

Features of the professional training of future technicians and mechanics in college

1. Formulation of the problem in the general form

The importance and content specific professional training of future technicians and mechanics in Agricultural College caused by the needs of modern agriculture and the need for its technology and technical support. World Agriculture technically was converted in the late twentieth century. The growth of high-quality agricultural machinery poses new tasks before qualified technicians and mechanics to serve the said machinery and equipment.

2. Analysis of recent researches and publications

Professional training future technicians and mechanics in colleges become developed due to the development of a competency model of specialist. Various aspects of this problem are presented in the scientific literature S.B. Litvinchuk, A.A. Humenyuk, P.H. Luzana, I.I. Palamar and others. Professionally applied physical training of future technicians and mechanics became the subject of research V. Khomych [Хомич 2009]. In specifics of training of specialists in Agrotechnical Colleges pays attention in his research the L.S. Kolodiychuk [Колодійчук 2000]. Requirements for general professional training of technicians and mechanics are presented in the studies I. Kozlovsky [Козловская 2007].

The aim of the article is the substantiation of the specific professional training of future technicians and mechanics in Agrotechnical Colleges.

3. The main material

Technicians and mechanics in Agrotechnical Colleges are preparing on specialty 5.10010201 „Maintenance and repair of machinery and equipment of agroindustrial production” with the qualification „technician-mechanic”. Duration of training usually is 3 years and 10 months on the basis of 9 grades and 2 years and 10 months – based on full secondary education. Defined of specialists is also trained in „Mechanization of agriculture”. Technician-mechanic trained in college can perform the following activities: manufacture of machinery and equipment; specialized repair of engines and turbines; specialized repair of tractors and other agricultural machinery; specialized repair machines for processing

of agricultural products; overhaul of trucks and cars; production of transport equipment; trade transportation vehicles; repair service and maintenance of cars.

According to the analysis of the experience of college where there is professional training of technicians and mechanics, Bachelor in technicians and mechanics prepared agricultural colleges for professional work in the field of mechanization of production processes in crop production, animal husbandry, subsidiary companies, maintenance and repair of machine and tractor fleet and its storage.

The domestic agricultural colleges have gained considerable experience in the formation of professional competence of future technicians and mechanics. Among the best of them it can be called such universities as: Agricultural College of Uman Agricultural University, Borshchiv Agrotechnical College, Nemishaivo Agrotechnical College and others.

Technicians and mechanics are prepared not only in agricultural colleges. Thus, you can get listed specialty and in the road, and in industrial educational institutions of I–II levels of accreditation. In these educational institutions technicians and mechanics are the result of training in the specialty 5.07010602 „Maintenance and repair of motor vehicles and engines”. Technicians and mechanics in Road College in this specialty are prepared to work in the automotive industry for positions: mechanic, mechanics in repair of vehicles, technician-designer, engineer in production, engineer of motorcade, Master of in-service training.

In polytechnics and technical colleges future technicians and mechanics also receive specialty 5.07010602 „Maintenance and repair of motor vehicles and engines”. In this case graduate in this specialty is able to engage in servicing cars and engines and occupy in the future positions of mechanics, mechanics automotive columns (garage), mechanics in repair the vehicle, mechanics of station, mechanics of craft, mechanics of manufacturing, engineering-design (mechanics), technologist (mechanics), technique for the preparation of manufacturing, Inspector of Labor Protection, inspector of road, industrial training instructor, Master of industrial training, instructor practical driving training, master in training ground, Head of garage, Head of Transport Department, Head of manufactory, head of the work change, production line supervisor, the master in repair of transport, master of operation and maintenance of machines and mechanisms, master of the work change, control master (in station and in craft), master of the basic production unit, master of the craft.

Basic requirements for the qualification of future technicians and mechanics laid in its educational and skill characteristics. As stated in the regulations, the result of training in the Agrotechnical Colleges is a junior specialist – the person who on the basis of secondary education received incomplete higher education, special skills and knowledge sufficient for production functions certain level of professional activity that provided for primary positions in specific areas of eco-

conomic activity. Future technician mechanic can carry out his professional activity on the basis of the received vocational training on several levels, such as:

- 1) stereotypical level (level of using) – ability to use the established system (object of activity) when you perform certain tasks and knowledge destination object and its key (performance) properties;
- 2) operator level – ability to prepare (debug) the system and gain control over it when you perform certain tasks and knowledge of the principle (basic features) of construction and operating principle system on structural and functional level;
- 3) exploitative level – ability during the execution of activity certain tasks to test and analyze the system in order to detect and eliminate damage and knowledge of methods of analysis of the system and analysis methods to identify and correct damage;
- 4) technological level – ability during the execution of activity certain tasks to carry out the development of systems that meet specified characteristics (properties), and knowledge of methods of synthesis and development of technologies and methods for their modeling;
- 5) research level – ability to conduct research of systems to verify their compliance with specified properties, the ability to choose from multiple a system permitting most effectively solve the problem of activity, knowledge of research methodology and methods of evaluating the effectiveness of their use in solving specific problems.

