



**CONCEPT OF DEVELOPMENT OF
VOCATIONAL TEACHER TRAINING
SYSTEM AT NATIONAL TRANSPORT
UNIVERSITY
BASED ON THE PARTNERSHIP AND
STANDARDIZATION**



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Summary:	The document describes the Concept of development of the system of vocational teacher training at NTU based on partnership with stakeholders: applicants, NTU's teachers, teachers of vocational education institutions, heads of vocational education institutions, business representatives.

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ACRONYMS

HEI – Higher Educational Institution

VEI – Vocational Education Institution

NTU – National Transport University

VET Teacher – teacher of vocational education and training

VTE – vocational teacher training

1. INTRODUCTION

In recent years, Ukraine has seen negative trends in vocational education. To overcome it and form a competitive system of vocational education that meets the needs of the labour market and the individual in professional implementation, the Cabinet of Ministers of Ukraine in 2019 approved the Concept of state policy in the field of vocational education "Modern vocational education" for the period up to 2027. This concept envisages reforms in the following areas: decentralization of management and financing; improving the quality of vocational education; strengthening the connection with the labour market. Successful implementation of the direction - "Improving the quality of vocational education" - requires the cooperation of efforts of vocational and higher education institutions that train vocational teacher training (VET).

The National Transport University has been training specialists in the **speciality "Professional education (transport)"** for many years. A special feature of this program is the binary of professional competencies: a teacher of professional education and training (PET) in the field of transport and mechanical engineering.

If until 2019, the theoretical training dominated in the educational program, and attention was paid to the acquisition of mainly engineering competencies; then, with the introduction of the Standards of educational programs for training students in the speciality "Vocational education (by specialities)" in 2019 (Bachelor) and 2020 (Master), as well as the professional standard "Teacher of Vocational Training" in 2020, the requirements for the training of future vocational teachers have changed dramatically. The emphasis shifted to the pedagogical component of training, which necessitated a radical overhaul of educational programs and curricula.

The results of the analysis of the practice of training teachers in vocational education at NTU, conducted in the framework of **the Erasmus + KA2 project Development of the potential of higher education №609536-EPP-1-2019-1-DE-EPPKA2-CBHE-SP (PAGOSTE)**, confirmed the necessity of both: changes in educational programs and also of the introduction of a mechanism that will provide quality training for future teachers of VET by establishing partnerships with vocational education institutions, business representatives, authorities.

This determines the relevance of developing the Concept for the development of the system of vocational teacher training based on partnership at NTU.

During the development of the Concept, the identified needs of stakeholders were taken into account: vocational education institutions, teachers of the National Transport University, students of the National Transport University, who receive education in the specialty 015 Vocational Education (Transport)

2. LEGAL BASIS

The concept of development of vocational teacher training system based on partnership at the National Transport University was developed in the framework of the Erasmus + project: KA2 CBHE "New management mechanisms based on partnership and standardization of training of teachers of vocational education in Ukraine" -1-DE-EPPKA2-CBHE-SP) considering the regulations of:

1) The laws of Ukraine: "On education"; "On higher education"; "On public-private partnership", "On vocational (vocational-technical) education"; "On vocational development of the employees";

2) normative legal acts of Ukraine: Order of the Ministry of Education and Science of Ukraine "On approval of the Regulations on the dual form of vocational (vocational-technical) education" № 1551 of 12.12.2019; Order of the Ministry of Education and Science of Ukraine On approval of the concept of development of pedagogical education. Order of the Ministry of Education and Science of Ukraine № 776 dated July 16, 2018; Order of the Ministry of Education and Science of Ukraine "On approval of the standard of higher education in the speciality 015" Vocational education (by specialization) for the first (bachelor's) level of higher education "№1460 from 21.11.2019; Order of the Ministry of Education and Science of Ukraine "On approval of the standard of higher education in the speciality 015" Professional education (by specialization) for the second (master's) level of higher education "№1435 from 11.18.2019; Order of the Cabinet of Ministers of Ukraine "On approval of the Concept of implementation of state policy in the field of vocational (vocational-technical) education" Modern vocational (vocational-technical) education "for the period up to 2027" № 419-r of June 12, 2019

3) internal status of NTU: Development Strategy of the National Transport University for 2019-2025; Internationalization Strategy of the National Transport University; Regulations on the implementation of projects of EU international cooperation programs and grant management at the National Transport University; Regulations on the organization of the educational process at the National Transport University; Regulations on the system of internal quality assurance of higher education (new edition); Regulations on stakeholders of educational programs of the National Transport University; Regulations on postgraduate education at NTU; Regulations on the professional development of specialists; Temporary provision on the procedure for recognition of learning outcomes acquired by students of the National Transport University in non-formal / informal education; Regulations on the practice of NTU students.

