

Ishchuk L.P.,

Candidate of Biology Sciences, Assistant Professor Department of Landscape,
Bila Tserkva national agrarian university; Bila Tserkva cit,
ORCID ID 0000-0003-2150-0672

Kurka S.S.,

Candidate of Biology Sciences, Assistant Professor Department of Forestry;
Uman National University of Horticulture; Uman city;
ORCID ID 0000-0002-7722-2483

Ischuk G.P.,

Candidate of Agricultural Sciences, Assistant Professor Department of Forestry;
Uman National University of Horticulture; Uman city;
ORCID ID 0000-0002-4969-0933

FROM THE EXPERIENCE OF TRAINING SPECIALISTS OF FORESTRY AND LANDSCAPE GARDENING

***Abstract.** In this article the experience of practical training of applicants for higher education in educational levels "Bachelor" and "Master" of forestry and landscape gardening in the Belotserkovsky National Agrarian University and Uman National University of Horticulture was analyzed. Considerable attention is paid to the problem of modernization of the content of practical training of specialists in the conditions of the transformation of Ukrainian society, which is carried out under the influence of globalization and integration processes. As a result of the analysis, it was established that the model of practical skills during training in institutions of higher education is formed at four stages. The primary stage of the formation of a model of practical training takes place at laboratory-practical and practical classes, which usually take place in educational laboratories, classrooms and studies, although non-standard classes in the workplace even at this stage help to improve significantly its quality. The second stage of the model of practical training is the consolidation of skills acquired during practical exercises when conducting the training practice. The third stage of the formation of a model of practical skills takes place when performing individual research tasks, calculation and graphic work, courseworks and diploma projects. The final fourth stage of the model of practical training of students occurs through the formation of practical skills in the workplace - while conducting manufacturing practice. Individual scientific research work of students under the supervision of a teacher at forestry and landscape gardening facilities contributes to the development of creative abilities and increases the level of practical training.*

Introduction.

The development of national education in Ukraine, its transformation in order to integrate into the European system increases the requirements for higher professional training of forestry and landscape gardening specialists, their qualitatively different theoretical and methodological support of scientific research activities.

The legal framework for professional training of forestry and landscape gardening specialists in Ukraine are: the Law of Ukraine “On Education” (1996), the Law of Ukraine “On Vocational and Technical Education” (1998), the Law of Ukraine “On Higher Education” (2014) as well as the State National Program “Education” (Ukraine of the 21st Century) (1993), the National Doctrine of Educational Development (2002), the Concept of the Organization of Master Training (2010), the Regulation “On the Approval of the National Qualifications Framework” (2011), the Decree of the President of Ukraine “ about national strategy for the development of education in Ukraine and for the period up to 2021” (2013).

Not far ago , in the institutions of higher education of Ukraine, a forestry and landscape gardening belonged to the same area 6.090103 “ Forestry and Landscape Gardening”, and now these are two separate specialties - 205 “Landscape Gardening” and 206 “Forestry” (Resolution of the Cabinet of Ministers of Ukraine, 2015). Nowadays, more than a dozen institutions of higher education in Ukraine train specialists for work in the system of forestry and landscape gardening at the educational levels of "Bachelor" and "Master" .

Modern pedagogical science and practice face the difficult task of training future specialists for effective professional activity. Ensuring university graduates with the skills necessary on the employment market is an important direction in the reform of education. Today, there is an imbalance between the skills that students develop and the skills they need at the workplace. Therefore, the reform of education shall be in accordance with worldwide trends. Practical skills are determining for professional training of future specialists in forestry and landscape gardening, the formation of which takes place mainly in didactic and methodically competently organized and conducted laboratory-practical and practical classes, training and manufacturing practices and scientific research work. Taking into account the European integration trends of Ukraine, intentions to join the European higher education area, the social importance of ensuring the quality and effectiveness of the domestic system of professional training for forestry and landscape gardening ,the aim of our research was to analyze the experience of practical training of future forestry and landscape gardening specialists using as an example Uman National University of Horticulture and Belotserkovsky National Agrarian University . In Uman National University of Horticulture, the training of specialists of this profile originates from the Uman College of Agriculture and Horticulture, which was transferred from Odessa to the city of Uman in 1868. The substantiation of the model for the formation of practical training for forestry and landscape gardening specialists will help them to approach the conditions of manufacturing.