During the vocational training of future technicians and mechanics should be formed by certain professional skills that form the basis of its professional competence, such as:

- 1) subject-practical – ability to perform actions on the movement of objects in space, changing their shape and so on. Major role in the regulation of subject-practical actions perform actions perspective insults that reflect the spatial, physical and other properties of objects and provide control by work movements in accordance with the properties of the object and tasks of activity;
- 2) subject-intellectual – ability to perform operations on mental images of objects. These actions require a developed system of ideas and the ability to intellectual actions (e.g., analysis, classification, summarization, comparison etc.);
- 3) symbolic and practical – ability to implement the operations with signs and sign systems. Examples of these actions is writing, laying the course on map, obtain information from devices etc.;
- 4) semantic-intellectual – ability on intellectual operations with signs and sign systems. For example, the actions that are required to perform logical and settlement operations. These actions allow solving a wide range of tasks in summary form.

Professional training of future technicians and mechanics in Agrotechnical Colleges is based on their professional functions that they performed on the basis of the existing professional skills and professional competencies. The leading

professional functions of future technicians and mechanics can include the following: Designing, organizational, managerial, executive and technical.

Considering that we have chosen to analyze the subject of our research the competence approach as a basic, specific professional training of future technicians and mechanics in college can be made on the basis of professional competency model. In the report of International Commission on Education for the twenty-first century, this model is implemented for the realized the ability to learn, to do, to live together and to be [Делор 1996]. Competency model of modern specialist is based on the need to develop a generalized model of quality professional training specialist and competitive labor market. By this model differs from specified models of activity or qualifying models. Qualification model is based on an educational program the contents of which combine three basic cycles: humanities, natural sciences, and the cycle of professional and practical training. Competency model involves a combination in the content of professional training of general education basic education and elective units which also have their internal components.

The relationship of these blocks in the preparation of future engineering-mechanics can be represented within the specialist competency model: general education block – deals with the following generated within the limits competence of the mastering the block: general scientific, humanitarian, general cultural, social and personal, communication, systemic, organizational and managerial, economic; block of professional training – respectively for basic and special vocational and profile competence of specialist; facultative block – for the satisfaction of personal educational interests of students.

Effective formation of professional competence of future technicians and mechanics in Agrotechnical Colleges happens if is provided a set of specific conditions, such as:

- Renewal the content of disciplines in the system of preparation of technicians and mechanics through development of programs in the disciplines of professional cycle;
- development of modular courses that have a common terminology, legislation that provides some continuity in the formation of professional competence from course to course, from one discipline to another;
- using methods and forms of activation the teaching and cognitive activity of students, such as game design future professional activity, various types of educational games, updated methods of visibility etc.;
- creation of a special case-base of each future technicians and mechanics during vocational training particularly in the course of production practices.

Formation of professional competence of future mechanical engineering in college depends the level of development of the learning environment of each institution. According to the analysis of scientific literature, educational environment – is an area of life activities of future specialist which represents the indirect cultural relations with the outside world and includes two full parts –

material and technical, and technological. Logistics component of the educational environment – it is teaching and material base of the college, including laboratories, offices, where is represented the corresponding profession technician-mechanic equipment; technical means of training, especially computer and video equipment, as well as natural visibility; educational-methodical complex (corresponding literature, programs, development). The technological component of the educational environment of agricultural college provides its relationship with real agro-industrial complex – both on the spontaneous and organized level, i.e. at the level of practical training.

Conclusions

Thus, the specific formation of professional competences of future technician mechanics in Agrotechnical Colleges defined his future professional functions and features of the educational process at the appointed educational institution. Prospects for future research are seen by us in the development of diagnostic methods for the detection of the level of formation of professional competence of Electrical and future technicians and mechanics while studying at Agrotechnical Colleges.

Literature

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Abstract

The article presents the characteristics of professional training of future technicians and mechanics in Agrotechnical Colleges. Substantiated leading professional functions of future technicians and mechanics and the corresponding to them professional skills. It is shown specific formation of professional competences of future technicians and mechanics.

Key words: vocational training, specific vocational training, technicians and mechanics, professional competence, Agrotechnical College.