3. TERMS AND CONCEPTS

Higher education institution (HEI) - a separate type of institution, which is a legal entity of private or public law, operates in accordance with the issued license to conduct educational activities at certain levels of higher education, conducts scientific, scientific, technical, innovative and/or methodological activities, provides organization educational process and obtaining higher education, postgraduate education, taking into account their vocations, interests and abilities.

Vocational education institution (VEI) is an educational institution that meets the needs of citizens in vocational education, mastery of working professions, specialities, qualifications in accordance with their interests, abilities, health status.

Applicants for higher education - people who study in a higher education institution at a certain level of higher education in order to obtain the appropriate degree and qualification.

Competence - an ability of a person to successfully socialize, learn, conduct professional activities, which arises based on a dynamic combination of knowledge, skills, abilities, ways of thinking, views, values, and other personal qualities.

Educational qualification is a set of educational standards and competencies established by an educational institution or other authorized subjects of educational activity and certified by the relevant document on education.

Educational partnership – a combination of the capabilities of educational institutions and stakeholders based on formalized relations with other institutions, enterprises, organizations, public authorities, which are established by agreement of two or more parties to achieve common goals, improve the quality of training.

Educational (educational-professional, educational-scientific or educational-creative) program is a single set of educational components (academic disciplines, individual tasks, practices, control measures, etc.) aimed at achieving the learning outcomes provided by such a program, which gives the right to receive a certain educational or educational and professional qualifications. The educational program may define a single specialization within it or not provide for specialization

Educational standards - regulatory requirements for mandatory competencies and learning outcomes of students, produced in the education system to provide education at a certain level (sub-level, stage, cycle) and the award of appropriate educational (academic) qualifications (degrees).

Professional qualification is a standardized set of acquired competencies (learning outcomes) recognized by a qualification centre, educational entity, other authorized entity and certified by a relevant document, which allows to perform a certain type of work or carry out professional activities.

Professional standard is the requirements to the competencies of workers approved in accordance with the established procedure, which serve as a basis for the formation of professional qualifications.

Learning outcomes - knowledge, skills, abilities, ways of thinking, attitudes, values, other personal qualities that can be identified, planned, evaluated and measured and which a person can demonstrate after completing the educational program (program learning outcomes) or individual educational components

Stakeholders for the training of vocational teacher training at the National Transport University - a group of stakeholders, which may include individuals and legal entities that may affect the activities of the University or, conversely, be able to feel the impact of its activities, services and related with this action. This definition does not apply to all those who may be familiar with NTU or have an opinion about it.

4. PURPOSE AND TASKS

The purpose of the Concept: to create conditions for improving the quality and relevance of vocational teacher training based on partnership at NTU.

Task:

1. Identify groups of stakeholders and possible areas of partnership to improve the quality of training of future teachers vocational education and training at NTU.
2. To formulate the principles of establishing partnerships with VEI.
3. To develop a mechanism for improving the quality and relevance of vocational teacher training based on partnership at NTU.
4. To determine the expected impact of stakeholders on the quality of training of future teachers and to formulate the expected results of the Concept of development of vocational teacher education and training at NTU based on partnership.
5. Develop an action plan for the implementation of the Concept.

5. Stakeholder GROUPS AND POSSIBLE DIRECTIONS OF PARTNERSHIP WITH THEM

The development of the Concept is based on taking into account the interests of internal and external stakeholders, coordinating their interests with the interests of NTU in providing quality training for teachers of VET.

5.1. INTERNAL STAKEHOLDER GROUPS

The internal groups of stakeholders include students and professors of NTU. In the framework of PAGOSTE project, during the first stage, a survey of these groups of stakeholders was conducted.

