

MINISTRY OF EDUCATION AND SCIENCE, YOUTH AND SPORTS OF UKRAINE
LVIV POLYTECHNIC NATIONAL UNIVERSITY

**VOCATIONAL
WORK AMONG YOUNG PEOPLE:
FUTURE VISION**

**GOLDEN WINNER
OF THE INTERNATIONAL EXPOSITION
"EDUCATION AND CAREER – 2011"**

Lviv – 2011

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The proceedings of Lviv Polytechnic National University for the international exposition "Education and career – 2011" golden winner highlight the experience of implementation and usage of modern concepts in the sphere of vocational work among young people.

Intellectual training and research centre of vocational and career education, established at the university, provides an educational mission of higher educational institution, the complex approach to best entrants selection, their training for entrance examinations; external testing and helps choose a profession consciously.

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ENTRY

The main ideological and socio-political acquisition of vocational work in Lviv Polytechnic National University during 2010-2011 years is the concept of close contact with our potential students declared and implemented in practice by us. Feasibility of this approach required the usage of alternative forms of vocational work. Modern society is thirsty for the real word of qualified active scientist, for the available scientific and reasonable explanation and interpretation of the huge variety of the environment phenomena. In this regard, Lviv Polytechnic National University builds its vocational activity so as to satisfy the interests of not only school leavers but also 5-6th grade pupils and even school kids. So, in practice we organically, naturally implement the principle of early vocational education and provide intellectual and educational mission of "Lviv Polytechnic" in society.

We entered such a stage of civilization, when personality intelligence and his/her scientific outlook became a commodity in the job market. Nowadays parents cannot "buy" their children a highly prestigious job. It is the aspect of the analysis we start almost all the meetings with parents and students. We hope that the priorities in our vocational work are determined correctly. This is evidenced by a backlash of society resulting in proposals to organize and ideologically lead the schools and centers of public education in the district centers and towns in rural areas. Thus, making vocational work, "Lviv Polytechnic" becomes a part of civil society and declares the readiness for a long-term cooperation. Our task is not to lose the moment and to provide our ideological and educational leadership.

Strategic approaches and conceptual foundations of vocational work in Lviv Polytechnic National University are declared within the Conference decisions of the staff, within the Academic Council decisions and numerous public speeches of subdivisions leaders and media.

Vocational orientation campaign during 2010-2011 years was marked by an increasing number of conducted measures, especially outside Lviv region.

The main purpose of it was to convince the school students' audience and their parents of the fact that our actions are not a single event, which is traditionally carried out by all higher educational institutions before the exams.

The feedback, being resulted in a stream of counter initiatives from the public, clearly shows the timeliness and relevance of the problems being easily considered during the "round" table discussions, disputes of Lviv Polytechnic faculty within the organization of intellectual youth leisure centers activity. With a help of psychological assistance organization in choosing a future profession Lviv Polytechnic began to successfully strengthen intellectual and educational influence

on pupils and students, promoting their spiritual needs and improving vocational education of pupils.

The practice of our work among pupils and students of Mini Technical Academy of Sciences made it possible to find out the specificity and peculiarities of parents' attitudes to their children's teaching in higher educational institutions. In particular, the results of surveys and questionnaires as well as the information exchange through the direct contact with parents indicate that a significant percentage of both students and their parents (nearly 37%) are not convinced of the desirability of obtaining a higher education. This objective situation beyond all doubts is disturbing and requires an immediate solution of a number of new challenges.

1. THE CONCEPT OF VOCATIONAL AND CAREER EDUCATION ORGANISATION AT LVIV POLYTECHNIC NATIONAL UNIVERSITY

Social and economic changes which take place in Ukraine cause the necessity of the content, form and method improvement of pupils preparing for the future career choice. We should consider that the modern job market requires highly skilled workers who can quickly respond to the market dynamic economic environment changes, those who are able to make decisions independently for their future career development and adjust their professional plans in time. The emergence of various types of pre-university training requires both their study and research and the prediction of their impact on the profession choice, on the effectiveness of future professional activity. The purpose of pre-university training is to help applicants to prepare for entrance exams, for the external testing and to make a conscious profession choice.

The development of the preparation for entering higher education institution occurs in a difficult economic and social situation, in the era of creating a new society based on the market economy where the mechanism of competition is available.

There has formed the following preparation tasks for entering higher education institutions in modern society:

- educational training courses;
- specialized classes;
- system "School – University";
- system "College – University";

- vocational education centers;
- tutorials.

Recently, at Lviv Polytechnic National University the preparation content for entering universities includes:

- a set of measures and actions aimed at preparing students for entering university;
- a long process of education and training since childhood to the moment of entering university (the concept of early vocational education).

Vocational work in universities is a branch that is formed on the basis of philosophy, sociology, pedagogy, psychology and medicine, etc. By its methods and content it is psychological and pedagogical, by sphere of activity – social and its results appear in the economic, cultural and educational social life.

Since 2010, the organization of vocational and career education at Lviv Polytechnic National University is the simultaneous implementation of such approaches as:

- the theory of professional life types;
- motivation theory;
- individuality theory.

The characteristic feature for each phase of the individual development according to the theory of professional life types is the manifestation of a career type dominant, the presence of the highest peak of creativity periods associated with a professional efficiency.

Within the concept of personality age-vocational education the key phases of personality creation are:

- diverse child preferences and abilities ;
- playing vocational education at preschool age;
- socially useful work, vocational education and labor training of primary school children;
- polytechnic (technological) education, production work and professional propaganda in adolescence;
- consultations (including rapid ability diagnosis);
- vocational education, youth professional adaptation;
- qualification upgrading, re-qualification and re-vocational re-education in adulthood.

These approaches are in favour of common types, schemes, professional human life patterns.

The basis of the motivation theory concept constitutes motivation-hygiene theory of work satisfaction, the model of “valence – waiting – force”, the concept of necessity for achievement, the theory of hierarchical needs, on the basis of which

the psychological classification of occupations was built. The theories mentioned above provide a conscious and motivated choice of professions.

Future career choice is rational if a chosen profession promotes person's priorities and their understanding of themselves – it is the ideological basis of the individuality theory or self-development. Within it the professional development is considered as the process of formation and growth of each individual self-development. We should take into account the specific person's self-consciousness, their perception and self-appraisal as a subject of professional self-determination, self-esteem of individual peculiarities in the manifestation of own personality.

An extremely important role defines the analysis of the ability to the skills of psychological sphere of a personality with psychological diagrams of various professional activities. Means of vocational education should encourage students to the conscious and adequate, to the subjective and objective conditions of life solving practical questions about directions, ways and means of own professional self-determination. Therefore, vocational education is the scientific and practical system of individuals training for conscious professional self-determination, which contains the following components: professional information, professional consultation, professional selection and professional adaptation.

Conscious choice of profession can be done only on condition of deep motivation, when school leavers are aware of the importance of work by the chosen profession, properly estimate their physiological capabilities and the content of the profession that they will perform in the future.

Vocational work at Lviv Polytechnic National University is treated as a vocational and career education because the graduates of I-II level of accreditation are vocationally-oriented and consider future careers opportunities.

Thereby there are changed approaches to the characteristics and structure of vocational work at Lviv Polytechnic National University. There begins the implementation of the measure set of the youth vocational and career education in practice.

The functions, content and methods of practical implementation of vocational education are being changed in psychological and pedagogical practice, in the center of which a personality is its subject and object.

Thus, we can provide such a modern definition of vocational and career education:

a) a set of goal-oriented performance of forming impacts that provide the orientation of the subject on an activity in historical, social, economic and psychological fixed forms and methods of activities on the basis of the formed personal and professional qualities;

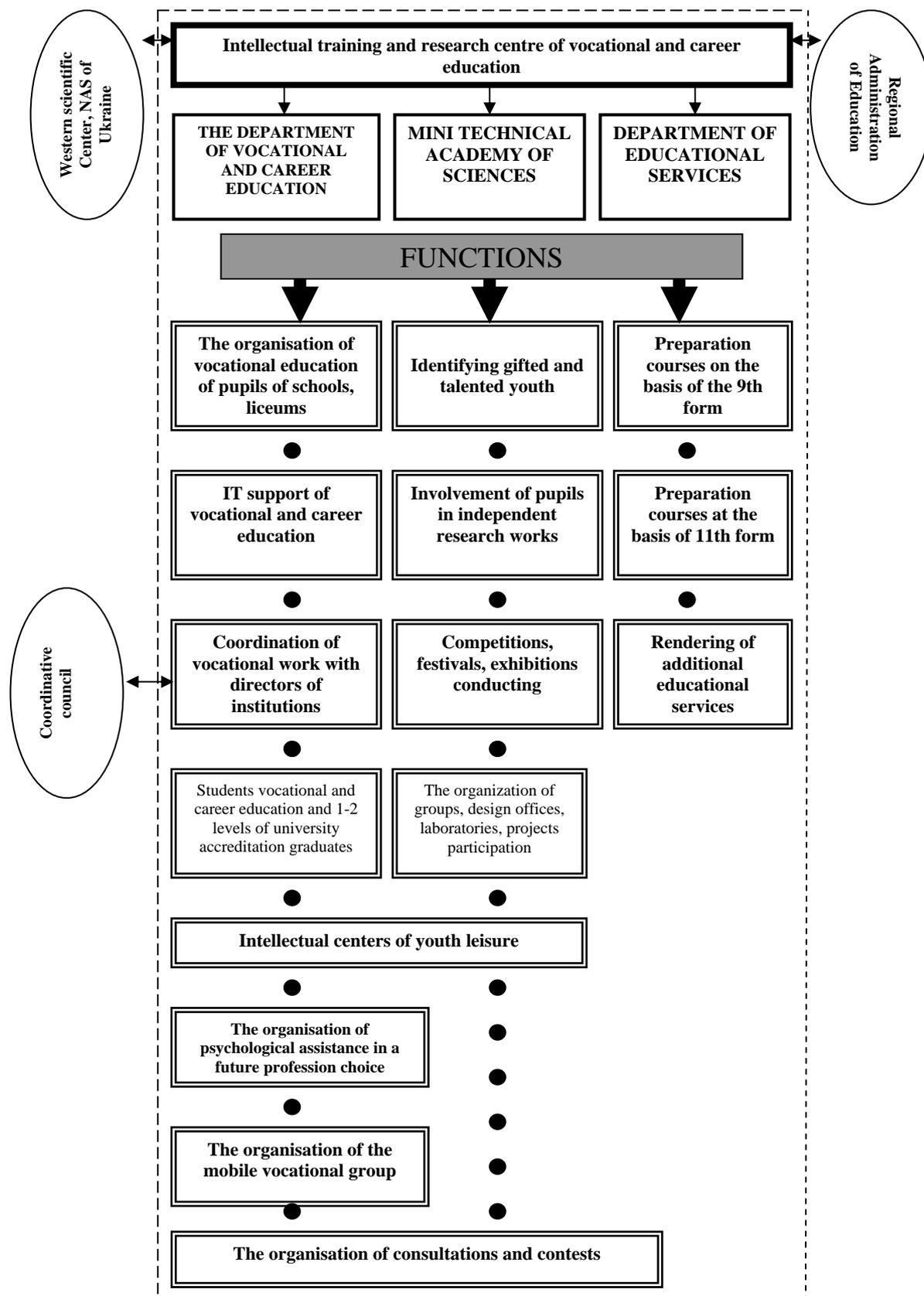
- b) the system, based on the psychological aspects of the human activities, where the problems of forming and providing of motivational and operational components activity are being solved due to the choice of a profession;
- c) the system that has a dialectic development and correlation of its elements.