1. High-quality practical training is the key to the success of future professionals

Nowadays, the education system is in the process of transition from an adaptation educational model to an innovative one, in the most countries of the world. Ukrainian society also requires urgent reforms in the education system, since the level and quality of education is an indicator of social development. Therefore, educational processes in Ukraine should be focused on the training of highly qualified specialists in various fields who promote the development of the Ukrainian state as a whole (Malik, 2017; Tkach, 2018; 2018b). The effectiveness of the implementation of this task is mostly determined by the activation of the role of the competence-based approach, in turn, provides for the organization of the educational process aimed at improving the quality of graduate training, in particular, mastering the competencies that contribute to the successful implementation of professional activities (Prigodiy, 2014). At the present time, international experts in the world forums are discussing changes that need to be implemented in education, and even published a list of skills for future specialists necessary until 2020, where, among others, they point out the need for creativity in professional activities. Therefore, today there is a real obligatoriness to substantiate the model of the formation of practical training at the educational levels of "Bachelor" and "Master" in forestry and landscape gardening for its further implementation in the educational process.

In connection with the necessity to increase the forest cover of the Earth and to improve the attractiveness of gardens and parks, which in Ukraine usually have a centuries-long history, and to develop new ones, professional training of qualified specialists of forest and landscape gardening at the present time is relevant both in theoretical and in practical. Different approaches to the definition of the essence of the concept "skill" and its classifications in modern didactics were developed by such scientists as Yu. Babansky, I. Lerner, N. Loshkareva, V. Palamarchuk, A. Savchenko, and others, who grouped the skill according to various characteristics. (Polupan, Vygovskaya, 2016). However, they all agree that practical training is very important for the professional training of students, because success in this profession depends mainly on the ability of a specialist to create or design plants, carry out appropriate thinning, shaping trim, to place plants in the interior or exterior and the like.

The practical skills of future specialists in forestry and landscape gardening are important for the training of a competitive specialist in the forestry and landscape gardening industry. Special attention is paid to the practical training of students of these specialties at the III-IV year of the educational level "Bachelor" and the III course of the educational level "Master", where according to the educational and professional program and curriculum special disciplines are taught.

Practical skills include: mastering the skills and abilities of a creative nature; the acquisition by students practical skills by direct involvement in the process of professional activity; possession of technical training equipment, computer graphics, management of

Computing and Information Systems; development of students' ability to use their theoretical knowledge practically, to start mastering their future profession in educational laboratories equipped with the necessary technical devices and tools (Polupan Vygovskaya, 2016).

The educational institutions are faced with the task of creating conditions in which the professional and personal qualities of students who are in demand in the employment market in this particular area are developing. Forestry and landscape gardening specialists should receive integrative professional training in designing and creating all types of plantings, maintenance and management in various forests, creation, reconstruction, restoration and conservation of landscape gardening objects, growing seedlings using the latest technologies. Therefore, one of the main criteria for the success of a forest and landscape gardening specialist's activity are achieved practical skills.

Scientists and educators interpret the concept of "skill" in different ways, but its essence does not change. So, E. Boyko, considers "skill" as a manifestation of activity in all possible ways; Yu. Babansky - as a conscious possession of any method of activity; M. Kagan - as the unity of knowledge, expertise and abilities of the individual; N. Kuzmina - as a new fusion of knowledge, skills, expertise, experience and creative abilities of a person (Babansky, 1987; Polupan, Vygovskaya, 2016). Summarizing what has been said, it can be stated that a skill is a method of performing an action learned by a subject, provided with a set of acquired knowledge and expertise.

Formation of skills happens through exercises, creating opportunities to perform an action not only in the usual, but also in a modified non-standard conditions, where they are revealed through dedication, awareness, ability of the individual to generalize and realize the creative nature of the activity (Koziy, Vygovskaya, 2011).

According to the classification of skills, there are several approaches. Babansky Yu. (1987) identifies educational and organizational, educational and intellectual, educational and informational, and educational and communicative skills. Nikitina O. (2012) splits the ability to constructive, communicative, organizational, didactic, perceptual, suggestive, cognitive, practical skills in the field of technology.

Let's analyze more detailed the formation of a model of practical training for students of forestry and landscape gardening on the example of the Belotserkovsky National Agrarian University and Uman National University of Horticulture, where the training of forestry and landscape gardening specialists is deeply rooted.

As a result of the analysis, during training in institutions of higher education it was established that the model of practical skills is formed at four stages. The primary stage of the formation of the model of practical training takes place in laboratory-practical and practical classes, which usually take place in educational laboratories, auditoriums and classrooms. However, there are innovative classes.