Among the main interests of students: quality education, the possibility of individual learning trajectory, the opportunity to participate in international student exchanges, the development of foreign language competencies, paying more attention to practical training, the possibility of implementation in scientific and creative activities.

Among the surveyed applicants, the cooperation of NTU with VEI is assessed positively and rather positively - 73%; positively evaluate production, training and pedagogical practice - 70%; positively evaluate their own experience of conducting classes during the internship - 64%, involved or know that they can discuss changes to educational programs - 60%; 90% of respondents are satisfied with studying at NTU; during the internship, they experienced a lack of knowledge of the pedagogical component - 26%.

Regarding the forms of cooperation, the majority preferred to conduct practice at VEI (63.3%), conducting psychological and pedagogical cycle classes (53%), and also consider it appropriate to involve software teachers in practical classes at NTU (46.7%).

The main interests of the teaching staff of NTU are the possibility of advanced training, personal growth, the possibility of international internship, regular salary, financial incentives for the results achieved.

Among the interviewed teachers of NTU, 92%- feel the need for continuous development of their professional and pedagogical competence; 38% - evaluate quite satisfactorily the cooperation of NTU with VEI.

Regarding cooperation with VEI, they consider it appropriate to involve: teachers of higher education institutions to conduct classes in VEI - 77%; teachers of VEI to conduct classes at NTU - 46%; consider expedient cooperation of NTU with VEI concerning pedagogical practice - 77%; conducting classes on the disciplines of professional training - 62%; development of the content of EP (Educational Program) and curricula - 69%, would participate in advanced training at VEI - 69%.

5.2. EXTERNAL STAKEHOLDER GROUPS

External stakeholder groups include teachers and leaders of VEI. In the framework of PAGOSTE project, during the first phase, a national survey of these stakeholder groups was conducted.

It was found that the interests of teachers of VEI are: the need for continuous development of professional and pedagogical competence; improving the quality of the postgraduate education system, functioning of advanced training courses, internships for teachers who train specialists for VEI, development of platforms for online communication and exchange of experience with colleagues; introduction of innovative learning technologies.

When evaluating their own experience and practice, they noted that at the beginning of their careers they lacked: pedagogical skills -32%; professional skills in the subject taught - 20.2%; professionally significant personal qualities - 15.7%; pedagogical knowledge - 13.6%. 36.2% of the respondents believe that they had a sufficient level of training.

Regarding cooperation with the HEI, it is considered expedient to: organize events for training and advanced training of teachers, career guidance work, conducting professional training classes. Consider the feasibility of involving teachers of HEI to conduct classes with students of HEI - 45.1%; 59.3% of representatives of VEI - are for conducting classes with prospective teachers.

The main interests of the leaders of HEI are: modernization of the material and technical base of HEI; providing multi-channel financing of VET, introduction of elements of dual education; advanced training of pedagogical staff of HEI.

Evaluating their own experience of working with teachers of VET, they note that: young teachers most lack pedagogical and professional skills - 70%; there are no initiatives on forms of cooperation from the VEI - 41.1%; 60.7% see higher education institutions as partners for VEI.

Regarding the areas of cooperation with HEI, the most promising are considered to be: pedagogical practice - 90%; advanced training of teachers - 95%; employment of graduates - 96%; introduction of dual education -88%; internships for teachers and students - 82%; formation and updating of the content of educational programs - 85%. In their opinion, it is expedient to involve: teachers of HEI in conducting classes in VEI - 53.4%; teachers of VEI to classes in HEI- 65%.

6. PRINCIPLES OF ESTABLISHING PARTNERSHIP RELATIONS WITH VOCATIONAL EDUCATION INSTITUTIONS

Establishing partnerships between the National Transport University and VEI should be built in compliance with the following principles:

- equality of the parties;
- coordination of interests of participants;
- respect and consideration of the interests of the parties;
- interest of the parties in participating in partnerships;
- voluntary acceptance of obligations by the parties and their reality;
- mutual responsibility for non-fulfilment of collective agreements and contracts;
- control over the implementation of collective agreements and contracts;
- obligatory execution of the agreements concluded between the partners.

7. MECHANISMS OF VOCATIONAL TEACHER TRAINING BASED ON PARTNERSHIP

The mechanism of vocational teacher training at NTU based on partnership implies improving the effectiveness of existing forms of partnership with stakeholders and the development of new forms of partnership.