2. INTELLECTUAL TRAINING AND RESEARCH CENTRE OF VOCATIONAL AND CAREER EDUCATION

There is formed Intellectual training and research centre of vocational and career education (ITRCVCE) at Lviv Polytechnic National University for full implementation of the latest approaches to vocational and career education of the youth at the contemporary level of social development (see picture 1).

The center was established to:

- strengthen intellectual and educational influence of Lviv Polytechnic on students and pupils, promote development of its spiritual needs, popularize scientific knowledge and also to improve vocational education of 9–11 form pupils and vocational education of students and graduates of I–II levels of university accreditation;
- to identify gifted and talented youth for its involvement in the research and inventive work and university study;
- to provide paid educational services to population in the sphere of goal-oriented educative, training, educational and methodological activity in order to prepare secondary school-leavers, 9–11 form pupils of Lviv and western region of Ukraine to the external testing (ET), as well as to the entry and further studying at Lviv Polytechnic University;
- to accomplish a set of measures for providing early vocational education among pupils of Lviv and Western region;
- to improve the forms of cooperation with the network of secondary schools and I–II levels of accreditation universities in order to involve talented, vocationally-oriented youth in the studying at Lviv Polytechnic;
- to create an atmosphere of the cult of knowledge and science in modern society.



Pic. 1. The structure of the intellectual training and research center of vocational and career education

2.1. The department of vocational and career education

To ensure the permanent ideological and informational presence of Lviv Polytechnic in youth group of students the department of vocational and career education together with Mini technical Academy of Sciences organizes the work of youth leisure intellectual centers by organizing educational activities which:

- contribute to meeting the demands of pupils in professional self-determination;
- carry out a set of measures of early vocational education;
- ensure the functioning of regular round table meetings, talks and meetings with leading figures of science and technology to enhance the scientific outlook, intellectual development of young researchers and encourage their independent research activities.

The subjects of round table meetings are aimed at Centre listeners and pupils learning of the knowledge complex about physical and chemical natural phenomena, about a human, society, artificial intelligence, moral and ethical principles of a modern scientist.

2.2. Psycho-diagnostic assistance in choosing a future profession

The progress of professional activity is mainly determined by the stage of individual choosing of a future profession, which coincides with training in senior forms of secondary school.

Pedagogical ensuring of pupils' professional self-determination involves creating a comprehensive system of educational work aimed at identifying and developing capacities of individuals, the disclosure of their motivational sphere, creating conditions for personal activities which are essential in solving an important life problem.

Thus, active functioning of the sector of psychological assistance in choosing a future profession is provided. Recognition of individual and psychological features of personality using a variety of diagnostic procedures since the ancient civilizations has always been an integral part of social life of a lot of peoples.

The evolution of scientific ideas concerning psychology and its research methods has required the necessity of strict compliance during the conduction of diagnostic operations, necessary correlations between the situational variables and reaction parameters within the objective paradigm of behaviorism or between the situation and its objective and way in cognitive psychology. These operational regulations became the basis of test methods that have begun to be used by the

department of vocational and career education of Lviv Polytechnic. The characteristic features of methods used in dealing with pupils, students of higher education institutions of I-II level of accreditation and their parents are:

- the situational aspect – accenting current circumstances and the specific situation of a personality's life;
- a set of aspects – the usage of various sources of information about a personality with an emphasis on biographical information, individual dynamics and history of mental development;
- idiomatic graphics ability – a special attention to unique, related to a given personality, characteristics and features, for which there are no ready template fixing schemes, calculation, interpretation;
- individualization – an unformalized and not standardized, but adapted to particularities of a given specific future university entrant, method of obtaining and analysis the empirical data;
- interactivity – active cooperation with both psychologist and future university entrant in the way of individual conversation;
- intuition – the dominant load in obtaining information and its interpretation are not based on the standardized procedures and established guidelines for data analysis but insight of a researcher.

There are being realized all possible types of university training at Lviv Polytechnic National University. The practice of our work among school-leavers has shown a specific and unique attitude to the higher education institution study. In particular, the results of surveys and questionnaires, direct contact with parents indicate that a significant percentage of parents and pupils are not convinced of the expediency of higher education obtaining. This situation has led to the formulation of the following tasks:

1. To analyze the matter of the senior pupils training of the future choice problem in the pedagogical theory and work practice of public schools.
2. To substantiate and verify the organizational and pedagogical conditions of forming the readiness of choosing engineering and technical professions among seniors in interaction with secondary and higher technical education institutions.
3. To develop recommendations for the pupils' development of choosing technical careers readiness.

This project was set up in December, 2010. The methodological basis for the research is the philosophical positions about the dialectical connection of objective activity phenomena, the mechanisms of transformation of social values into personal achievements. Another direction of the research is the analysis of principles of determination and the attitude between self-determination and personal

development in specific age periods for certain groups of young people. The permanent and objective monitoring of the processes mentioned above, its analysis and mathematical processing of obtained results using modern techniques, soon will give a chance to be ready for the implementation of grounded prediction of job market demands.

In addition, the practical importance of the expected research results is defined by the schedule for introducing the practice at secondary schools of a series of elective courses «Your future profession». Training for such a course should become an integral element of the subject and practical environment in which educational work aimed at the formation of seniors' choosing future profession readiness is being realized.

2.3. Mini Technical Academy of Sciences (MTAS)

Structural subdivision of Mini Technical Academy of Sciences of school students works at Lviv Polytechnic National University (henceforce – the University) with the assistance of the Main Administration of Science and Education Department of Lviv regional state administratiton in order to expand scientific outlook of pupils, to develop pupils' intelligence, to identify, develop and support gifted youth. The main direction of Mini Technical Academy of Sciences activity (henceforce – MTAS) of pupils is research and experimental direction, which involves pupils (school-leavers, students) into research, experimental, design and inventive work in various fields of science, technology, art and culture under the guidance of scientists, teachers, engineers and technical staff of the University.

2.3.1. The structure of MTAS

The structure of MTAS includes subdivisions of educational and research institutions that add to MTAS services departments, offices, centers, laboratories, permanently working and temporary exhibitions, and specialized health camps, libraries, and specialized workshops to provide study in the following sections:

- Institute of Architecture, Design and Restoration of works and arts;
- Institute of Building and Environmental Engineering;
- Institute of Geodesy, Cartography and regulation for the distribution of land;

- Institute of Engineering Mechanics and Transport;
- Institute of Ecology, Chemistry and Chemical Technologies, Food technologies and Engineering;
- Institute of Applied Mathematics, Applied Physics, Materials Science and Information technologies;
- Institute of Telecommunications and Electronic Engineering:
 - radio electronics;
 - micro- and nano- electronics;
 - optoelectronics;
 - biotechnical and medical apparatus and systems;
- Institute of Computer Science and Information Technologies:
 - programmed engineering;
 - computer science;
 - publishing;
 - system analysis;
 - applied linguistics;
- Institute of Power Engineering and Control Systems:
 - complex methods of calculation of linear and non-linear circles;
 - electromechanical systems of automation and electric drive;
 - automation and computer integrated technologies;
- Institute of Computer Technologies, Automation and Metrology:
 - information security;
 - metrology and measuring equipment;
 - instrument engineering (devices for precise mechanics).

Logical-structural scheme of MTAS functioning is presented in Pic. 2.

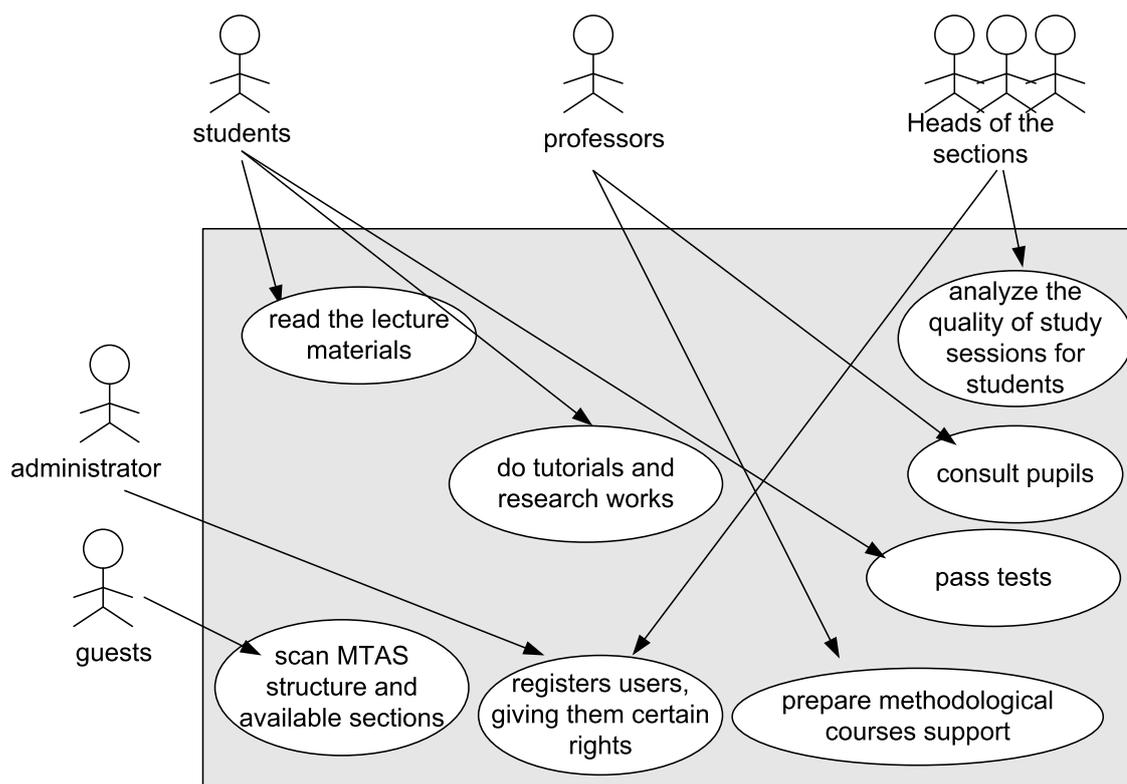
We see such consumers and producers of information on this scheme as:

Producers

- professors – prepare methodological courses support, consult pupils;
- administrator – registers users, giving them certain rights;
- heads of the sections – advertise on sections schedule.