In the Belotserkovsky National Agrarian University, about 30% of practical classes take place outside classrooms and laboratories - in a greenhouse, at a biostationary, in garden centers, architectural bureaus, in educational and experimental forestry, where students directly acquire practical skills in plant reproduction and growing, care for plants, the basics of design and composition. For this purpose, the university has its own training base - a biostationary with an area of 1.9 hectares, where about a thousand one, two- and perennial species, forms, varieties and cultivars of ornamental plants and educational and experimental forestry with an area of 270 hectares are represented. A collection of 32 species, forms and cultivars of ornamental coniferous plants, 85 species and forms of a cotoneaster, 15 varieties of roses, 6 varieties of magnolia trees is collected at the biostationary of the Belotserkovsky National Agrarian University. The collection of floral and ornamental plants includes about 50 species, forms and cultivars of annual, 20 biennial and more than 600 species, forms and cultivars of perennial flower and ornamental plants. Among the annuals, the largest collection is the collection of Chinese asters, which amounts 180 varieties and hybrid varieties of domestic and foreign breeding, as well as 100 varieties of cultural dahlias and 32 species and varieties of marigolds, 20 varieties of cannes, etc. (Ischuk, 2011b; Oleshko, 2012).

At Uman National University of Horticulture, the own production base for applicants for higher education in specialty 205 "Forestry" is a nursery of the Department of Forestry and the Belogradovskiy Forest of the university's production department with an area of 462.4 hectares, among which: 8.2 hectares of shelter belts and 18.7 hectares protective belts of forests of highways of national importance (Shlapak, 2017).

In addition, students have the opportunity to undergo practical training in a number of state forestry enterprises: "Umansky forestry", "Lisyansky forestry", "Zvenigorodsky forestry" and "Smelyansky forestry" of Cherkassy regional forestry and hunting management; "Ilinty Forestry", "Gaisinsky Forestry" and "Bershad Forestry" of Vinnitsa Regional Department of Forestry and Hunting; "Savransky Forestry" of the Odessa Regional Department of Forestry and Hunting; "Belotserkovsky forestry" of the Kiev Regional Department of Forestry and Hunting; "Golovanevskoe Forestry" of Kirovograd Regional Department of Forestry and Hunting.

The collector's areas of the Department of landscape gardening and hothouse-greenhouse complex is an in-house productive base for applicants for higher education for specialty 206 "Landscape Gardening" in Uman National University of Horticulture. The total area of greenhouses is 775 m², including:

- greenhouse No. 1 - 255 m² (collection of citrus: lemon; oranges, grapefruits, tangerines, more than 34 taxons in total)
- greenhouse No. 2 - 272 m² (collection of subtropical plants: kiwi, persimmon, pomegranate, fig, ziziphus, etc.)

- greenhouse No. 3 - 248 m² (is under reconstruction, it is supposed to be used for laying a collection of subtropical and tropical fruit and ornamental crops).

Hothouses - the total area is 324.9 m², including No. 1 is 72.9 m² (a collection of succulents and xerophytes); No. 2 - 57 m² (is used to adapt ornamental plants); No. 3 - 65.1 m² (for hardening of plants); No. 4 - 66 m² (seedling section , a kiwi nursery and premises for growing plants); No. 5 - 63.9 m² (Cycas hothouse, palms with an average age of 250-260 years).

Now in the hothouse-greenhouse complex of Uman National University of Horticulture grown plants from more than 40 families.

Forestry and landscape gardening specialists must have a number of practical skills, in particular, they must know the theory and be able to perform all types of work that relate to the management of forestry enterprises, green building, botanical gardens and dendrological parks.

The new Law of Ukraine “On Higher Education” (2014) offers institutions of higher education substantial autonomy, which allows them to compile independently educational and professional programs and working curricula. The curriculum introduces a cycle of humanitarian and socio-economic disciplines, a cycle of disciplines on natural science, a cycle of professionally oriented disciplines, normative disciplines and selective disciplines for choosing by educational institution and students. Exactly the cycle of professionally oriented disciplines, normative and selective disciplines provides professional practical training of students.

