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ANALYSIS OF FACTORS THAT INFLUENCE ON ORGANIZATION OF EDUCATIONAL AND PRODUCTION PRACTICE IN PREPARATION OF PHARMACY SPECIALISTS

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Мета: Метою дослідження є угрупування та аналіз зовнішніх і внутрішніх факторів, що впливають на процес організації навчальної та виробничої практики як складової професійної підготовки фахівців в системі вищої фармацевтичної освіти, та розробка комплексу рекомендацій щодо її удосконалення.

Методи: Для досягнення мети використано методи наукового аналізу, зокрема узагальнення, порівняння, контент-аналіз, системний та логічний методи.

Результати: Доведено актуальність дослідження факторів, що впливають на процес організації навчальної та виробничої практики здобувачами вищої фармацевтичної освіти. Виконано угрупування внутрішніх та зовнішніх факторів та розкрито їх сутність за класифікаційною ознакою. Розроблено та рекомендовано комплекс заходів, спрямованих на удосконалення організації навчальної та виробничої практики у вищому навчальному закладі (ВНЗ).

Висновки: Визначено основні чинники, від яких залежить процес організації практики у ВНЗ. Проаналізовано зовнішні та внутрішні фактори, що впливають на процес організації навчальної та виробничої практики. З метою забезпечення належної якості практичної підготовки рекомендовано комплекс заходів щодо покращення процесу організації навчальної та виробничої практики у системі фармацевтичної освіти

Ключові слова: фармація, освіта, фахівець, практика, фактори, організація, якість, компетентність, результативність, працевлаштування, кар'єра

1. Introduction

The quality of the training of specialists is always in the focus of the educational process of a higher educational institute. The urgency of the issue is due, first of all, to the dynamic development of pharmacy, the process of integration of Ukrainian society into the European community, new guides in the training of specialists. At the current stage, we need competitive professionals with a new type of thinking, creative orientation, innovative, persistent, mobility, with high adaptive qualities, able to actively participate in improving production processes [1].

Pharmacy as a sector of the health care system requires from the system of professional education such specialists, who, immediately, without the adaptation period, could qualitatively carry out the duties assigned to them. In the training system of a future specialist in pharmacy, an important place is given to practice, during which the student consolidates the acquired knowledge, practical skills and skills that a pharmacist of the modern type must possess.

2. Formulation of the problem in a general way, the relevance of the theme and its connection with important scientific and practical issues

In modern conditions, in the system of preparation of a competitive specialist, practice is an integral part of any educational program of a higher education institution, which ensures the acquisition of higher education graduates of competencies demanded by the labor market.

The proper level of organization of educational and production practices in higher educational institutions, which corresponds to the standards of higher education, ensures the quality of practice, the formation of professional competences and further promotes the integration of young professionals into productive activities.

Practice in the workplace should also be considered as a motivating factor that satisfies the requirements of employers for having work experience. Therefore, the problem of improving the organizational principles of practice, taking into account the actions of factors influencing its quality, in the current conditions becomes relevant.

3. Analysis of recent studies and publications in which a solution of the problem are described and to which the author refers

A number of scientific publications [2–6] have been devoted to the actual issues of practical training in different specialties; however, the problem of improving the organization of training and production practices of pharmacy specialists, taking into account the factors of influence, was not the subject of special study and generalization.

4. The field of research considering the general problem, which is described in the article

Currently, diagnostic tools for systematic analysis and identification of critical factors influencing the quality of the organization and the practice on the example of pharmaceutical education have not been worked out. Awareness of the relevance of the development of this problem in modern conditions, the absence of works by domestic scientists has made the expediency of scientific research.

5. Formulation of goals (tasks) of article

The purpose of scientific research is the grouping and analysis of external and internal factors influencing the process of organizing educational and production practices at the National Pharmaceutical University (NUPh).

To achieve the purpose of the study, we formulate the main tasks: to establish the most significant factors on which the process of organization of practice depends; to work out external and internal factors that influence the quality of the practice; formulate a set of measures to improve the organization of training and production practices.

6. Presentation of the main research material (methods and objects) with the justification of the results

The object of the research is the process of organizing the practice in NUPh. As a subject of the study were chosen factors influencing the organizational principles of educational and production practice of pharmacy specialists. The information base includes data from scientific and professional literature, the process of the quality management system at the National Pharmaceutical University in order to provide links with the practice bases, educational and production practices programs that are envisaged by the educational programs at the NUPh, and authors' own research. To achieve the goal, methods of scientific analysis were used, in particular, generalization, comparison, systematic, logical and methods of visual representation of data. During the formulation of conclusions and recommendations, the methods of descriptive and abstract modeling were used.

The problem of improving the organization of practice in higher education institutions has recently

given special attention by both academics and practitioners. In particular, M.F. Kinkolichy points to the urgency of improving the methodology of developing a program of production practice and designing its results [7]. O. G. Yankovyi notes that the qualitative conduct of the practice of applicants for higher education should cover the following areas: formulation of goals and objectives of practice; definition of performance requirements; elaboration of criteria for evaluating the practice; improving the quality of methodological provision of practice; improvement of the qualification of the lecturers of the department [8]. A. A. Kotvitskaya considers it necessary to make cooperation between higher educational institutes and economic entities deeper [9].