Consumers

- students – read the lecture materials, pass tests, do tutorials and research works;
- heads of sections – analyze the quality of study sessions for students;
- guests – scan MTAS structure and available sections.



Pic. 2. Logical-structural scheme of MTAS functioning of Lviv Polytechnic National University

2.3.2 Goals, objectives and principles of the activity

MTAS – the constantly acting scientific and public project, which aims to identify and involve talented and promising youth into research and scientific creative work and encourages young people to enter higher education institutions, including Lviv Polytechnic National University.

The main tasks of MTAS are:

- implementing the government policy in the field of school education;
- identifying, developing and supporting gifted youth, fostering its creative potential, developing scientific, research and experimental activities of pupils (school-leavers, students);
- creating conditions for harmonious development of a personality, meeting the demands of pupils in school education, organization of their health, leisure and recreation;
- meeting demands of professional self-determination of pupils according to their interests and abilities;
- forming trainees' (students', apprentices') national identities, active citizenship, motivation, healthy lifestyle;

- providing general secondary education institutions with methodological assistance for talented students;
- organizing educational activities.

The principles of MTAS:

- the enrolment of pupils (8–10 grades) is carried out within a school year;
- free of charge training.

2.3.3. The organization of the educational process in MTAS

The educational process in MTAS is carried out differentially (according to age, individual abilities, interests, aptitudes, abilities, state of health) using different organizational forms of work: group work, club work, lessons, lectures, individual lessons, conferences, seminars, courses, reading, quizzes, competitions, contests, reviews, exhibitions, recreational meetings, excursions, practical work in laboratories, workshops as well as using other forms, including full-time-correspondence course and distant learning.

MTAS may involve out-of-school, general secondary, vocational, higher education institutions, other institutions and organizations in the participation in organizational and public measures.

Pupils of 8–10 grades of general education secondary schools as well as vocational schools of various types, students of higher education institutions of I–II accreditation levels in MTAS who have experience in research, search and experimental work on different scientific, technology and art issues and participate in scientific expeditions, national and international scientific programs and projects, public scientific measures (competitions, tournaments, conferences) and have their works published in various printing press are enrolled. The enrolment in MTAS can be carried out through competitive examination (but not obligatory), conditions of which are being developed by the University.

The enrolment of pupils in MTAS can be carried out during a school year (as far as making up of clubs, sections, groups, and other creative associations will come to an end).

There are enrolled pupils of 8-10 grades over the age of 14 in MTAS.

The academic year in MTAS begins on October, 1. The duration of the academic year is set by the Ministry of Education, Youth and Sports of Ukraine.

Making up clubs, groups, and other art associations is carried out during the period from September 1 to 30, which is considered to be the work time of club leader, group or another MTAS creative association.

Clubs, groups, and other MTAS creative associations are classified into the following levels:

- Primary (initial) – these are creative unions where schoolchildren (pupils and listeners) get general knowledge of the underlying principles of science, acquire skills of research, search and experimental work, take part in writing creative summaries, consider the topic of their search, experimental and research work;
- Principal (main) – these are creative unions where schoolchildren (pupils and listeners) get knowledge, practical skills and skills for independent acquisition of scientific and technology knowledge over the volume of educational programs of general secondary educational institutions; develop their interests and aptitudes to scientific research, creative work concerned with certain themes; extend the knowledge of basic subjects; meet demands in vocational orientation; actively take part in practical, scientific expeditions, contests, exhibitions, competitions, meetings with scientific workers, inventors, artists; present their creative scientific works;
- Higher (superior) – these are creative unions concerned with the interests of schoolchildren (pupils and listeners) who carry out research, search and experimental work on different scientific, technology and art issues; take part in scientific expeditions, national and international scientific programs and projects, public scientific measures (competitions, tournaments, conferences) and have their work published in various printing press.

Sections' work on the basis of educational and scientific institutes of Lviv Polytechnic National University by the annual work plan has been approved by the institution management and the director of Mini Technical Academy of Science of pupils of Lviv Polytechnic National University.

In order to develop and support sustainable interests of schoolchildren (pupils, listeners), their talents and self-determination for their future profession, MTAS can carry out work together with scientific and research institutions, creative organizations, higher education institutions, create a laboratory for creative, experimental, research work etc.

According to the founder decision on the basis of relevant agreements, MTAS can provide informational and methodological assistance to teaching staff, region educational institutions, youth and public organizations.

According to the results of study, MTAS gives its graduates the certificate of the out-of-school education, the model of which is adopted by the University. MTAS graduates who desire to study at the University are enrolled in for study under the enrolment rules, approved by the University Admissions Department.

Traditionally, educational process in MTAS was held in full-time education. In order to attract wider range of pupils of the school year 2009, distant learning is implemented, which provides processing and holding of teaching material on-line within MTAS informational and learning environment and presentation of creative and scientific works to a teacher.



Pic. 3. The representative of sponsoring company "STEC -Computer" Shakhovskyy R.I., prorector prof. Fedasyuk D.V., dean of the basic higher education Shakhovska N.B., IKNI (Institute of Computer Science and Information Technologies), prof.. Medykovskyy M.O., INNTSPKO (Informational Educational and Scientific Center of Computer Postgraduate Education), director Zakharyash O.S. at the presentation of listeners' scientific works of the section «Computing»

It should be stated that MTAS representatives participate in the second round of contest «Applicant-2011». In addition to their set tasks (exercise programming, website development, database design, etc.), they have also created a presentation about their work and made a brief description of the results in front of an audience.

2.3.4. The functional description of the MTAS informational and learning environment



Information and learning environment (site) of Mini Technical Academy of Science (MTAS) (<http://vns.lp.edu.ua/moodle>) is designed for organizing active cooperation with 8–10 grade pupils of secondary and specialized schools in order to attract them to study at Lviv Polytechnic. It provides for organizing the study of MTAS listeners in full-time education or distant learning. Studying in MTAS includes class attendance or educational modules home study, consulting and group discussion of problems with teachers and other listeners, carrying out of a project with its compulsory presentation at University departments.

Information for full-time education about groups' educational curriculum, official reports, etc. is going to be placed on the website.

The site will contain theoretical material, tests for given material and the schedule of project presentation for distant learners. There is news section and forum for both forms of studying.

The site structure:

- news;
- forum;
- theoretical material;
- tests;
- MTAS listeners 'offers;
- projects.

The view of the information and learning environment homepage is presented in Pic. 4.

Основне меню

Новини сайту

Мала технічна академія наук учнівської молоді функціонує при Національному університеті "Львівська політехніка" з метою розширення наукового світогляду учнівської молоді, розвитку інтелекту школярів, виявлення, розвитку і підтримки обдарованої молоді. Основним напрямом діяльності Малої технічної академії наук учнівської молоді є дослідницько-експериментальний напрям, у різних галузях науки, техніки, культури і мистецтва під керівництвом вчених, педагогів, інженерно-технічних працівників Університету.



У Малій технічній академії наук учнівської молоді Національного університету "Львівська політехніка" працюють такі секції та відділення:

Вхід

Логін:

Пароль:

Вхід

Створити новий облік
запис учня
Lost password?

Наші контакти
mtan(at)polynet.lviv.u.

Секції

Мала технічна академія наук

- Архітектури, дизайну, реставрації творів мистецтва;
- Будівництва та інженерії докiлля;
- Геодезії, картографії та землеустрою;
- Інженерної механіки, транспорту, зварювання;
- Екології, фармації, біотехнології, хімічної технології, харчових технологій та інженерії;
- Прикладної математики, прикладної фізики, інженерного матеріалознавства, інформатики;
- Телекомунікацій та електроніки:
 - радіоелектроніки,
 - мікроелектроніки,
 - оптоелектроніки,
 - біотехнічні та медичні апарати та системи;
- Комп'ютерингу:
 - програмна інженерія,

1

Pic. 4. The information and learning environment homepage of Mini Technical Academy of Science of Lviv Polytechnic National University.

From the home page user can switch to the required section. The whole further sections description will be held by the example of the "Computing" section.

To ensure information security and user identification on the MTAS website the registration form is provided. The view of the registration page is presented in Pic.5.

Мала технічна академія наук НУ ЛП

Ви не пройшли ідентифікацію (f

МТАН НУЛП Зайти на сайт

Українська (uk)

Вхід на сайт

Увійти на сайт
(Cookies повинні бути дозволені у Вашому браузері) ⓘ

Логін

Пароль **Вхід**

На деякі курси передбачено гостьовий доступ

Зайти гостем

Забули ім'я або пароль?

Допоможіть потрапити на сайт

Ви вперше на нашому сайті?

