Peculiarities of the educational process of training food industry specialists in professional education units

I. Tarasiuk

ORCID 0000-0001-9264-4302

Lviv State College of Food and Processing Industry, National University of Food Technology, Lviv, Ukraine

Article info

Received 02.04.2018
Accepted 30.04.2018

The author's position is that it is necessary to take into account certain features of the educational process of food industry specialists training in vocational education institutions, which primarily consists in raising the level of professionalism and competitiveness of future specialists.

The peculiarities of the educational process of training the specialists in the food industry in the institutions of professional education and stages of their practical training are determined.

Key words: vocational education; educational process; specialist in food industry; practical training.

The article presents the results of the study, which is carried out in accordance with the thematic plan of research of the Department of Civil Service and Education Management of the Central Institute of Postgraduate Pedagogical Education "University of Educational Management" NAPS of Ukraine on the topic: "Scientific and methodological principles for improving the efficiency of state and public administration of the continuing education under conditions of Public Transformations in Ukraine" (state registration number № DR 0116U007183).

Introduction

The educational system of Ukraine of the XXI century, under the influence of scientific and technological progress and information boom, is already quite a long time in a state of continuous organizational reformation and recomprehension of established psychological and pedagogical values.

Our state system of vocational education requires intensive development of the informational educational environment. Changes of economic relations, rapid development of modern society, high requirements for specialists in the conditions of competition in the labor market require the active use of innovative information technologies which will contribute to the achievement of a qualitatively new educational level, will be the key to the successful professional implementation of graduates of vocational education institutions in the modern labor market. Vocational education should be one of the innovative branches, because it corresponds to the principle of sustainable development of the country and actively participates in the creation of innovative economic climate and a competitive economy as a whole.

The main task for the further development of the food industry is the formation of knowledge and skills of future specialists in vocational education units and workplaces, which undoubtedly is the key to the continuous training of highly professional, universally trained, competitive specialists who would meet the needs of food industry employers.

Targets of the Paper

The actual task is a scientific substantiation of the peculiarities of the educational process of training the specialists in the food industry in of professional education institutions, ascertaining the factors for its improvement.

Analysis of recent research and publications

Problems of training and retraining of the personnel of labor professions, processes of management of the training system by innovative methods are revealed in a number of scientific works of famous scientists such as P. Stepovyk, V. Sachenko, T. Petrov and others.
The conceptual foundations of the development of vocational (vocational and technical) education are considered in works by S. Batishev, T. Desiatov, R. Gurevich, N. Nichkalo, V. Oliynyk, V. Radkevich, L. Sergeyev, A. Scherbak and others.

Issues of the organizational education process of vocational education institutions are studied in works by A. Buherra, I. Vasyliev, V. Kovalchuk, I. Kozlovska, M. Makiyenko, N. Padun V. Serdyuk, L. Petrenko, V. Svitston. The professional training of specialists in the culinary profile was considered in the works of L. Vysotska, M. Palchuk, L. Starovoit, T. Stahmych and others.


Particular attention was paid to the basic requirements for the teaching process in the context of different pedagogical approaches, but the analysis of the research showed that the scientists were not paying enough attention to the peculiarities of the educational process of training the specialists in the food industry in vocational education institutions.

Results and discussion

In modern conditions, vocational education is viewed not only as a means of reproducing the "workforce", but as a source of active revival and growth of socio-economically active groups of people who can work in all spheres of social production (Batechko, 2014).

According to N. Nichkalo, the purpose of vocational education is the training of skilled, competitive personnel with a high level of professional knowledge, skills, habits and mobility that meets the requirements of scientific and technological progress and market relations in the economy; the education of socially active members of society, the formation of a scientific worldview in them, creative thinking, the best human qualities, national consciousness.

The state educational policy is aimed at updating the purpose of teaching and upbringing and implementation of modern innovative technologies in the educational process, as stated in the Laws of Ukraine: "On Education", "On General Secondary Education", "On Higher Education", "On Professional-technical education", "On innovation activity ", the provisions of the Ministry of Education and Science of Ukraine" On the procedure for the implementation of innovative educational activities ".

The National Strategy for the Development 21 of Education in Ukraine for the period up to 2021 is about providing the high-quality, competitive vocational education in accordance with the requirements of innovative sustainable development of society and economy. In particular, it states that in order to implement a stable development and a new qualitative breakthrough in vocational education, it is necessary to provide: - the development and implementation of state standards of vocational education in professions of wide qualifications; updating and introducing an optimal list of training skilled workers (reducing their number based on integration); - optimization of the network of vocational schools of different types, professional orientations and forms of ownership taking into account demographic forecasts, rational specifics and needs of the labor market, expansion of the state order for the training of labor personnel in accordance with the needs of the economy, regional labor markets, the demands of society; - improvement of the system of training, retraining and advanced training of engineering and pedagogical personnel on the basis of higher and profile vocational education institutions (On the National Strategy for the Development of Education in Ukraine until 2021).