7.1. FORMS OF PARTNERSHIP

At the time of developing the Concept, there were two forms of partnership in the practice of cooperation between NTU and VEI: institutional and contractual. The institutional partnership takes place through the interaction of NTU with its structural subdivisions:

- Bar College of Transport and Construction of NTU,
- Nadvirna College of NTU,
- Lviv Higher Vocational School of Transport Technologies and Services of NTU,
- Zhytomyr Automobile and Road College,
- State Higher Educational Institution of Transport of Kyiv.

The partnership is regulated by the constituent documents. The contractual partnership is carried out based on concluded agreements between NTU and VEI (agreements on practice, internships, advanced training, etc.). They are designed to facilitate the implementation of specific one-time agreements or specific systematic interactions during the contract specified in the contract. Within the framework of both forms of partnership, the following activities are held: master classes on teaching technical disciplines by teachers of structural units with the involvement of students in the educational program "Vocational Education (Transport)" online using distance learning technologies, refresher courses for teachers of structural units, joint research activities (International scientific-practical conference "Innovative solutions in modern science, education and practice"), the internship of students on the educational program "Vocational education (transport)".

The realisation of the concept for improving the current system of vocation teacher education implies establishing the organisational partnership. It may have two variants:

1. On the basis of NTU, the establishment of the Committee for support of quality assurance and development of vocational teacher training with involvement of representatives of HEI in its structure (creation during the implementation of the Concept in NTU is provided).

The Committee is called to promote the improvement of educational programs and curricula for bachelors and masters on the specialty 015 "Vocational Education (Transport) with the involvement of representatives of VEI in accordance with the identified needs; to coordinate the activities of the departments to improve the content of theoretical, practical, research training (for masters) of future teachers of PET; to establish partnerships with VEI, production structures for the organization of practice, internships for future teachers of PET.

2. The establishment of the Supervisory Board at VEIs with the participation of a representative of NTU (by invitation).

The Supervisory Board of VEI is designed to help solve long-term problems of its development, attract financial resources to ensure its activities in the main areas of development and control over their use, effective interaction of educational institutions with public authorities and local governments, the scientific community, NGOs, legal entities and individuals.

7.2. ORGANIZATIONAL SUPPORT

Composition of the members of the Committee for Support of Quality Assurance and Development of Vocational teacher training:

1. Guarantor of the educational program of NTU (1 person);
2. Heads of graduating departments of NTU, which train specialists in the speciality 015 "Vocational education (transport)" (5 people);
3. Dean of the faculty of NTU, which trains specialists in speciality 015 "Vocational education (transport)" (1 person);
4. A representative of the department of quality assurance of education of NTU (1 person);
5. Representatives of external stakeholders (VEI), with whom agreements on places of practices and (or) introduction of elements of dual education in training have been concluded (by consent) (1-2 persons);
6. A representative from among the applicants for education in the speciality 015 "Vocational education (transport)" (by consent) (1 person).
7. A representative from the companies-employers (by consent) (1 person)

Total: 11 (12) people

Functional responsibilities of the Committee for Support of Quality Assurance and Development of Vocational teacher training:

- revision and updating of educational programs and curricula for bachelors and masters in EP "Vocational Education (Transport)" taking into account the competency approach;
- development of proposals for improving educational standards through a competency approach;



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- participation in examination commissions;
- revision of the content and expansion of practice bases.

Regulation of the activities of the Committee for Support of Quality Assurance and Development of vocational teacher training:

1. Regulations on the Committee for Support of Quality Assurance and Development of vocational teacher training.
2. Agreement on cooperation with VEI.
3. Agreement on cooperation with the employers.

Criteria for the effectiveness of the Committee to support quality assurance and development of vocational teacher training:

- increase of academic performance of the students by 3-10% (current average learning score 71.5)
- holding joint events of a scientific nature with VEI, involvement of VEI employees in the international activities of NTU departments - at least 2 events per year (current number of events -1)

7.3. STAFF

The implementation of the Concept requires appropriate support from personnel. Vocational teacher training can be carried out at NTU. Teachers of NTU and VEIs can be involved in the educational process. Forms of participation are

- conducting lectures, practical, seminar classes,
- participation in examination attestation commissions,
- review of master's qualification works,
- management of student scientific circles.