Для доступу до курсу Вам необхідно створити обліковий запис на сайті.
Покрокова інструкція:

1. Заповніть новий обліковий запис (форму, що містить дані про Вас).
2. На Ваш e-mail буде відправлено листа .
3. Прочитайте лист і зверніться за посиланням, зазначеним у ньому.
4. Обліковий запис буде підтверджено й система Вас ідентифікує
5. Оберіть курс, що зацікавив Вас.
6. Якщо для запису на курс потрібно знання кодового слова, викладач повідомить його Вам
7. Отже, у Вас з'явився повний доступ до курсу: із цього моменту Ви будете користуватися своїм ім'ям та паролем, щоб потрапити на його

Створити новий обліковий запис учня

Ви не пройшли ідентифікацію (Вхід)

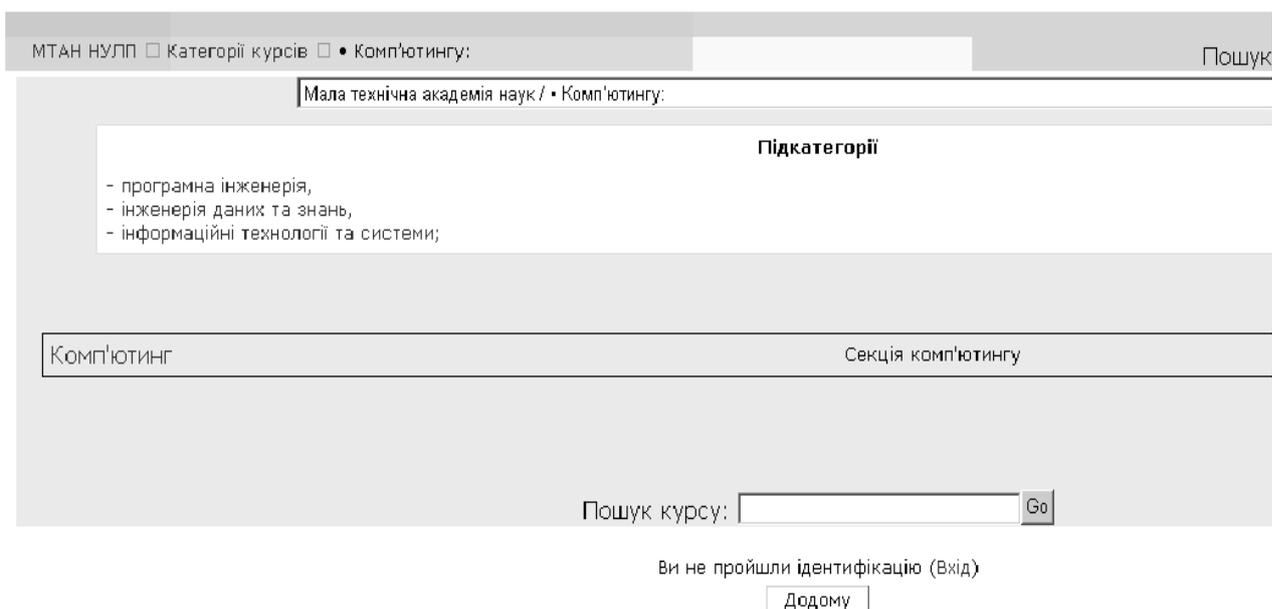
Pic. 5. Registration page

Then move on to the review sections description page. The whole further sections description will be held by the example of the "Computing" section.

The structure of the "Computing" section

The list of the directions of the «Computing» section of Institute of Computer Science and Information Technologies of Lviv Polytechnic National University is presented in Pic.6.

Мала технічна академія наук НУ ЛП: Секції



Pic. 6. The list of the directions of the "Computing" section

After selecting a direction, a user gets access to the materials:

- lectures;
- knowledge tests;
- revision of the progress in MTAS study ;
- list of scientific works that are offered to fulfil;
- forum which provides an opportunity to discuss a particular problem with a teacher as well as with other pupils of MTAS ;
- events MTAS calendar.

2.3.5. The description of distance learning process

MTAS pupils' distance learning has the following stages:

- elaborating the theoretical material presented in MTAS information and learning environment at a certain direction;
- passing the test for the consolidation of the theoretical material;
- conducting scientific work or practical work with compulsory presentation;
- consulting teachers.

Theoretical course includes not only specialized courses in a section (for example, for «Computing» – computer studies, programming), but also fundamentals (mathematics, physics).

The list of the theoretical material topics that has not been processed by a pupil yet is presented in Pic. 7.

Комп'ютинг Ви зайшли під ім'ям probe user

МТАН НУЛП CS

Люди
Учасники

Ресурси курсу
Ресурси
Тести
Форуми

Search Forums

Advanced search

Керування
Оцінки
Profile

Доступні курси
Комп'ютинг
Всі курси ...

Заголовки тем

Новини
Форум

1 Поняття інформації та алгоритму
Поняття інформації та алгоритму
Тест

2 Операції введення-виведення в C++
Операції введення-виведення в C++
Тест 2

Останні новини
Модуль з четвер 25 Червень 2009 11:57
Повний звіт щодо діяльності за останній час
Із часу Вашого останнього входу нічого нового не відбулося

Новини форуму
25 Чер 11:38
Адміністратор Користувач
Служачам відділення
Комп'ютинг
ще...
Older topics ...

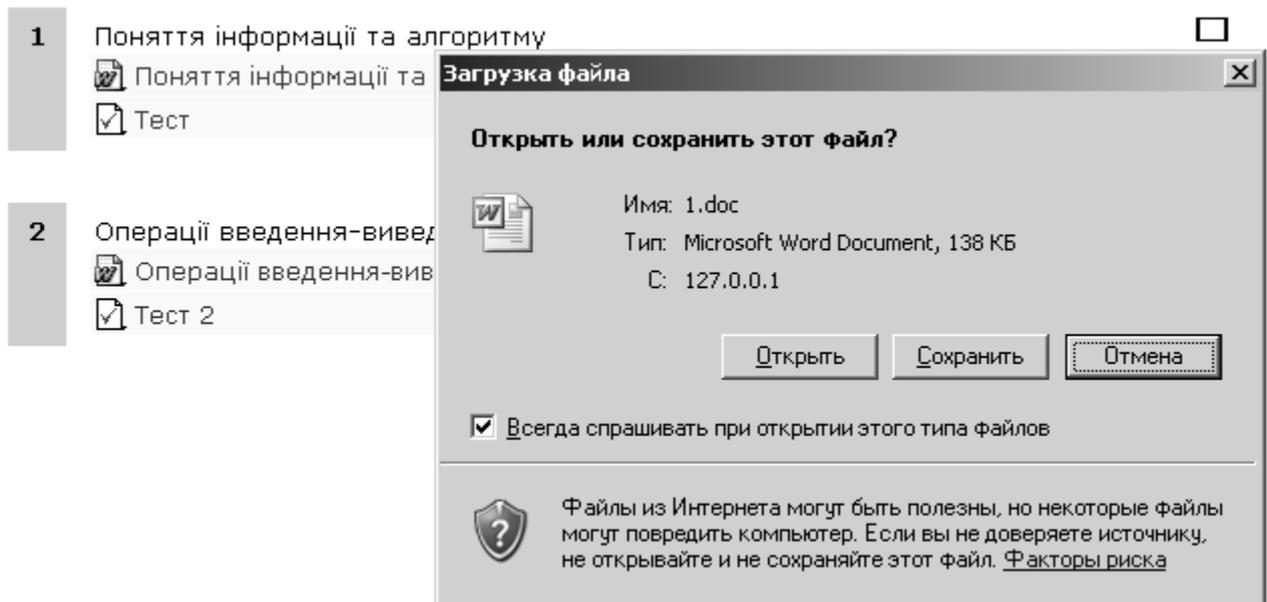
Надходжувані події
реєстрація
четвер, 9 Липень (11:55)
Переглянути календар...
Нові події...

Календар
 Червень 2009

Pic. 7. The list of the theoretical material topics that has not been processed by a pupil yet

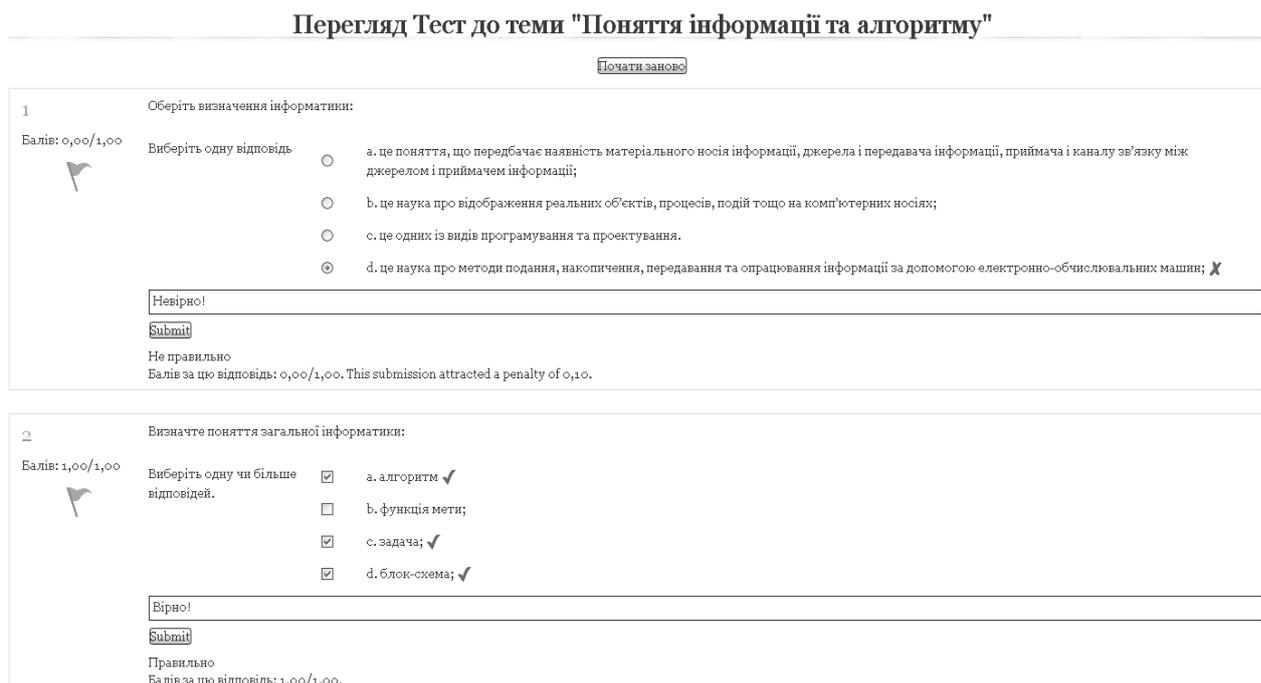
Getting to know material is by downloading a lecture text (Pic. 8).

After the theoretical material handling a pupil has an opportunity to consolidate their knowledge by passing a test. At that there are recorded a theme, a number of attempts, an estimate obtained.



Pic. 8. Downloading a file with a lecture text

A test result is presented in Pic. 9.



Pic. 9. A test result of a passed topic

A teacher as well as a pupil can control test results (Pic. 10).

Another important feature of distant learning is the possibility of pupil's consulting the teachers of the Institute of Computer Science and Information Technologies in real time. For this reason the forum is used (Pic. 11).

Тест до теми "Поняття інформації та алгоритму"

Почати заново

Summary of attempt

Питання	Статус	Балів
1	Answered	0,00
2	Answered	1,00
3	Answered	1,00
4	Answered	1,00
5	Answered	1,00
6	Answered	1,00

Submit all and finish

Pic. 10. The test results



Питання по мові C

Белзюк Руслан - Неділя 30 Січень 2011 08:40

Чому в мене, коли я хочу ввести символ після числа, нічого не зчитується



Re: Питання по мові C

Шаховська Наталя - Понеділок 31 Січень 2011 07:31

Треба очистити вхідний потік. Команда - `fflush(stdin)`

Pic. 11. Pupil-teacher consultation

Next, we will demonstrate the results of creative competitions for Mini Technical Academy of Science listeners.

