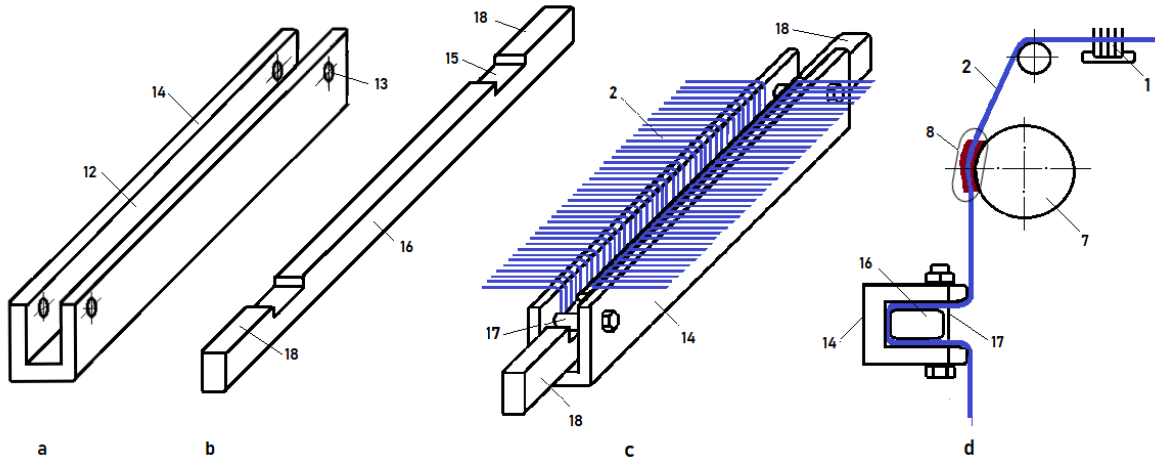
Şekil 3. Çözgü ipliklerini levende paralel bağlama şeması: a-önden görünüş, b-A-A yönünden görünüşü.

4. Sonuçlar ve Tartışmalar

Önerilen yöntem bir üretim ortamında test edilmiş ve beklenen sonuçlara ulaşıldığı görülmüştür. Denemede ara eleman oluşturmada önemli işlemlerden birinin de çözgü ipliklerini birbirine paralel biçimde çekerek çekme silindiri üzerine sermek olduğu belirlenmiştir. Ancak yapılan denemelerde bunu gerçekleştiren bobinin (4) oluşumu ve kullanımı, süreçte bazı zorluklar oluşturmaktadır. Yani ipleri elle çubuğa sarma işlemi çok zaman ve büyük bir özen gerektirmektedir. Ayrıca ara elemanın oluşturulması sırasında sarımı çekme miline göre istenilen pozisyonda tutmak için kullanılan tekerlekli özel bir mekanizmanın hazırlanması da ek maliyet gerektirmektedir.

Bu dezavantajı gidermek amacıyla daha basit yapıya sahip ve kullanışlı bir tertibat yapılmış ve denenmiştir. Bu tertibat iki ana parçadan oluşmaktadır (Şekil 4). Parçalardan biri, tüm uzunluk boyunca bir yuva (12) bulunan ve uç kısımlarında yuvarlak delikler (13) açılmış bir ana plakasıdır (14) (Şekil 4a). Diğeri ise çözgü ipliklerini yuvaya bastırmak için kullanılan ve uç taraflarında sıg bir girinti (15) yapılmış baskı plakasıdır (16). (Şekil 4b).

Tertibatın kullanımı şöyle gerçekleştirilir; Oluklu plaka (14) oluk tarafı üstte olmak üzere tarak önünde dikey olarak yerleştirilir ve taraktan çekilen iplikler (2) paralel olacak şekilde levha (14) üzerine yatırılır. Sonra baskı plakası (16) oluk üzerindeki ipliklerle birlikte yuvaya sokulur ve iplikler oluğun dibine ulaşana kadar bastırılır. Bundan sonra civata (17) oluklu plakanın deliklerine (13) takılarak plakaları birbiri ile birleştirir (Şekil 4 c). Daha sonra baskı plakasının (16) uçlarından (18) tutularak çözgü iplikleri taraktan çekilir ve çekme silindiri (5) üzerine yerleştirilir ve yukarıda anlatıldığı gibi ara elemanın elde edilmesi işlemi gerçekleştirilir, yani üst yapışkan bant (7) yapıştırılır ve bantlar birbirine bastırılır. Bu esnada, çözgü ipliklerinden sarkan çekme tertibatı, çekme milinin altında serbest bir konumdadır (Şekil 4d). Buna göre, çekme düzeneğini çekme miline göre istenen konumda tutmak için herhangi bir ek mekanizma kullanılmasına gerek yoktur. Çünkü bu, tertibatın kendi ağırlığının etkisi altında gerçekleştirilir. Üretim ortamında yapılan deneme çalışmaları, gövde yüzeyine yapıştırılan 3 bantlı dokuma levnedinin en az 5 defa kullanılabileceğini göstermiştir. Ancak bundan sonra, ipliklerin levende bağlanma kalitesinin bozulma ihtimalini önlemek için gövde yüzeyindeki kullanılmış bantlar çıkarılır ve yenileri yapıştırılır.



Şekil 5. Çözgü ipliklerini çekme tertibatı ve uygulanması. A-oluklu plaka, b-baskı plakası, c-çözgü ipliklerin tertibatı konumu, d- bağlantı elemanı oluşumu sırasında düzeneğin konumu.

Dokuma sırasında oluşan çözgü telefini azaltmak amacıyla geliştirilen yöntemin [31] ve bunu gerçekleştiren düzeneğin üretim ortamında denemeler gerçekleştirilmiştir. Denemeler sonucunda bu yöntemin, bundan sonraki süreçte uygulanması levne sarımının alt kısmından tüm ipliklerin eşit gerginlikte çözülmesine ve iplik kopuşlarının azalmasına yol açarak tezgâh verimini ve kumaş kalitesini yükselttiği görülmüştür. Ayrıca ipliklerin levne üzerine paralel olarak bağlanmasıyla iplik telefi levne başına yaklaşık 15 metre azaltılabilmektedir.

6. Sonuçlar

Yapıştırma yoluyla çözgü ipliklerinin birbirine paralel olarak levende bağlanması yöntemi ve bunu gerçekleştiren mekanizma geliştirilmiş ve üretim ortamında test edilmiştir. Bu patentli yöntemle göre, çözgü ipliklerinin her iki yüzeyine uç bölge genişliği boyunca simetrik olarak çift taraflı yapışkan bant yapıştırılarak bir bağlama şeridi oluşturulur. Daha sonra bu şerit, yüzeyine aynı türden birkaç yapışkan bantın yapıştırıldığı levnenin gövdesine yapıştırılır ve böylece çözgü ipliklerinin levnele birleştirilmesi sağlanır. Yapıştırma için genişliği 45 mm'den az olmayan çift taraflı yapışkan bant kullanılır. Geliştirilen yöntemin bir sonraki süreçlerde uygulanması levne sarımının alt kısmından tüm ipliklerin hemen hemen

aynı tansiyonda çözülmesine ve iplik kopuşlarının azalmasına yol açarak tezgâh verimini ve kumaş kalitesini yükseltmektedir. İpliklerin levent üzerine paralel olarak bağlanmasıyla iplik telefi levent başına yaklaşık 15 metreye kadar azaltılabilmektedir. Önerilen yöntem çözgü, haşıl ve çözgü aktarma makinelerinde levent oluşumu için uygulanabilir.

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