In this regard, the role of scientific and methodological support in solving the mentioned above and other complex tasks for the development of vocational education and training is increasing. In particular, the scientific developments related to the design of the content of vocational education and training based on a competent approach, are very valuable. Among them: - the concept of preparation of a flexible specialist who has two or more qualifications with further professional development throughout his work. It is about training graduates of vocational education institutions to work in conditions of innovative enterprises, using modern technologies and methods of organization of work, methods of manufacturing competitive products, providing high-quality services, etc.; - methodology for creating professional standards on the basis of a competent approach - documents that, within the framework of professional activity, determine labor functions and qualifications in accordance with the levels of the National Qualifications Framework, working conditions, professionally important qualities, requirements for vocational education and training, and possible places of work. The competent basis for the creation of professional standards is the response to the global challenges of economic activity, in particular, with the development of economies in the leading countries of the world on the basis of "outsourcing" (implementation of individual technological operations around the world); - a methodology for the creation of educational standards on a competent basis, according to which the content of vocational education formed with an orientation towards obtaining the relevant qualifications (full, partial, additional); is structured into blocks and modules, taking into account the requirements of the professional standard; various trajectories of professional training and qualifications are obtained through the qualitative performance of all types of work provided for by this standard (Radkevich, 2015, p. 7-11).

Dynamic technical and technological updating of food industry enterprises, the creation of high-performance jobs requires the provision them by skilled specialists capable of working in technologically changed conditions, demonstrating key and professional competencies taking into account the requirements and specifics of production processes.

However, as practice shows, employers are increasingly dissatisfied with the level of training and competence of jobseekers, and the availability of the diploma, even from a prestigious institution of education does not provide any
guarantees. In particular, almost half of companies in the field of catering and food production – one of the most promising in Ukraine – are dissatisfied with the skills and knowledge of job applicants.

In our opinion, the reasons for such dissatisfaction are the following: outdated material and technical base of most institutions of vocational education, which reduces the level of professional training of future specialists; insufficient financing, which entails a lag in the economic plan; unadapted curriculum to the requirements of modern employer; insufficient application of innovative methods of conducting classes, which would intensify the creative potential of students; the lack of established cooperation between the institution of vocational education and the employer, which leads to problems with the employment of people, etc.

The training of specialists in the food industry in modern society involves the introduction of new concepts, technologies of teaching and education, and the use of the results of scientific and pedagogical research in the pedagogical process. In the modern educational process of vocational educational institutions, the effect of personal and human factors, as well as integration, differentiation and globalization processes are not sufficiently taken into account.

One of the most important shortcomings of the professional training of future specialists is the technical re-equipment of production and innovative work, and modern education system in Ukraine is not ready for that.

The strategic task of modern vocational education in Ukraine is to provide the qualitative training of specialists at the level of international standards through the introduction of innovative pedagogical technologies that is, the latest forms and methods of teaching, the latest advances in technical progress.

Nowadays, in the process of teaching and educating students, a wide range of innovative pedagogical technologies are used that contribute to the continuity of knowledge acquisition. Among them the most common are the following:

- multimedia teaching aids;
- telecommunication methods of designing knowledge;
- imitation technologies;
- technology of “case-method”;
- video training techniques;
- computer design;
- technologies of virtual reality;
- cloud technologies, etc.

Their active use in the learning process, as practice shows, allows students not only to receive new information but also to form new knowledge. And this is facilitated by the availability of appropriate educational and scientific equipment (Garaschuk, 2016).

Enhancing students’ learning is very important for increasing the efficiency and quality of learning. The introduction of modern learning technologies, including active forms of teaching methods, motivates students to cognitive activity, raises interest in learning and increases initiative in learning (Fedorova, 2014). Knowledge obtained in the finished form, as a rule, causes some difficulties for students during their application or when solving concrete tasks, which is conditioned by the formal study of theoretical positions and the inability to apply them in practice (Fedorova, 2014).