According to the requirements of professional training of forestry and landscape gardening specialists and in accordance with the educational and professional programs and curricula, laboratory-practical and practical classes are held at the following disciplines: “Forestry”, “Forest Studies”, “Mechanization of Forestry Works”, "Forest Taxation", "Basics of Hydrotechnical Melioration", "Aerospace Methods in Forestry", "Information Technologies in Forestry", "Basics of Forest Exploitation", "Dendrology”, “ Decorative Dendrology ”, “ Ornamental Horticulture”, “ Floriculture ”, “ Gardening of Populated Places ”, “ Landscape Graphics ”, “ Landscape Architecture ”, “ Computer Graphics ”, “ Topiary Art ”, etc. (Table 1) . During laboratory-practical and practical classes on mentioned above disciplines, future specialists of the forest and landscape gardening study the range of introduced and native ornamental plants, design and create forest crops and green construction objects, learn how to manage properly the forest in various economic purposes, provide care about green sculptures, dense linear plantations; create frames for interior decoration; get acquainted with the technology of the formation of various sculptures of grassy and woody plants; cut plants; perform the graphic part of the design and working documentation of landscape projects in accordance with the applicable standards and using graphic means of the visual arts. The leading teachers developed guidelines for the implementation of practical work to the study of each discipline

Table 1.

The distribution of time by types of practical training of students among the disciplines of the professional cycle of educational levels "Bachelor» and «Master

The name of the discipline	Course / Semester	Number of credits ECTS	Hours				
			lecture	practice	training practice	individual work	Total
Specialty 205 "Forestry", educational level "Bachelor"							
Basis of Vocational Education	I/2	3,0	28	28	30	42	128
Forest Phytopathology	III/1	4,0	34	34	24	76	168
Forest Entomology	III/2	2,5	26	26	18	36	106
Greening of inhabited areas	III/2	2,5	26	26	30	38	120
Nature Reserve Study	IV/2	2,5	20	20	-	50	90
Forest Studies		7,0	51	51	30	150	282
Forestry Economics	IV/1	4,5	51	34	-	77	162
Forest Selection	II/2	3,5	36	36	30	54	156
Forest Zoology	II/1	2,5	34	17	-	39	90
Basics of Labor Protection	IV/2	2,0	20	20	-	32	72
Mechanization of Forestry Work	II-III/2-1	7,5	70	70	-	130	270
Basics of Hydrotechnical Melioration	II/2	4,0	36	36	-	72	144
Aerospace Techniques in Forestry	IV/1	2,0	17	17	-	38	72
Forest Melioration	III/2	3,0	39	26	-	43	108
Organization of Forestry Production	IV/2	4,5	40	40	-	82	162
Information Technology in Forestry	IV/1	3,5	34	34	-	58	126
Basics of Forest Exploitation	IV/2	2,5	20	30	-	40	90
Forest Taxation	III/1-2	7,0	60	73	30	119	282
Forestry	III- IV/1-2	4,0	39	39	30	66	174
Basics of Biotechnology	II/2	3,0	36	18	-	54	108
Forest Crops	IV/1-2	11,5	107	107	30	200	444
Forest Management	IV/1-2	7,5	64	81	30	125	300
Total		94	888	863	282	1621	3654
Specialty 205 "Forestry", educational level "Master"							
Labor Protection in the Industry	I/2	3,0	14	14	-	62	90
Forest Office Management	I /2	4,0	26	26	-	68	120
Biological Basis of Thinning	II /2	3,0	14	14	-	62	90
Regional Forestry	I /2	4,0	18	26	-	76	120
Forest and Park Farm	II/1	3,0	14	62	-	56	132
Geobotanics	I /1	3,0	16	14	-	60	90
Management of Forests' Productivity	I /1	4,0	28	14	-	78	120
Methodology of Scientific Researches	I /2	3,0	16	14	-	60	90
Information Technology in	I /2	3,0	14	14	-	62	90