Normative documents regulating such interactions are internal provisions of NTU, agreements on cooperation with VEI, part-time employment contracts (for VEI teachers), orders on approval of the Chairmen of examination commissions.

In the case of the introduction of elements of dual education, the training of vocational teacher training can be carried out on the basis of VET. Teachers of VEI are involved in the educational process. Forms of participation are conducting practical classes, practice management, conducting classes on the basis of VEI with elements of the dual system. Normative documents regulating such interaction are the internal provisions of NTU, agreements on cooperation with VEI, agreements on the introduction of elements of dual education with VEI, part-time employment contracts (for VEI teachers).

The organization of postgraduate education, advanced training is carried out on the basis of NTU and provided by NTU teachers. Forms of participation are refresher courses, workshops, trainings and seminars. Normative documents regulating such interaction are the internal provisions of NTU, agreements on cooperation with VET, agreements on in-service training for employees, agreed with VEI in-service training programs for their employees.

7.4. MATERIAL FACILITIES



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In the process of vocational teacher training, NTU uses 5 lecture rooms, 20 classrooms for seminars and workshops, 19 specialized laboratories and 5 computer classes.

Within the framework of the international project Erasmus + KA2 Development of the potential of higher education № 609536-EPP-1-2019-1-DE-EPPKA2-CBHE-SP "New management mechanisms based on partnership and standardization of teacher training in Ukraine (PAGOSTE)" it is planned to buy equipment for a didactic office for students to master the psychological and pedagogical component of training, language classroom for students to master the skills of fluency in foreign languages and replenishment of the Educational and Scientific Center of Road Transport. The specified material and technical base can be used for the following purposes:

- implementation of the educational process of students in the speciality 015 "Vocational education (transport)";
- advanced training of university and VET teachers;
- conducting joint research with representatives of specialized enterprises and VET;
- conducting trainings for teachers and students.

7.5. DIRECTIONS OF IMPLEMENTATION OF PARTNERSHIP WITH VET AT NTU

The areas of partnership with stakeholders in the process of VTE at NTU include:

1. Improving the vocational teacher training based on partnership.

Features of the educational program "Vocational education (transport)", implemented in NTU, are:

- binary education;
- simultaneous receipt of pedagogical and professional engineering training in the field of transport;
- student-centred learning;
- based on the Standards of the educational program of the speciality 015 "Professional education (by specializations)" of the bachelor's degree and the master's degree.

Needs for improvement, which were identified during the analysis of vocational teacher training at NTU, due to: the introduction of Standards EP, providing for an increase in the share of pedagogical education in the curriculum; expression by students of wishes for the development of foreign language competencies, modern changes in the educational environment due to the impact of the COVID-19 pandemic.

Ways to meet the identified needs are: the organization of practical training, internships in professional (transport profile) PEI will combine the acquisition of pedagogical and special professional skills; creating conditions for improving the organization of classes on acquiring foreign language competencies; introduction to the curriculum of disciplines: for bachelors - "Innovative educational and information technologies"; for masters - "Modern information technologies of distance learning".

To ensure high-quality vocational teacher training, interaction with partners is envisaged by concluding agreements with VEI internships, concluding employment contracts with VET teachers part-time. Courses "Innovative educational and information technologies" and

"Modern information technologies of distance learning" can be used to improve the skills of VET teachers based on NTU.

2. Expanding the portfolio of proposals for cooperation with VEI to improve skills and provide opportunities for personal self-development.

It is planned to develop training courses: "Innovative educational and information technologies", "Modern information technologies of distance learning", "Development of professional competence of teachers of VEI", trainings on pedagogical skills, conflict management, language courses for primary school teachers.

3. Involvement of VET teachers in the activities of NTU:

- information and promotion (dissemination of information about the results of cooperation on the information resources of their institutions, holding open days and employment consultations for students majoring in 015 "Professional Education", preparation of promotional materials aimed at encouraging employment of graduates, forming an image of the attractiveness of the teaching profession, motivation students to teaching)
- educational and pedagogical (conducting classes or individual modules of the discipline at the university, making proposals to improve curricula, work programs and content of educational disciplines for speciality 015 "Professional education (transport)", reviewing educational documentation of the university on training students in speciality 015 "Professional education", implementation of elements of dual education together with NTU teachers);
- research (implementation of joint scientific and applied projects with the university and/or specialized enterprises, participation in joint scientific and practical conferences, consulting companies);
- organizational (organization and conduct of practical training of students majoring in 015 "Vocational Education (Transport)", organization of masterclasses, job fairs, trainings, workshops, etc. in order to increase students' interest in employment).