There is being held the vote among Internet users for the best work after participants' presentation. So, the prints of works are placed on MTAS website (Pic. 12).

- Положення про МТАН НУ ЛП PDF document
- Новини Форум
- Форум
- Комп'ютинг Глосарій

• Конкурсні роботи

Голосування за кращу роботу на сайті ІКНІ:

http://ikni.cs-tm.megabyet.net/poll_mtan2010

- Ханас Дмитро/Веб-сайт "Малатко" Сторінка
- Кіт Павло/ Веб сайт Польська суботня школа Сторінка
- Шаховська Христина / Програма Калькулятор file
- Шаховська Христина / Анімація file
- Шаховська Христина/ Сайт-тест "Що ти за людина?" file
- Лагода Софія / Створення малюнків та анімацій в графічному редакторі Photoshop file
- Лагода Софія / Створення малюнків та анімацій в графічному редакторі Photoshop (2) file
- Купранець Роман / Моделювання життя простих організмів file
- Коваль Андрій / Програма-гра Up Memory file
- Белзюк Руслан/Проект ПроУПА Сторінка
- Іванюк Марія / Веб-сайт Моя школа-дім знань file
- Дунець Роман / Тривимірне моделювання за допомогою 3Ds Max file
- Дунець Роман / Тривимірне моделювання за допомогою 3Ds Max (2) file
- Климковський Тарас/Сайт Стрийської загальноосвітньої школи №7 Сторінка
- Гулка Богдан / Сайт школи №27 file
- Каськун Михайло / Гра file
- Погорєлова Анна (1) file
- Погорєлова Анна (2) file
- Бойчук Григорій / Онлайнвий гірськолижний курорт "Буковель" Сторінка
- Абрамова Ірина / Сайт Шкільний психолог file
- Підкова Юрій / Математичний калейдоскоп file
- Плюта Тарас / Рекламний постер file
- Віленов Роман file
- Прач Юлія / Сайт Lemberg file
- Гончар Дмитро / Сайт СЗШ №34 ім.М.Шашкевича м.Львова file
- Нестор Дмитро/Анімація file
- Рондяк Наталя/Анімація file
- Василичин Надія/Флеш-презентація file
- Возняк Олег/Сайт Delphi Pro Сторінка
- Степура Наталя file
- Вонсик Євген/Програма "Сонячна система" file
- Стефанишин / Анімація file
- Гончар Дмитро/ Сайт Львівської дитячої залізниці Сторінка

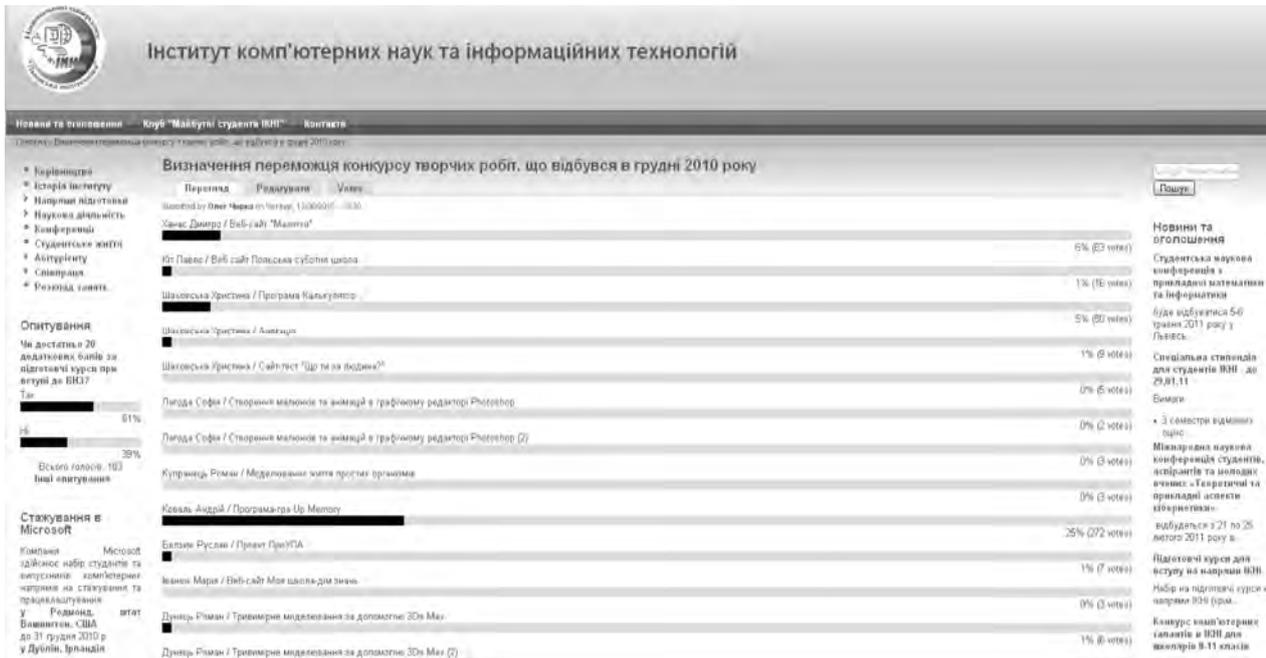
Pic. 12. The list of MTAS representatives

There is a possibility of works' review (Pic. 13).

The screenshot shows a Moodle interface. On the left, there is a list of MTAS representatives, including names like Ханас Дмитро, Кіт Павло, Шаховська Христина, and others. On the right, a window titled 'Сонце' (The Sun) is open, displaying a review of a work. The review text discusses the Sun as a central star in the solar system, its composition, and its role in providing energy to Earth. A small image of the Sun is visible on the right side of the review window. Below the review, there are navigation buttons like 'Пошук', 'Відмінити', 'Відповісти', and 'Повірити'.

Pic. 13. The review of works of MTAS representatives

Vote for works is held on IKNI (Institute of Computer Science and Information Technologies) website (Pic. 14).



Pic. 14. Vote for the best work



Pic. 14. Vote for the best work (continuation)

The forum for communication with applicants, discussion of the entry peculiarities etc. is placed on IKNI (Institute of Computer Science and Information Technologies) website (Pic. 15).



Головна та оголошення | Клуб "Майбутні студенти ІКНІ" | Контакти

Головна | Клуб "Майбутні студенти ІКНІ"

Клуб "Майбутні студенти ІКНІ"

Відзначити всі форуми прочитаними

Форум	Тем	Повідомлень	Останнє повідомлення
Форум			
Правила прийому правила прийому, минулорічні результати вступної кампанії, особливості подавання документів та проходження процесу вступу тощо	5	18	Вступ на ... Автор: Наталія Шаховська 07/12/2011 - 19:34
Поради первокурснику кількі студентів про навчання в ІКНІ	1	1	Що зробити ... Автор: Наталія Шаховська 07/12/2010 - 07:21
Напрями підготовки показувати і відомості про напрямки підготовки, а також спеціальності і спеціальні відомості	1	1	відомості ... Автор: Олег Чарко 06/02/2010 - 12:28
Умови навчання та проживання забавне і цікаве оповідання про життя, навчання, методи навчання, інтернет-програми для студентів та можливості спілкування, курси підвищення кваліфікації (додатково в формі), умови проживання в гуртожитках, правила подавання документів	1	1	поселення в ... Автор: Олег Чарко 06/02/2010 - 12:28
Працевлаштування компанії, в яких успішно шукають співробітників, умови проходження практики	1	2	IT-фронт Львова Автор: Олег Чарко 06/02/2010 - 17:05
Наші випускники компанії, в яких працюють випускники, курси випускників, відомості про спеціальності та інститут	1	2	IT-фронт ... Автор: Наталія Шаховська

Опитування
Чи достатньо 20 додаткових балів за підготовчі курси при вступі до ВНЗ?
Так: 61%
Ні: 39%
Всього голосів: 164
Віші опитування

Стажування в Microsoft
Компанія: Microsoft

Pic. 15. The forum of IKNI (Institute of Computer Science and Information Technologies) future students' club

Правила прийому

правила прийому, минулорічні результати вступної кампанії, особливості подавання документів та проходження процесу вступу тощо

Нова тема форуму | Позначити всі теми як прочитані

Тема
Вступ на базі молодшого спеціаліста
Перелік документів необхідних для вступу
Предмети на ЗНО
Вступ на магістра-спеціаліста
дата подачі документів - денна форма навчання - бакалаври

Немає нових повідомлень Hot Thread (No New) Прикріплена тема

Нові повідомлення Hot Thread (New) Закрита тема

Pic. 16. The forum «Future students' club»

2.3.6. Organizing competitions within the system "Olympics" with the usage of automatic sending of messages

There functions the system "Olympics" to improve the quality of communication with pupils and increase the efficiency of contests and competitions for pupils at the Institute of Computer Science and Information Technology. It is developed using SQL Server 2005 and MS Access 2003.