Forestry							
World Forestry	I/1	3,0	14	14	-	62	90
Rubber Tapping and Forest Chemistry	I/1	3,0	16	16	-	58	90
Logging	I/2	3,0	14	14	-	62	90
The Basics of Wood Processing	I/1	3,0	16	14	-	60	90
Forest Ecology and Forest Typology	II/1	3,0	22	20	-	48	90
Psychology of Management	II/2	3,0	12	10	-	68	90
Forestry in Radioactive Contaminated areas	I/2	3,0	16	14	-	60	90
Forest Certification	I/2	3,0	14	14	-	62	90
Aerospace Forest Monitoring	I/1	3,0	14	14	-	62	90
Forest Ecosystem Modeling	I/1	3,0	18	28	-	44	90
Forest Certification	I/2	3,0	14	16	-	50	80
Continuous Forest Management	I/1	3,0	16	14	-	60	90
Organization of Non-Timber Forest Use	II/1	3,0	22	20	-	48	90
Professional Terminology	II/1	3,0	12	20	-	58	80
Total		72	380	426	0	1386	2192
Specialty 206 "Landscape Gardening Economy", educational level "Bachelor"							
Basics of Training	I/2	3,0	28	30	60	128	246
Wildlife of Gardens and Parks	II/2	2,5	34	17	-	39	90
Mechanization of landscape gardening work	II-III/2-1	6,0	53	69	30	94	246
Dendrology	II/1	5,0	34	34	30	112	210
Decorative Dendrology	II/2	6,0	54	54	30	108	246
Selection and Genetics of Woody Plants	II/2	3,5	36	36	30	54	156
Basics of Biotechnology	II/4	3,0	36	18	-	54	108
Basics of Art	III/1	3,5	34	34	-	58	126
Decorative Nurseries and Seed Production	III/1	3,5	34	34	-	30	98
Phytopathology of Ornamental Plants	III/1	4	34	34	12	76	156
Fundamentals of Urban Planning	III/1	2,5	36	18	-	36	90
Hydro-Technical Installations of Gardens and Parks	III/2	2,5	36	18	18	36	108
General Floriculture	III/1-2	3,0	34	17	24	57	132
Forestry	III/1-2	4,0	39	39	30	66	174
Industrial Floriculture	III/2	2,0	13	26	-	33	72
Landscape taxation	III/2	2,5	36	18	-	36	90
Grassland and lawns	III/2	3,0	26	26	24	56	132
Entomology of Ornamental Plants	III/2	2,5	26	26	12	38	102
Greening of inhabited Areas	III/1	2,5	26	26	30	38	120
Recreational Forestry	III/2	3,0	26	26	-	56	108
Reforestation and forestation	III/1	2,0	13	26	-	33	72
Landscape Architecture	III-IV/2-1	6,0	60	60	30	96	246
Inventory of Green Plantation	IV/1	3,0	26	26	-	56	108
Economics of Landscape Gardening	IV/1	4,5	51	34	-	77	162

Introduction and Adaptation of Ornamental Plants	IV/1	3,0	17	54		57	128
Basics of Flower Arrangement	IV/1	2,0	-	34	-	38	72
Nature Reserve Study	IV/1	2,5	20	20	-	50	90
Landscape Gardening Construction	IV/1-2	3,5	34	17	30	39	120
Basics of Labor Protection	IV/2	2,0	20	20	-	32	72
Indoor Ornamental Plants	IV/2	3,5	34	34	-	58	126
Urban Ecology and Phytomelioration	IV/2	1,5	20	20	-	24	64
Topiary Art	IV/2	1,5	20	20	30	24	94
Basics of Composition	IV/2	1,5	20	20	-	24	64
Engineering Equipment of Landscape Gardening Objects	IV/2	1,5	10	20	12	24	66
Total		102,5	1020	1005	432	1837	4294
Specialty 206 "Landscape Gardening ", educational level "Master"							
Methodology and Organization of Scientific Researches	I/1	3,0	16	14	-	62	92
Soil and Soil Mixtures	I/1	3,0	28	14	-	62	104
Dendroproject	I/1	3,0	28	14	-	62	104
Computer Technology of Landscape Gardening Objects	I/2	3,0	-	26	-	64	90
Greenhouse	I/2	3,0	26	13	-	64	103
Operation of Landscape Gardening objects	I/2	3,0	26	26	30	38	120
Ornamental Gardening	I/2	3,0	14	26	-	50	90
Forestry and Gardening	II/1	3,0	20	10	-	100	130
Indoor Phytodesign	II/1	4,0	30	10	-	90	130
Reconstruction and Restoration of Landscape Gardening Objects	I/1	4,0	28	28	-	64	120
Reclamation of Disturbed Landscapes	I/2	3,0	14	14	-	62	90
Shaped Variety of Trees and Bushes	I/1	3,0	12	14	-	64	90
Green Farm Planning	I/1	4,0	20	20	-	80	120
Agrotechnics of Green Building	I/2	3,0	12	14	30	64	120
Landscape Design	I/2	3,0	12	14	-	64	90
Modern technologies in Decorative Nursery	I/2	5,0	28	28	-	94	150
Integrated Protection of Ornamental Plants	II/1	5,0	10	20	-	120	150
Park Science	II/1	5,0	10	20	-	120	150
Total		63	334	325	60	1324	2043

Practical classes contribute to the formation of practical skills of future specialists in forestry and landscape gardening, during which the teacher organizes a detailed examination of individual theoretical positions of the academic discipline by students and forms the ability and skills of their practical application by individual fulfillment by the students corresponding tasks. In the process of training specialists for forestry and landscape

gardening , it is very important that students have direct contact with plants, they are able to see and study one or another species. Therefore, along with laboratory and practical classes, training and practical training are of considerable importance for the development of practical skills of forest and landscape gardening specialists.