Analysis of the content of job descriptions of food industry workers (production manager, technology technician, standardization engineers, product quality control) - allows you to formulate a list of the main tasks that a future specialist should be able to solve:

- development and introduction of technological processes and production regimes for products manufactured by the enterprise (shop, district), and for all kinds of different in complexity of works;
- development of plans for placement of equipment, technical equipment and organization of workplaces;
- calculation of production capacities of the equipment;
- calculation of material costs (technical norms of consumption of raw materials, semi-finished products, materials, tools, technological fuel, energy), economic efficiency of projected technological processes;
- development of technological standards, instructions, technological cards for manufactured products;
- coordination of the developed documentation with the workshops and departments of the enterprise;
- development of control programs (for equipment with numerical control), elaboration of developed programs, adjusting them in the process of updating, drawing up instructions for work with programs;
- conducting of patent researches and calculation of indicators of technical level of projected objects of equipment and technology;
- carrying out experimental works aimed at introducing new technological processes into production, in drawing up applications for inventions and industrial designs;
- development of programs for the introduction of new technology, organizational and technical measures for timely development of production capacities, technology improvement and control over their implementation;
- control over observance of technological discipline in workshops and proper operation of technological equipment;
- development of methods of technical control and testing of products;
- consideration of innovative proposals to improve production technology;
- preparation of conclusions about expediency of their use in the conditions of the enterprise, etc.

However, in today’s dynamic conditions for the mobility of a specialist in the food industry, the necessary conditions also include: the correspondence of the individual and the profession, conscious desire and constant development of the individual in the process of work, individual creative contribution to the production process.

Let’s consider the peculiarities of the educational process of food industry specialists training on the example of the L’viv State College of Food and Processing Industry of the National University of Food Technologies, which provides training for junior specialists, provides graduates with appropriate professional, general cultural and general education on the basis of a close connection with production, practical training students on a general production base.
with the involvement of them directly into the production process.

The L'viv State College of Food and Processing Industry of the National University of Food Technologies carries out its activities in accordance with the legislation of Ukraine and prepares specialists in the food industry in the fields of Food Production, Bread, Confectionery, Pasta, food concentrate, fermenting production and winemaking of the specialty 181 "Food Technologies".

The educational institution has structural subunits and units: educational offices of hotel and restaurant business, mechanic-technological, economic and technological, educational and production workshop and educational and production laboratory, which are technologically related to the process of training of specialists in the food industry.

The main tasks of the college are:
- training of specialists, which would combine high professional competence with scientific and general cultural training and satisfy the needs of production;
- training of pedagogical staff, their attestation and qualification improvement;
- cultural-educational, financial-economic, foreign-economic, informational, economic and commercial activities.

The educational institution carries out training of specialists in accordance with the curricula approved by the pedagogical council and which are developed according to the standard curricula. The content, term and forms of study are determined in agreement with the Ministry of Education and Science of Ukraine. Based on existing curricula and programs, the college defines the content of training for all specialties, ensures the participation of cyclic (subject) commissions and teachers in the preparation of teaching aids, textbooks, and other methodological documentation.

Educational process is oriented on new information technologies of training and provides training of food industry specialists capable of continuous updating of equipment, technology, improvement of management system and organization of work. Teachers are studying the latest technological processes of food industry enterprises, restaurant service, working on the introduction and development of innovative methods of teaching specialty disciplines, which contribute to effective teaching and production process.

Practical training is an important component of the student’s curriculum and should bring the future specialist closer to the productive sector. In particular, the modern education determines the following main areas of practical training of students: academic, classroom, work during educational and industrial practice, extracurricular study.

The sequence of practical training of the students of the L'viv State College of Food and Processing Industry of the National University of Food Technologies is realized in stages, as shown in Figure 1.

At the first stage of practical training of students solid theoretical knowledge is developed, information on the content, structure of professional actions, skills and abilities is provided.

The second stage forms professional abilities and is realized on such forms of training as laboratory and practical classes, studying of professionally oriented disciplines, course designing.

The third stage - the simulation of the educational process of the elements of production activity allows the student through practice to do all that he can by himself in conditions close to production. Simulation is a prerequisite for the direct participation of students in production processes.

At the fourth stage, students undergo practical training. The final, fifth stage, allows to generalize and consolidate professional skills and abilities through the production technological and industrial pre-diploma practice, diploma design.

Pre-diploma practice is the final stage of training and is conducted in order to generalize and improve the acquired knowledge, practical skills and abilities based on a specific enterprise, mastering professional experience and readiness of a future specialist to work independently, as well as use in practice of leading scientific schools and educational fundaments.

The L'viv State College of Food and Processing Industry of the National University of Food Technologies collaborates with food companies from the western regions of Ukraine, as well as educational institutions of the Republic of Poland, the Slovak Republic.

In particular, students of specialty 181 "Food Technologies" specialization "Food Production" are practicing in the leading hotel and restaurant complexes of "Lviv", namely the restaurant "Garmata" of Citadel Inn hotel, restaurants Reikartz Hotel Group, PJSC TGC "Dniester", and others.

Students specializing in "Production of bread, confectionery, macaroni products and food concentrates" have the opportunity to practice at the PrAT Concern "Khimprom", leading bakery enterprises of L'viv region, confectionery factory "Svitoch", bakery "Bread-Trade" and bakery-confectionery "SZMID" in town Piskovice (Republic of Poland).