Basic functions of the system:

- I-III level of accreditation education institutions accounting, students take part in competitions organized by Lviv Polytechnic;
- accounting of the competition's participants and their results;
- formation of mailing list and materials for education authorities (provincial and district departments of education);
- forming the mailing list, contests' tasks and results of the competitions for school principals according to the type of school;

код	назва	індекс	населений пункт	Район (обл)	адреса	директор	моб.номер	телефон	e-mail
81	Відділ освіти	82000	Самбір		вул., Лева Галицького, 40	Бонк Орест Едує			
69	Відділ освіти	80300	Жовква		вул., Коновальця, 4	Соловійов Валері			
70	Відділ освіти	80700	Золочів		вул., Івасюка, 12	Бартошик Волод			
63	Відділ освіти	82482	Моршин		вул., Івана Франка, 15	Козарюк Петро І			
71	Відділ освіти	80400	Кам'янка-Бузь		вул., Івана Франка, 14	Чепіль Ігор Евст			
66	Відділ освіти	81520	Городок		вул., Джерельна, 16	Більовський Вол			
73	Відділ освіти	81300	Мостиська		вул., Грушевського, 3	Гачок Осип Іван			
72	Відділ освіти	81600	Миколаїв		вул., Галана, 12	Дубів Богдан Фе			
76	Відділ освіти	80200	Радевів		вул., Відродження, 16	Курило Володим			
60	Відділ освіти	03247	Трускавець		вул., Бориславська, 1	Любик Орест Па			
67	Відділ освіти	82100	Дрогобич		вул., 22 Січня, 41	Марушак Осип С			
109	СШ №92	79069	Львів	Шевченківський	вул. Шевченка 390			2911479, 2	
93	НВК Школа-гімназія "Сихів"	79070	Львів	Сихівський	вул. Хоткевича 48			2222845	
4	СШ №98	79049	Львів		вул. Трильовського 12			2226571, 2	
97	ЛУГГ	79016	Львів	Залізничний	вул. Степанівни 13			2330433, 2	
14	ЛАГ	79013	Львів	Залізничний	вул. С. Бандери 14			2979240, 2	
22	СШ №15	79040	Львів	Залізничний	вул. Патона 7			626022, 62	
20	СШ №45	79060	Львів	Франківський	вул. Наукова 25			630133, 63	
85	ЛФМЛ	79054	Львів	Залізничний	вул. Караджича 29			620068, 62	
6	СШ №72	79066	Львів	Сихівський	вул. Зубрівська 1			2218275, 2	

Запись: 49 із 87

Pic. 17. The form of education institutions accounting

учасники олімпіади													
id	Прізвище	Ім'я	По-батькові	школа	клас	напря	Фізика/іноз	Матем	Укр	Індекс	Адм.од.	Адреса	Телефон
5	Адамів	Андрій	Миколайович			комп'ют	0	2	5			с. Хіднович	
6	Адамів	Андрій	Миколайович	Гусаківська СШ		комп'ют	24	21	16		Гусаків	с. Гусаків	
209	Алексеев	Сергій	Сергійович			програ	4	14	7		Львів	Яворницького 12/19	244-10-25
7	Андрійчак	Микола	Ярославович			комп'ют	10	8	5		Миколаїв	с. Тернопілля, Кармел	
8	Антоняк	Андрій	Петрович			комп'ют	21	11	5		Самбір	В.Великого 4 /61	
248	Афанасьєва	Наталія	Євгенівна	ЛУГГ		філолог	16	14	15		Львів		
9	Бабущич	Юрій	Юрійович			комп'ют	10	17	14		Турка	м. Верхнє	
10	Багрій	Михайло	Якович			комп'ют	11	17	9		Жидачів	м.Журавно,дорошенк	
11	Базюк	Галина	Миколаївна			комп'ют	6	3	9		Яворів	с. Коти,Молодіжна	
12	Бакай	Юрій	Романович			комп'ют	11	14	7		Львів	Городоцька 241 /8	
210	Барчук	Михайло	Миколайович			програ	10	8	11		Броди	Лешнівська 30Ш	80991216286
13	Барчук	Володимир	Миколайович			комп'ют	3	16	8			с. Митиця	
14	Бекеш	Ростислав	Романович			комп'ют	11	16	12		Дрогобич	Пластунів 37	
211	Бендеревські	Руслан	Васильович			програ	8	8	8		Броди	Ширівська	37772
212	Бенедь	Вадим	Віталійович	Нововолинська		програ	24	29	19		Нововолинк		
16	Бик	Роман	Михайлович			комп'ют	2	9	4		Яворів	с.Наконечне,Чернева	
213	Бідак	Наталія	Василівна			програ	18	13	16		Львів	Максимовича 9/68	223-08-89

Запис: [кнопки] із 274

Pic. 18. Form for accounting of the competition's participants and their results

Запрошення

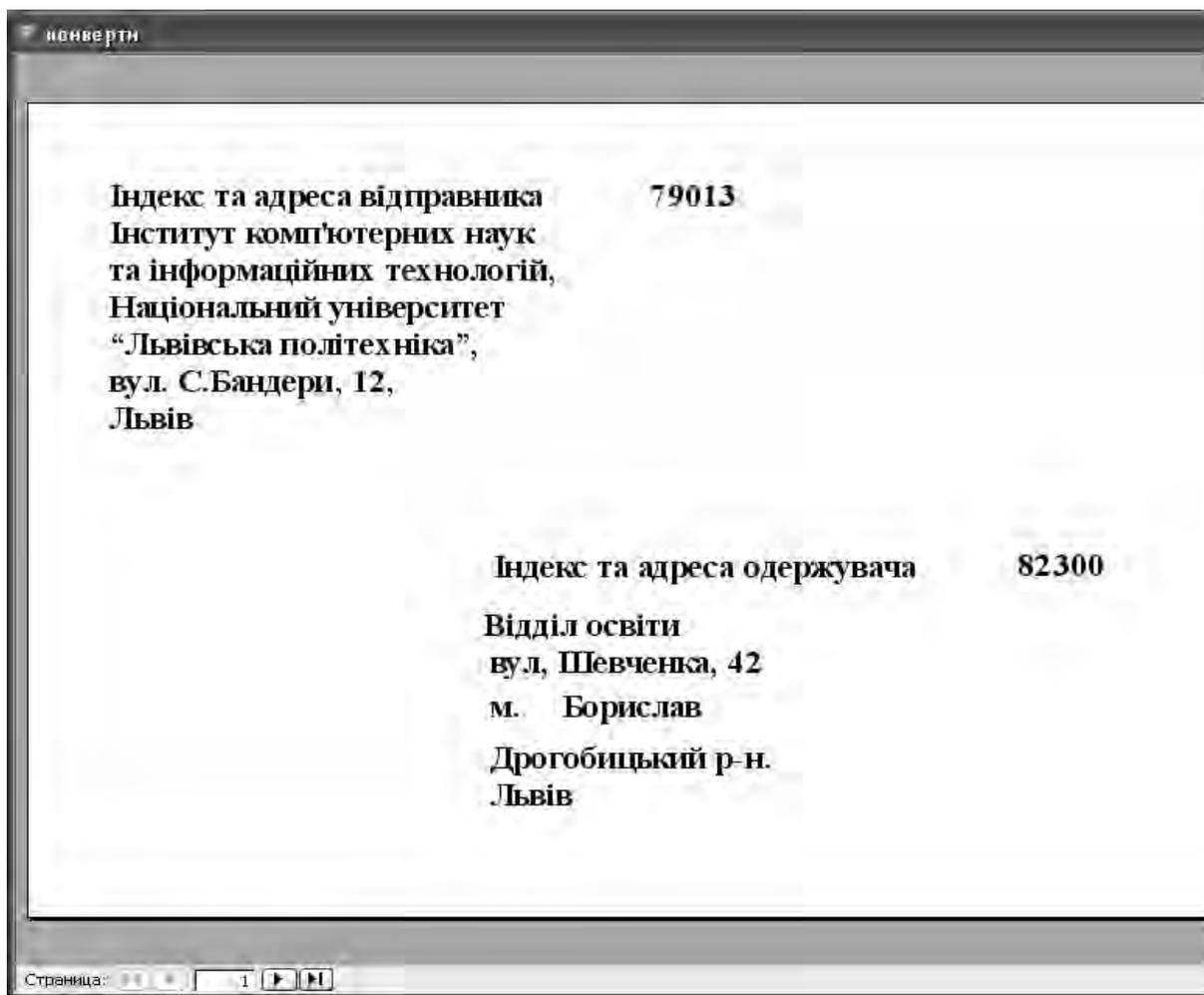
Шановний Смоляк Сергій Йосипович!

Запрошуємо Вас, вчителів, батьків і учнів 11-х та 12-х класів взяти участь у Дні відкритості джерей Інституту комп'ютерних наук та інформаційних технологій Львівського політехніки, що відбудеться з 16 березня 2010 р. о 11.00 в аудиторії №809 5-го навчального корпусу (м. Львів, вул. Ст. Бандери 28а).

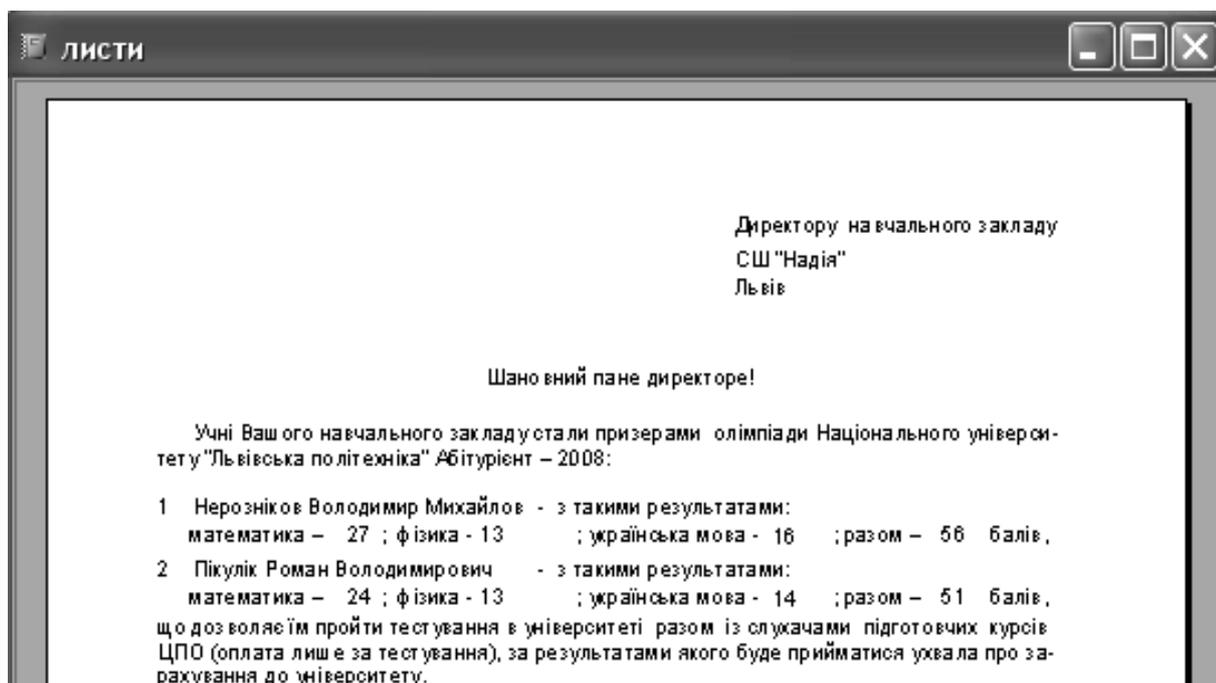
Учасники зможуть детально ознайомитися з особливостями майбутнього навчання, професійної діяльності, Прямим шляхом прийому до Національного університету "Львівська політехніка" на напрямки:

- комп'ютерні науки
 - інформаційні управлінські системи та технології
 - інформаційні технології проєктування
 - програмне забезпечення автоматизованих систем
 - інтелектуальні системи прийняття рішень
- програми інженерів
- інженерно-поліграфічна справа
 - комп'ютерно-графічні технології та системи
 - інженерно-поліграфічних виробництв
- філологів
 - прикладна лінгвістика

Pic. 19. Reports for distribution of materials to the departments of education



Pic. 19. Reports for distribution of materials to the departments of education (continuation)



Pic. 20. Letter sample for the distribution of materials to the education institutions

- forming the mailing list for the individual pupil's report about its results and future steps;
- quantitative analysis of the participation of some localities (districts) in competitions held.