In order to determine the best students from theoretical and practical training, students of II-IV courses of educational level "Bachelor" and of I-II courses of educational level "Master" participate annually in the II stage of the All-Ukrainian Olympiad in forestry and landscape gardening , which is held among agricultural higher educational institutions of Ukraine. It has become a good tradition to hold All-Ukrainian competitions in forest all-around every year, where students demonstrate their knowledge and skills in planting and pruning trees and bushes, felling and so on in Uman National University of Horticulture.

The second stage of the formation of a model of practical training is the consolidation of skills obtained at practical classes during educational practice. According to the curriculum for the preparation of bachelors, training practices are provided for by the disciplines "Basics of professional training", "Forestry", "Forest Selection", "Forest Crops ", "Forest Management", "Dendrology", "Floriculture", "Grassland and Lawns", "Decorative Seedlings Growing and Seed Growing", "Landscape Gardening Architecture", "Topiary Art", "Landscape Architecture", "Inventory of Landscape Gardening Objects", "Phytopathology of Ornamental Plants", "Entomology of Ornamental Plants", "Forest Phytopathologists", "Forest Entomology", "Forest Inventory", "Forest Science". At the second educational level "Master" educational practices are provided for the disciplines "Operation of landscape gardening objects", "Agricultural engineering of greenery construction", "Forest-Park Economy". Detailed methodological guidelines have been developed for conducting educational practice on each discipline (Rogovskiy et al., 2010; Ischuk, 2011; Ischuk, 2013b).

The third stage of the formation of a model of practical skills happens after implementation of individual research tasks for each discipline within the time allotted for independent work of students, calculation and graphic works, course and diploma projects. Students acquire skills in conducting phenological monitoring of plants, in reproducing and growing ornamental plants of in-door type, collecting seeds, herbarium, developing projects, making calculations, and so on.

Students continue to acquire practical skills when writing calculating and graphic works and course projects on the following disciplines: "Decorative Dendrology", "Landscape Architecture", "Landscape Gardening Construction", "Greenery Agricultural Engineering", "Forestry", "Forest Crops", "Forest Management", "Forest Management", "Forest Reclamation", where each student receives a real object for the development of projects and calculations. The tutor of the course prepared guidelines for writing calculation and graphic works and course projects on each discipline (Ischuk 2013; Ischuk, Hahula 2013).

The fourth final stage of the formation of the model of practical training of students occurs through the formation of practical skills in the workplace - while conducting manufacturing practice in the third year of the educational level "Bachelor" and the first course of educational level "Master". Universities collaborate with a broad network of practice bases of public and private property and scientific institutions with which cooperation agreements have been concluded. First of all this is a system of state forestry and agroforestry in Cherkasy, Kiev, Kirovograd, Vinnitsa and Odessa regions, as well as the National Dendrological Park "Sofiyivka", the State Dendrological Park "Alexandria" and the National Botanical Garden named after N.N. Grishko NAS of Ukraine, Botanical Garden named after Acad. A.V. Fomin of Kiev National University named after Taras Shevchenko, private garden centers "Eva", "Harmony", "Edem-Flora", "Green Country", "Bee", private enterprise "Liris", agrofirma "Rassvet". Rather often after manufacturing practice specialists are invited to work and are employed in these institutions and organizations. All the questions of manufacturing practice, design of reporting documentation are also detailed in the relevant methodological recommendations (Shlapak et al., 2016). The materials collected by students during manufacturing practice are used for graduation diploma project, the method of implementation of which is also detailed in the methodological recommendations (Shlapak et al., 2018, Rogovskiy et al., 2017).

Thus, a sufficient amount of time is paid for practical training of future specialists in forestry and landscape gardening at the Belotserkovsky National Agrarian University and Uman National University of Horticulture, the main condition for its successful use, in our opinion, is the continuity of this process during laboratory-practical and practical classes, educational and manufacturing practices and course and diploma projects in close cooperation with production.