Mechanisms for ensuring the involvement of teachers of VET in the activities of NTU are agreements on the cooperation of NTU with VET on the joint organization of career guidance, the conclusion of an employment contract for part-time teacher of VET in NTU, agreements on reviewing educational documentation of NTU and VET; concluding agreements with business structures or subcontracts, joint organization of conferences, etc.; concluding an agreement on the practice of students in VEI, conducting NTU in VEI master classes, job fairs, trainings, workshops, etc.

Indicators of involvement of VET teachers are the number of career guidance activities where information was disseminated, the number of links and posts on the websites of software and NTU institutions, the number of hours, the number of reviews, the number of proposals to improve educational programs and curricula, the number of contracts with businesses or subcontracts, number of joint conferences.

7.6. ENSURING COMMUNICATION WITH STAKEHOLDERS

Carried out in the following areas:

1. Advanced VET teacher training. The structural subdivision of NTU is carried out by the Center of advanced training, retraining, improvement of executives and specialists. Together with VEI the subject, quantity of hours, the period of carrying out, the form of carrying out (full-time or with application of technologies for distance learning), the maintenance of the diploma on advanced training, number of listeners, cost of training is coordinated.
2. Organization of joint events for career guidance, conferences, seminars, round tables. Is in the competence of their organizers: departments, faculties. Communication takes place through the head of the pedagogical section of the Department of Philosophy and Pedagogy, Dean of the Faculty of Economics and Law.
3. Organization of pedagogical practice is in the competence of the guarantor of the educational program, the head of the pedagogical section of the Department of Philosophy and Pedagogy, the department of quality assurance of education of NTU.
4. Involvement of VET teachers in the educational process of NTU. In the case of a part-time employment contract, including in the case of implementation of elements of dual education, the issue is agreed with: the head of the Department of Philosophy and Pedagogy or other graduate departments: TEEAS, Department of Automotive, Department of Engineering methodical management.
5. Questions of the organization of joint actions with VEI agree with the management of NTU. Proposals are given to the vice-rector for educational work.
6. The issue of involving teachers of software institutions to participate in the revision and renewal of educational programs, the introduction of new competencies, revision of curricula for training seekers are in the competence of the Guarantor EP, the Committee for Quality Assurance and Development of Vocational Education Teachers.

Communication is coordinated through the Dean of the Faculty of Economics and Law and the guarantor of the educational program.

8. EXPECTED INFLUENCE OF STAKEHOLDER GROUPS ON QUALITY OF VOCATIONAL TEACHER TRAINING AT NTU

The tools of influence of internal stakeholders - applicants of education - are the participation in the discussions of educational programs, surveys on the quality of the educational process, a responsible attitude to preparing for classes and independent work.

The indicators by which their impact is assessed are:

- the percentage of success of the current control. There are 65%, we expect 68%,
- the percentage of timely passed examinations. There are 70%, we expect 75%,
- the number of annual presentations at conferences. There are 4 speakers, we expect 6 more,
- participation in career guidance activities. There are 2, we expect 3.

The tools of influence of internal stakeholders - teaching staff - are participating in the discussion and updating of educational programs, in the preparation of self-analysis reports for accreditation, involvement of students in scientific work, participation in conferences,

writing articles, training manuals of high quality, preparation and conduct of classes of high quality.

The indicators by which their impact is assessed are:

- the number of VET teachers working part-time at NTU. There are 0, we expect 1;
- the number of teachers who improved their skills during the year. There are 16. We expect 18;
- the number of teachers who provide disciplines of the speciality "Professional education (transport)" and have publications in professional journals. There are 26, we expect 28.

The tools of influence of external stakeholders - VEI - are agreements on cooperation, internships, participation in updating and revision of educational programs (direct discussion or questionnaires), participation of NTU in the Supervisory Boards of software institutions, participation of representatives of software institutions in advisory bodies of NTU.