Pic. 21. Diagram of the analysis of the participants of the contests held in Lviv region districts

3. ORGANIZATION OF VOCATIONAL AND CAREER EDUCATION AT LVIV POLYTECHNIC NATIONAL UNIVERSITY INVOLVING MOBILE VOCATIONAL CENTER

There is formed a car vocational group at Lviv Polytechnic National University in order to ensure an uninterrupted intensive work of Intellectual training and research centre of vocational and career education division. The work of this structural subdivision is based on the usage of Fiat Ducato car which is on purpose transformed into a mobile office of Intellectual training and research centre of vocational and career education and admission office of Lviv Polytechnic (Pic. 22).



Pic. 22. A means of transport which provides comprehensive information for all interested about Lviv Polytechnic

Outside meetings of vocational groups and "round tables" that are carried out as an informal conversations of Lviv Polytechnic leading scientists and opinions exchange on a variety of phenomena and processes with the interested became very popular within Intellectual training and research centre of vocational and career education (ITRCVCE) activity. The topic of successful employment is often discussed. For its more argumentative disclosure the following issues are being analyzed: intelligence as a commodity in the job market, scientific outlook and ability to think dialectically – the key to successful development of the individual in modern socio-economic conditions. These topics cause a keen interest among schoolchildren, teachers and parents (pic. 23).

The feedback, being resulted in a stream of counter initiatives from the public, clearly shows the timeliness and relevance of the problems being easily considered during the "round" table discussions, disputes of Lviv Polytechnic faculty within the organization of intellectual youth leisure centers activity. With a help of psychological assistance organization in choosing a future profession Lviv Polytechnic began to successfully strengthen intellectual and educational influence on pupils and students, promoting their spiritual needs and improving vocational education of pupils.



Pic. 23. Is intelligence characterized by morality? (such an unexpected and unpredictable in advance problem had to have been analyzed at the outside meeting of the round table in Novovolynsk Lyceum)



Pic. 24. Traditional live discussion of experiments and a workshop during a meeting at the School of public education in Pidhaytsi city

4. METHODOLOGICAL BASIS OF EDUCATIONAL AND COGNITIVE CENTRE USAGE FOR VOCATIONAL AND CAREER EDUCATION

Lviv Polytechnic National University heads ideological and scientific part of development training of the first scientific and cognitive center in the western region. The prerequisite to the development of such educational innovation was successfully held in April 2010 "Festival of science" where Lviv Polytechnic offered visitors not only the scientific presentations, performances by leading scholars but live communication with pupils by holding workshops, field experiments and so on. These circumstances dictated the decision to use such measures for vocational and career education.



Pic. 25. Visitors at the exposition of Mini Technical Academy of Sciences at the "Festival of science – 2010"



Pic. 26. Workshop for the interested students during "Festival of science – 2010"

Scientific traditions of the city Lviv and the region have created the preconditions to become one of the leading regions in Europe in the field of high technology. Local weighty scientific base with powerful public and private higher education institutions, high concentration of educated young professionals, the new international airport expanding to Euro 2012 give hope for new investments of foreign companies, the dynamic development of old and the start of new enterprises of various branches in the region.

At the same time, and there is need of new impetus and initiatives that will accelerate changes that are coming, and will be inspiration for new projects. It is about finding inner reserves of inventive ideas and innovative thinking. One of the

standards, proven in world practice ways is youth interest in science, engineering and technology of scientific research and invention.

The experience of the developed countries shows that early youth interest in innovations and youth encouragement in its own research leads not only to the achievement of higher education in polytechnics specialties, but to the real growth of progressive improvements, unique inventions and technical breakthroughs, which will have significant impact on investments involvement, creation of new branches of industrial areas, development of national economy and overall advance of mankind. In order not to discuss the lack of sustained the city, region and the whole country in time, we have to take care of systematic training of appropriate qualified staff now, which would eliminate the lack of workers with technical education. This need is now well realized by both employers and representatives of state and local authorities.

Simultaneously, it should be noted that the center will promote both technical and scientific-cognitive knowledge. The center activity will focus on pupils of junior and middle grades, colleges, high schools and adult residents of the city, region, visitors from other regions of Ukraine and from abroad.

There are formed two groups for initiation of work on the project: the Working group and Policy council.

The purpose of Working group activity is collecting and processing of the information of planned, implemented and functioned centres of interact and educational manner. This document is the basis for administrative decisions and search sources for project funding.

The objectives of the Program Council include the following tasks: launching a formal process of opening the center as well as assistance in finding sources for initiative funding.

4.1. Scientific and cognitive centre functions

Development of economy based on knowledge requires highly qualified and creative staff. Level of higher education requires particular search and studying of young scientific personnel. Science spreading and popularization helps it.

Creation of scientific and cognitive center of science and technology to realize the above mentioned objectives. Interactive stands, exhibits and devices will allow spectators to conduct experiments in physics, mathematics, chemistry and more independently. Expositions will be complemented by laboratories and lecture halls for didactic tutorials and scientific presentations, training for teachers, competitions for schools etc. The presence of Lviv Polytechnic in shaping and implementing the

ideology of exhibits will fully introduce the activity of educational and research institutions and will enable early vocational education (see table).

Table 1

Functions	Description	Notes
Main activity	Access to the exhibition, which consists of interactive devices and exhibits that allow visitors to conduct research or monitor processes independently. Individual and group visits, organized classes.	Necessity
Additional activity	Organization of courses, presentations, conferences, public events, any activity related to the studying and promotion of knowledge. Economic activity associated with the object functioning.	Opportunities
Impact on environment	Impact Educational: creation of framework, increasing of professional qualification Social: smoothing the chances for development, public assistance Urban: the creation of public space, recreation, leisure Marketing: creating and improving the city brand and province, city functions development as a regional center.	Chances

Table 2

Group	Forms of participation
Preschool children, junior, middle and high school pupils	Individual or group review of the exhibit, participation in public classes, laboratory classes, participation in education and entertainment and other activities, recreation, games.
Families	Individual or group review of the exhibit, participation in education and entertainment and other activities, recreation, games.
Students of higher education institutions, students of other educational institutions, including vocational	Courses, research projects, professional practice, class conduction, fulfillment of the moderators' role of presentations.

Thus, there is a new powerful mechanism of formation and regulation of entrants stream – potential students of Lviv Polytechnic.

5. THE ORGANIZATION OF VOCATIONAL AND CAREER EDUCATION AT LVIV POLYTECHNIC NATIONAL UNIVERSITY THROUGH THE NETWORK "COLLEGE – UNIVERSITY"

The appearance in the system of the I-II accreditation levels higher education institutions – colleges, creates preconditions for searching and practical implementation of new forms and methods of vocational and career education. There function such colleges in the structure of Lviv Polytechnic:

- Lviv Automobile and Road College of Lviv Polytechnic National University. Location – Lviv region, Lviv.
- Lviv Technical and Economic College of Lviv Polytechnic National University. Location – Lviv region, Lviv.
- Technical College of Lviv Polytechnic National University. Location – Lviv region, Lviv.
- Kolomiysky Polytechnic College of Lviv Polytechnic National University. Location – Ivano-Frankivsk region, Lviv.
- Zolochiv College of Lviv Polytechnic National University. Location – Lviv region, Zolochiv.

The educational process is carried out by integrated plans that permits to continue studying in appropriate educational and research institutes of Lviv Polytechnic National University.

5.1. Innovative education and research and product complex «School-College-University-Enterprise» at the Lviv Polytechnic National University

The current job market makes it tough for young professionals set out requirements that can be satisfied only by applying new approaches to the selection of entrants and their further study in higher education institutions. One of such approaches is the implementation in practice the concept of the «School-College Higher Education Institutions». There is created innovative education and research and product complex «School-College-University-Enterprise» (then **Complex**), approved by the Ministry of Education and Science of Ukraine № 489 from 05.26.2010, according to the Law of Ukraine «About Education» in Lviv Polytechnic National University. The main task of the complex is the implementation of educational work and the formation and realization of the educational content in the system of Gradual Preparation of Specialists.

The Complex includes: Lviv Polytechnic National University, ltd «Soft Serve», ltd «Aleks», Lviv branch of Commercial Bank "Forum", the insurance company "Dnister" secondary schools of the city Lviv № 13, 27, 29, 32, 49, 70, 96, school gymnasium «Sykhivska», Gymnasium of Novyj Rozdil, Sambir secondary school № 4, Stryj secondary school № 1, 6, Drohobych school № 17, Boryslav school № 1.

The realization of Complex measures from the part of Lviv Polytechnic National University is commissioned to the education and scientific Institute for Entrepreneurship and Advanced Technologies by the order of Lviv Polytechnic National University № 153-10 of 10.13.2010.

The heads of Education Department of Humanitarian Policy of Lviv city council, the relevant education departments of district administrations of Lviv city council, executive committees of Novyj Rozdil, Sambir, Stryj, Drohobych and Boryslav city councils are commissioned to promote functioning of such a Complex by the order of the Department of Education and Science of Lviv Regional State Administration № 773 from 10.11.2010.

Education institutions that are included to the Complex conduct their activity according to the Law of Ukraine «About Education», valid legislation, constituent agreement of common activities within the Complex, and Complex provisions and the regulations relating to the activity of the given type of the educational institution.

The purpose of the Complex is:

- testing of new concepts of education in accordance with the requirements of the Bologna process and introduction of new methods to increase efficiency and optimization of the state educational standards;
- introduction of innovative educational model;
- development and usage of transversed plans for all years of studying in an educational Complex with an aim to eliminate duplication of academic disciplines and provide opportunities for students without any interference with the move to the next level of studying with a possible future employment.

There is provided the research of psychological structure change of personality, which acquires two statuses – pupil and student:

- increasing personal responsibility of the youth;
- increasing interest in acquiring professional knowledge;
- understanding the prospects of early achievement of economic independence;
- protection of antisocial attitudes.

The study of increase factors of a pupil competitiveness – a student in the job market:

- improvement of social adaptation of personality;
- receiving both specialties in higher education institution (at full-time and correspondence courses).