2. Scientific- Research Work and Development of Creative Abilities

Forestry and landscape gardening specialists are facing so complex tasks put by modern production that their solution requires creative search and research skills. In this regard, a modern specialist should have not only the essential fundamental and expertise knowledge, but also certain skills of creative solution of practical problems, constantly improve their skills, quickly adapt to new conditions. All these skills are formed in the institution of higher education. Among the variety of forms and methods of training, special attention is paid to scientific-research work in the forestry and landscape gardening industry. The right combination of students' educational and research work is one of the main conditions for improvement of the quality of training.

The question of determining the criteria, indicators and assessment levels of students' professional activities was highlighted in the works of Kovalchuk (2016), M. Prigodiya, P. Vasyuchenko (2010). Creativity and creative development were also analyzed by S. Sysoev et al. (2001). Criteria, indicators and levels of development of professional creativity were highlighted by S. Amelina et al. (2015), A. Popova (2006), the works of M. Tkach (2018;

2018b) are devoted to specific issues of teaching and training specialists of landscape gardening, but so far, the question of assessing and controlling the formation of professional creativity, namely, future specialists of the forestry and landscape gardening remain unresolved.

In modern conditions, the scientific- research work of students is transformed from a means of developing the creative abilities of the most successful and gifted students into a system that will improve the quality of training for all specialists with higher education.

Students' research work includes elements of teaching students the basics of research, as well as imparting them certain skills and also performing scientific researches conducted under the guidance of teachers. Consequently, the forms and methods of attracting students to scientific creativity can be divided into scientific- research work included in the educational process and, therefore, included in study hours in accordance with educational and professional programs and curricula (special lecture courses on the fundamentals of scientific research , various studies with elements of research, educational and research work of students), as well as research work performed by students during extracurricular hours . The educational and research work of students is implemented into the schedule of classes and is carried out by each student on a special assignment under the supervision of a research supervisor - assistant professor or professor of the department. At the second educational level “Master”, the curricula of the Uman National University of Horticulture and the Belotserkovsky National Agrarian University one day per week for individual research and development is provided. The main task of the scientific- research work is to teach students the skills of independent scientific work, introduction into the real working conditions in laboratories and in research teams. In the process of performing educational researches, future specialists learn to use devices and equipment, individually conduct experiments, process their results, and apply knowledge in solving specific problems.

All students conduct research on three interrelated levels: experimental, theoretical, and descriptive-generalizing. At the experimental level, they experiment, accumulate facts, analyze them, make generalizations and draw practical conclusions. Experiments on specific objects are called physical. They also use imaginary experiments.

At the theoretical level, knowledge is synthesized, general patterns on the forestry and landscape gardening industry are formed. The theory is a system of generalized knowledge. Therefore, the results of certain experiments are summarized in a certain theory. The criterion for the correctness of a scientific theory is an experiment and a practice. Thus, the theory is used for in-depth reflection of the results of the experiment, in turn, the experiment is the starting material for constructing a theory. However, the theory cannot be reduced to the sum of experimental data; it is a qualitatively new level of knowledge of an object or a certain phenomenon (Kovalchuk, Moiseyev, 2008). Depending on the cognitive or practical purpose, scientific research is provisionally divided into fundamental and applied. The conventionality of such a division is that at certain stages fundamental research can be transferred to applied ones and vice versa.

This shows the linkage of scientific knowledge and practice. Fundamental researches are aimed at studying new phenomena and discovering the laws of nature, expanding knowledge about the world around us. As a result of fundamental research, detailed scientific works are created for usage in a certain sphere. The results of these researches are used to develop new technologies for growing certain ornamental crops as "*ex situ*" and "*in situ*". When new phenomena are studied, fundamental research is often carried out at the border of the known and the unknown, they have the highest degree of uncertainty and therefore require a great strain of mind and heightened intuition from the researcher.

The fundamental research also includes free theoretical research which sure is headed by an eminent scientist and is conducted on the basis of his ideas. The tutor of the problem pre-determines the very theory of the problem. The school of foresters in Uman National University of Horticulture is headed by Doctor of Agricultural Sciences, Professor V. Shlapak, who has guided the defence of more than a dozen Ph.D. dissertations on the problems of forestry, afforestation, introduction in the conditions of the right-bank Forest-Steppe and the Steppe of Ukraine. There is a student troubled group at the Department of Forestry Uman National University of Horticulture under the guidance of prof. Shlapak V.P. that deals with the improvement of reforestation and afforestation in the region.