Future specialists in technologies and equipment of fermentation production and winemaking, which are trained in the specialty "Fertilizer production and winemaking", are practiced at PJSC "Company Enzin", OJSC "Lviv brewery", LLC "TVK" The first private brewery "For people - as for yourself!", PJSC "Lviv Distillery", LLC "Hetman", PJSC "Khmel'pivo", PJSC "Karlberg Ukraine", Ternopil brewery "Opilya", Odessa Champagne Wine Factory, group of companies TB Frut, PJSC KSBN "Rosinka", alcoholic beverages, breweries of the western regions of Ukraine.

When passing undergraduate practice by the students, the head of an enterprise (institution, organization) despite the form of ownership and subordination, or an authorized body or individual, as well as an individual who carries out business activities and is registered in accordance with the
established procedure and in accordance with the law, uses hired labor (if necessary and possible) has the right to offer a job to a graduate, to work out an employment contract and send it to college to send the graduate to work.

Inclusion of practices in the content of educational programs of vocational education institutions implies: an inextricable link between theoretical and practical training; preparation of students for performing basic professional functions; a consistent expansion of the circle of students’ skills, practical skills and their complexities as they move from one stage of practice to another. The implementation of educational projects within the a single professional environment facilitates the expansion of the network of production and pre-diploma practice bases and provides the necessary information for continuous updating of practice programs.

The training of food industry specialists in vocational education institutions requires fundamental changes as there are a number of problems, in particular:
1) insufficient level of information display in the content of training on the latest technological equipment of the food industry;
2) the orientation of the content of training on the formation of reproductive knowledge, skills and abilities;
3) imperfect implementation of the training of future specialists in creative teaching methods for innovative technological equipment;
4) orientation to traditional forms of education;
5) low level of implementation of the newest teaching technologies.

Conclusions

From the research which was carried out it is possible to determine the following peculiarities of the educational process of training future specialists in the food industry:
- professional training of future specialists in the food industry should be built on the basis of personal-oriented, operational and systematic approaches to training, which today are implemented in a competent approach;
- the training of future specialists in the food industry should be directed towards the formation of individuality, self-development and self-realization, the development of perception, intelligence, thinking, imagination, memory, the formation of such techniques of mental activity as comparisons, analysis, synthesis, abstraction and generalization, using deductive and inductive methods of cognition;

Fig.1 Stages of practical training of students of the Lviv State College of Food and Processing Industry of the National University of Food Technologies

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Forming of theoretical knowledge</td>
</tr>
<tr>
<td></td>
<td>Lectures, consultations</td>
</tr>
<tr>
<td>II</td>
<td>Forming of primary practical skills</td>
</tr>
<tr>
<td></td>
<td>Laboratory and practical classes, the study of professionally oriented subjects, course designing</td>
</tr>
<tr>
<td>III</td>
<td>Simulation of the educational process of the elements of production activity</td>
</tr>
<tr>
<td></td>
<td>Clutch work, master classes</td>
</tr>
<tr>
<td>IV</td>
<td>Forming of practical skills</td>
</tr>
<tr>
<td></td>
<td>Practical training</td>
</tr>
<tr>
<td>V</td>
<td>Generalization and consolidating of professional skills</td>
</tr>
<tr>
<td></td>
<td>Production practice and industrial pre-diploma practice, diploma design</td>
</tr>
</tbody>
</table>
- the education system requires an optimal combination of educational goals, the content of each discipline and pedagogical tools, methods and forms of work taking into account the specifics of the food industry;
- the future specialist should have professional knowledge, skills and abilities, professionally important qualities and personal abilities;
- advanced training, traineeships for teachers at the leading food industry enterprises, which will enable them to teach students the latest technological equipment of the industry, as well as to use non-traditional forms and newest technologies of training;
- close feedback with graduates, tracking their professional achievements, assistance in raising their qualifications;
- strengthening communication between institutions of vocational education, enterprises, center of employment, other subjects of social partnership to simplify access to information on the demand for the labor market for the relevant profession, of which training in the region is under way, and employers will be able to make suggestions regarding the adjustment of curricula, will affect the quality of training, expand opportunities in organizing student practice.

Providing the economy with highly qualified specialists and balancing demand and supply of labor in the labor market, taking into account the priority directions of economic development, can only be achieved by uniting and coordinating the efforts of representatives of vocational education institutions and employers with the support of executive bodies.

In our opinion, vocational education is precisely the area where the investments of enterprises, state and society can become the most effective. Such a strategy will avoid the most acute and dangerous situations for economic growth and maintain competitiveness. The problem of introducing into the educational process of innovative manufacturing technologies is connected with the integration of concepts of social partnership and the modernization of vocational education.

References