The major objectives of the Complex activity are:

- coordination of common activity of the Complex participants; vocational education work;
- establishing the measures for selection, training and education of gifted and talented youth;
- increase of educational institutions teachers qualification;
- development of business work plans and training programs for all levels of specialists training;
- measures to support researches of young scientists and gifted students;
- the usage of enterprises, organizations and institutions that are members of the Complex as the base of the practical training of students.

Such form of studying enables pupils from grade 10 to join a university education. The following becomes possible with a diploma of junior specialist:

- employment on received specialty;
- employment and continuing education at correspondence course;
- continuing education and obtaining the bachelor's degree and then a specialist or master.

The organization of educational process is regulated by relevant provisions. Integrated curricula enable to avoid duplication of some subjects studied at school and in higher education institutions. They eliminate repetition, save time, provide an opportunity to know more about the most important – a specialty.

The Complex originally solves the problem of graduate education; a deep approach to social problems of the youth is carried out.

The Complex is an implementation of a new model of specialists training. The idea and experience of complexes have been formed by the study of the European standards of educational system and modern Ukrainian requirements. It is based on a fundamentally new for Ukraine system of graduate preparation of specialists.

The educational activity of the Complex is based on achievements conservation of the national high school and the account of our processes of integration with the world educational space.

The key task is the orientation of our activity to the end result – training of a competitive professional, conscientious citizen of our state.

6. AN INTERNATIONAL COOPERATION OF INTELLECTUAL TRAINING AND RESEARCH CENTRE OF VOCATIONAL AND CAREER EDUCATION

MTAS successful participation in Science Festivals in Lviv and other regions, career fairs, educational fairs aroused interest in our fellow educators outside Ukraine. In particular, at the invitation of the Polish Agency POLIMEDIA, ExploRes Society and the Polish Radio RZESZÓW Intellectual training and research centre of vocational and career education of Lviv Polytechnic National University presented his exposure to the second interactive Knowledge festival under the title "Day of the researcher" on June 11 in Rzeszow, Poland.

The exhibition of Lviv Polytechnic National University provoked a sincere interest as students as an adult visitors. From 11:00 to 17:00 over 900 visitors stopped and got comments at our hall. For the organizers reviews "Lviv Polytechnic exposition forced to think, ask a lot of questions and pushed for the independent work".



Pic. 27. Prof. Fedasyuk D. V. (on the left), associate professor Zakharyash O. S. (on the right) with the event organizer Tomasz Michalski. (in the center).



Pic. 28. The climax of the festival

To reach the most possible range of pupils, teachers and caring people we prepared to consider the social and educational cross-border project "Research of the territory of Nadbuzhzhya using geo-information technologies."

The ideas set forth in this project have been approved after the IVth International Forum Corporation INTEL presentation at the Xth International Economic Forum in Truskavets.

Nadbuzhzhya is the national name of an area that is located above the river Bug. Ukraine has the Western Bug River and the Southern Bug. The name of Nadbuzhzhya is used to refer to areas along the middle reaches of the river Western Bug in Lviv and Volyn regions. The name of Nadbuzhzhya is used also in the districts through which the Western Bug flows in its upper reaches.

Preconditions for the project establishment:

Social:

- the existence of a set of Zolochiv educational establishments (secondary school, college), who have chosen an informative section;
- involving pupils and school students to the research work;
- the possibility of formation of the transnational research projects on the ecological state of Bug and the surrounding areas (together with **Poland**);

Educational and scientific:

- to improve the quality of college students and pupils training;
- to encourage the pupils to data collection and evaluation of the primary information and its presenting in the convenient form for analysis,
- to encourage faculty in teaching;
- to form the the team of researchers, including pupils, college students, teachers from the section "Computing" of Lviv Polytechnic National University, the integration of education and science;• application of advanced scientific achievements of "Lviv Polytechnic" scientists during the educational process, starting from the level of the secondary education;
- the implementation of the main scientific achievements of scholars of Lviv Polytechnic in the educational process from secondary education level.

Natural:

- the necessity of studying the conditions of the annual flood of the Bug and its tributaries, the prediction, the consequences of the flood,
- the necessity of studying different kinds of information (biological, chemical, social, etc.) for modeling the pollution extension of the river Bug and its territory through which it flows (Lviv, Volyn region, eastern Poland) and propose a plan of measures to prevent pollution;

Historical:

- Nadbuzhzhya and its adjacent territories are rich in historical and natural attractions – the Golden Ring of Lviv (Zolochiv, Olesk, Pidhirtsi castles), the ancient wooden church, unique inundation of rivers.

Economic:

- the development of tourism and recreation infrastructure.

The project involves multistage performance and is up to 5 years, but due to the presence of partners from Poland is treated as a cross-border one.

7. QUO VADIS: SCIENCE, COMMUNITY, BUSINESS?

(Quo vadis (лат.) – where are you going to)

October 15-16 2011 Lviv Polytechnic took part in celebrating the 15th anniversary of commercial and industrial complex (CIC) "Pivdennyj"

According to the preliminary agreements Intellectual training and research centre of vocational and career education of Lviv Polytechnic National University organized an exposure under the general rubric of "Get to know the environment".

The event took place in the program celebration of the 15th anniversary of CIC "Pivdennyj". Given the positive and even often enthusiastic reviews of teens and adults who visited educational and entertainment center "Veselka", we hope that the first introduction of a powerful center of education and science of Lviv Polytechnic National University and businesses structure – CIC "Pivdennyj" will grow into a constant cooperation and mutually beneficial partnership.

Intellectual training and research centre of vocational and career education presented interesting experiments in physics and chemistry to the kids, teenagers and adults as well as devices that gave impetus to the analysis of their action principle and desire to be technically improved.



Pic. 29. The scientists are always happy watching the way how young researchers admire experiments



Pic. 30 All the interested were able to pass the test for professional skills

There is realized the declared concept of close contact in practice with their potential entrants at Lviv Polytechnic National University. Modern society is thirsty for a reasonable explanation of the environment phenomena and affordable live word of the qualified active scientist. In this regard, Lviv Polytechnic acts in society so as to satisfy the interests of not only school leavers but also elderly people, 5-6th grade pupils and even kids. The feedback is expressed within the proposals of communities to organize and ideologically lead the work of schools and centers of public education in the district centers and towns in rural areas.

Thus, an intellectual and educational mission of higher education institution is provided in practice.

Expressing gratitude to the CIC "Pivdennyj" management for the invitation to the feast, we hope for the future cooperation which may be embodied in the work on cross-border projects, solving environmental problems of the city and region and the cult education of science and intelligence.

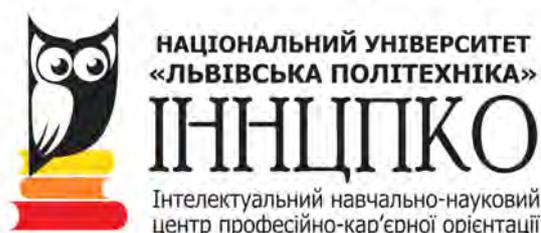


Pic. 31. The exhibition was carefully examined by the Chairman of the Board of Lviv employers regional association John Ryvak

Perhaps this is the first step toward the civilized cooperation, highly developed science and big business?

8. "YOU ARE DOING A VERY RIGHT THING ..."

Intellectual training and research centre of vocational and career education of Lviv Polytechnic National University took an active part in the Festival of Ukrainian medieval culture "Tu Stan – 2012"



There was held during 3–5 August the Festival of Ukrainian medieval culture "Tu Stan – 2012" in the Urich village of Skole district.

Intellectual training and research centre of vocational and career education of Lviv Polytechnic National University took an active part in the Festival at the invitation of its organizers. In addition to the exposition of interesting experiments and workshops this visit signalled new aspects of ITRCVCE educational activities in our society.



The general Festival atmosphere was saturated with for our glorious heroic past. Therefore, communication with Festival participants at our exposition was very often turned into a prior public approbation and advertising of research material, prepared for publishing, based on the development of science and the role of Ukrainian scientists in the research of the Middle Ages. The visitors, especially from the eastern regions of Ukraine, enthusiastically perceived information about the scientific achievements of Yuri Drohobych and the fact that he was very likely a student of the famous Copernicus.

"Spirit, science, thought, will ..." – it seemed that the whole environmental matter was overflowed with the sense of these words.



The photo in memory of Lviv Polytechnic graduates – guests of the Festival

We set out, catch a glimpse-report of the mighty cliffs and hear sincere and warm words – **"You are doing a very right thing ... "** – from the organizers, sponsors, information festival partners and numerous visitors.

This time the departure of the ITRCVCE delegation was provided by:

Olexandr Zakharyash – the director of Lviv Polytechnic National University Intellectual training and research centre of vocational and career education
Natalia Janush – the head of the ITRCVCE educational services department
Danylo Kolodij – the student of Lviv Polytechnic National University Technical College

The information was presented by:

**Zakharyash O. S.,
the director of Lviv Polytechnic National University Intellectual
training and research centre of vocational and career education**

CONCLUSIONS

The organization of vocational and career orientation and its management at Lviv Polytechnic National University is an open system of education and cognitive activity of school students.

Created at the University Intellectual training and research centre of vocational and career education provides comprehensive pre-professional training of pupils and I-II level of accreditation higher education institutions students for further study at Lviv Polytechnic.

The activity of the youth leisure intellectual centers and Mini Technical Academy of Sciences allows carrying out early vocational education of pupils, organizing psychological assistance in choosing a future profession and provoking the youth's interest in self-invention and scientific work.

Attracting young people to participate in international projects in terms of education and cognitive center activity contributes to a growing interest in acquiring education exactly at Lviv Polytechnic and significantly raises its image as a research higher education institution of the modern European standards.

INFORMATIVE EDITION

**VOCATIONAL
WORK AMONG YOUNG PEOPLE:
FUTURE VISION**

**GOLDEN WINNER
OF THE INTERNATIONAL EXPOSITION
"EDUCATION AND CAREER – 2011"**

Compilers

Pavlysh Volodymyr Andriyovych
Fedasyuk Dmytro Vasylyovych
Zagorodniy Anatoliy Hryhorovych
Zakharyash Oleksandr Serhiyovych
Shakhovska Nataliya Bohdanivna
Pikh Zorian Grygorovych
Vasylyna Bohdan Sylvestrovych

Editor

Galyna Klym, Olesia Pastuschak

Computer imposing

Galyna Sukmanovska

Translated by

Solomiya Albota

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F. Kolessy, 2 St., Lviv 79000
Tel. +380 32 2582146, fax +380 32 2582136
Vlp.com.ua, e-mail: vmr@vlp.com.ua