Phenomena occurring in nature, that is outside the experiment are studied at the descriptive-generalizing level of research. This is an observation of the growth and development of plants depending on the weather, the passage of phenological phases, frost resistance, drought resistance of plants in nature and the like. For such observations experiments are not needed, here the researcher registers and consolidates only those phenomena and forest and landscape gardening objects that exist without an active influence on the change of these phenomena.

Usually experts in the sphere of forestry and landscape gardening are engaged in applied research and development of creative projects. Students present their projects at the annual scientific and practical conferences "Prospects for the Development of Forestry and Landscape Gardening", "New technologies in Plant Breeding", which traditionally take place in spring at Uman National University of Horticulture and Belotserkovsky National Agrarian University. Future forestry and landscape gardening specialists participate actively in student seminars and conferences at the National University of Bioresources and Environmental Management, Lviv Forestry University. It was in 2016, when the first-year student of the educational level "Master" of the Agrobiotechnology Department of the Belotserkovsky National Agrarian University Daria Ptychnyk became the winner of the All-Ukrainian competition "The Best Student of the Year", and the project of the reconstruction of the square near the main building of the Belotserkovsky National Agrarian University which she presented (tutor of project Zhikhareva K.V.), took the honorable first place among the student design work of the agricultural higher educational institutions of Ukraine.

Of particular importance are the graduation projects that students of the second master's educational level carry out, a significant amount of which is performed by request of institutions, organizations, enterprises of various forms of ownership. In such projects, students are attached to the formation of landscapes of industrial and residential complexes, highways, create tourist complexes, restore historical sites, in particular palace and park complexes, green cities and villages, develop the introduction process based on scientific collections of botanical gardens and dendroparks, reproduce natural complexes on destroyed, man-made, devastating landscapes and the like.

Increasing the effectiveness of training and ensuring the competitiveness of future professionals is based mainly on new educational solutions, based on the mastery of the capabilities of modern technique and technology. Required material and technical basis has been created, classes have been established for teaching graphic ,courses and diploma projects-all these were done for training students in Uman National University of Horticulture and the Belotserkovsky National Agrarian University .Every year the best masters thesis projects are exhibited at the All-Ukrainian competitions of architectural schools. The use of modern design computer programs ARCHICAD, LEND DESINGER, VISIO, SCHEDULER, OUR GARDENI is very important for the development of creative abilities in the research work of students. They allow to predict and simulate the growth and development of green belt both seasonally and according to the age of ornamental plants.

Thus, research work in conditions of an case-by-case approach to each student develops creative abilities and improves the quality of training of all forestry and landscape gardening specialists.

Conclusion.

The examining of the content and process of training future forestry and parks and horticultural experts through analysis of curricula, educational and professional programs, organizational and methodological support, practices and individual and scientific research work of students showed a concentration on the educational-operational aspect and the enhancing the role of knowledge and their workout in the system of practical training that allows to develop fully the model of practical vocational training by means of normative and variational disciplines of the professional cycle as the educational level "Bachelor" and the educational level "Master".

The experience of practical training of forestry and landscape gardening specialists at Uman National University of Horticulture and Belotserkovsky National Agrarian University shows that only continuous practical training in various forms - classroom laboratory - practical and practical classes, training and manufacturing practices, and individual scientific research work under the teacher's supervision at the objects of forestry and landscape gardening allows to raise the level of the vocational training in a qualitative way and this is a guarantee of their successful employment.

An individual approach to scientific research work contributes to the development of creative abilities, increases the interest and vocational approach of students to the production issues of growing and selecting ornamental plants, designing, building and operating components of plant communities and engineering equipment at forestry and landscape gardening facilities.

However, the analysis carried out does not exhaust the whole completeness of the problem of vocational training for forestry and landscape gardening specialists. It is advisable to move to a dual education system in the context of further improvement of the model of practical training of forestry and landscape gardening experts. According to regulatory documents, dual education supposes that 60-70% of the training time of forestry and landscape gardening specialists simultaneously study and work at workplaces, and only 30-40% of educational time is given to theoretical training in higher education institutions.

It is also necessary in the future to improve significantly the physical facilities of higher education institutions; attracting teachers and students to the professional study of foreign languages will allow them to participate in international educational programs, projects, competitions, internships, and establish cooperation in the sphere of practical training of specialists in universities of the European Union.

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