The indicators by which their impact is assessed are:

- the number of concluded cooperation agreements. There are 1, we expect 3;
- the number of meetings to discuss the content of NTU educational programs. There are 0, we expect annual;
- the number of career guidance activities. There are 0, we expect - 4.

The tools of influence of external stakeholders - state and regional authorities - are the approval of educational standards, accreditation of educational programs, introduction of certification of teachers of software institutions, providing tax benefits to businesses in case of financing the costs of modernization of software institutions. The impact of the stakeholder is assessed by the number of provided public procurement places. There are 0, we expect - 5.

The tools of influence of external stakeholders - employers - are agreements on cooperation, on the provision of material assistance, on internships, participation in updating and reviewing educational programs (direct discussion or questionnaires), participation in the Supervisory Board of NTU.

The indicators by which their impact is assessed are:

- the number of meetings to discuss the content of the EP "Vocational Education (Transport)". There are 2, we expect - every year;
- participation in scientific and career guidance activities of the faculty, university (on average per year). There is 1, we expect 2.

9. EXPECTED RESULTS FROM IMPLEMENTATION OF CONCEPT AT NTU

- Increasing the amount of practical training in the curriculum of the bachelor study programme (there are 15 credits, it is needed to increase by 2 credits).
- Increasing students' satisfaction with the quality of industrial, educational and pedagogical practices (from sufficient (70%) to a high level (80%) (survey)).

- Increasing the share of students participating in conferences (now 20%, increase to 30%).
- Modernization of the didactic office of pedagogical skills (there was no special equipment in the laboratory, there will be an interactive board, laptops).
- Update educational programs and curricula in accordance with the competency-based approach (updated twice every 4 years, it will be updated annually).
- Carrying out of actions for professional career promotion (there was 1 time a year, there will be 2 times a year).
- Expansion of employment opportunities for graduates (1 contract has been signed, 3 more will be signed).
- Creation of a language class for learning foreign languages (there was not).

10. PLAN OF MEASURES FOR IMPLEMENTATION OF CONCEPT

Table 1 - Implementation plan for the realisation of the Concept at NTU

Stage	Task	Period	Responsible
1	Publication and public discussion of the Concept of development of the system of training teachers of vocational education and training at NTU	May-September 2021	Mykola Dmytrychenko, Oleksandr Hryshchuk, Nataliia Bondar,
2	Taking into account suggestions and comments on the Concept of development of the system of training teachers of vocational education and training at NTU	August-September 2021	Mykola Dmytrychenko, Oleksandr Hryshchuk, Nataliia Bondar, Khalidakhon Bakhtiarova, Danylo Savostin-Kosiak Olena Martynenko (by agreement, a representative of the VET institution)
3	Development of Regulations on the Committee for Support of Quality Assurance and Development of Vocational Education Teacher Training, coordination with the Legal Department	September-October 2021	Mykola Dmytrychenko, Oleksandr Hryshchuk, Nataliia Bondar, Viktoriia Boiko Danylo Savostin-Kosiak Olena Martynenko (by agreement, a representative of the VET institution)
4	Development of Regulations on the Committee for Support of Quality Assurance and Development of Vocational Education Teacher Training, coordination with the Legal	October 2021	Nataliia Bondar

	Department		
5	Concluding agreements with specialized vocational education institutions on cooperation in improving the quality of vocational teacher training	August 2020 - December 2021	Khalidakhon Bakhtiarova, Danylo Savostin-Kosiak (by agreement, a representative of the VET institution)
6	Formation of proposals on the composition of the Committee to support quality assurance and development of Vocational Education Teacher Training	October 2021	Mykola Dmytrychenko, Oleksandr Hryshchuk, Nataliia Bondar, Khalidakhon Bakhtiarova (by agreement, a representative of the VET institution)
7	Approval of the composition of the Committee for Support of Quality Assurance and Development of Teacher Training	October- November 2021	Mykola Dmytrychenko
8	Commencement of work of the Committee for support of quality assurance and development of training of teachers of professional education	November- December 2021	Mykola Dmytrychenko, Oleksandr Hryshchuk, Nataliia Bondar, Khalidakhon Bakhtiarova Danylo Savostin-Kosiak, (by agreement, a representative of the VET institution)