Experience of practice organization in NUPh shows that the quality of the program of educational and production practice is influenced by the theoretical and practical training received before the practice, which in turn depends on the level of teaching and methodological, organizational and personnel provision of the higher educational institutions, the capacity of the material and technical base and opportunities, use of the latest information technology in the educational process, integration the system of internal quality assurance of higher education institutions.

In the context of the problem under investigation, the main factors that determine the process of practice organization are presented in Fig. 1

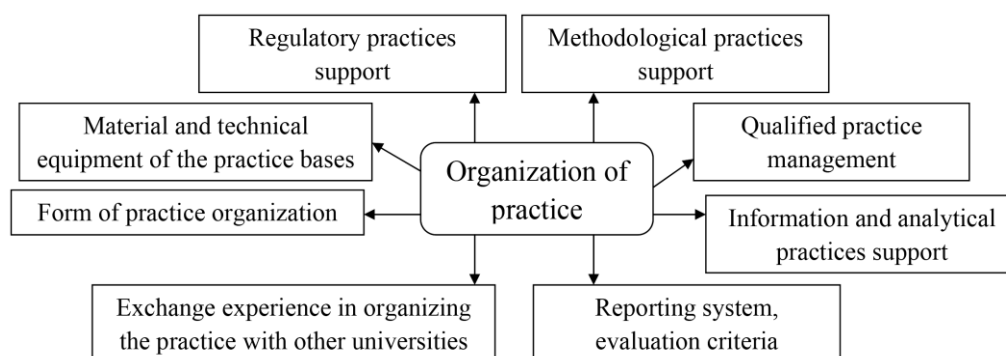


Fig. 1. The main factors that determine the process of organization of educational and production practice for pharmacy specialists

Competence, achievement of which is decided during practice, should provide the ability to analyze the specific situation, make decision and effectively simulate the behavior of the personnel of pharmacies and pharmaceutical companies. The principles of implementation of pharmacy competencies lie in providing methodological practices, which is regularly evaluate and review with the involvement of stakeholders. Student of higher education should know the legal framework to be timely familiar with the program and schedule of the practice to be able to use the acquired knowledge to solve professional tasks, which defined with program. Methodical provision, whose content is subjected to continuous updating databases with the requirements of practice, should create the self-improvement conditions for student of higher education, and therefore the basis for directing future professional to professional development can be praxeological training as a set of recommendations for self-improvement and the ability to manage their own

training, attitudes to work in a team and in general to employers.

During passing the practice, the future specialist of pharmacy has the opportunity to determine the correctness of the choice of profession and how much his personal qualities correspond to the social aspects of the activity. In view of the above, it is recommended that during the formation of tasks that are solved during practice, use methods of acquiring praxis skills, which are, for example, analysis of production situations, construction of production processes, analysis of professional activities of specialists, business games, etc. [10].

Significant factors are the material and technical equipment of the practice base and skilled management practices. The last one is the basis of strict adherence to the algorithm of its passage by all participants in the process: a student of higher education - the head of practice from the department of higher education - the head of the practice base. Effective functioning of the chain

requires high motivation and responsibility of its components. The effect of this factor is consistent with the concept of a "seven star pharmacist" developed and proposed by WHO and the International Pharmaceutical Federation, according to which a pharmacist should act as a "mentor", that is, learn from one another, transfer knowledge to others, prepare a future replacement, etc.

Taking into account that the quality of education is determined in the end by various subjects of the educational process, objective assessment of the practice involves multicriteria, including on the basis of the formation of effective feedback between higher educational institutes and the base of practice. One of the tasks that practice involves is social adaptation to the conditions of its passing, the acquisition of skills in organizing their own activities, the choice of methods and means of fulfilling professional tasks, forms of quality control of their implementation. The social partnership system is a stimulating factor both for the practice base and for higher education graduates, which can be realized when choosing a place of practice on a competitive basis. Under these conditions, potential employers whose market potential and image are most attractive may choose higher education graduates with a prospect of further employment, which in turn should demonstrate professional skills and aspirations for further development. At the same time, social partnership is the basis of dual education, as evidenced by the experience of European countries. It is the form of training that involves the joint

training of a specialist with a higher education institution (the theoretical part) and an enterprise-partner (practical knowledge and skills), which, in the first place, is relevant for specialties related to production. The introduction of the dual education system optimizes the development of the personnel training system directly at the enterprise, provides an opportunity to replenish the human resources reserve and forms the notion of the image of the profession [11].

The results of the study prove the relevance of a comprehensive analysis of the factors that influence the quality of the organization of practice in higher education. We have found that the process of planning and organizing of the practice in NUPh is influenced by factors that can be classified as internal and external factors; controlled and uncontrolled; factors of direct and indirect action. At the next stage, we have grouped and detailed internal and external factors that have a significant impact on the success of the practice.

Under the internal, we understand the factors that relate to the management of the university and the impact of which is carried out by the relevant structural units involved in the organization and conduct of practice. All internal factors, the types of which are presented in Table 1, interconnected, changing one of them to some extent affects all others. External factors are considered as being determined by external conditions and on which university structural units of practice organization do not directly influence. Groups of external factors are given in Table. 2.

Table 1

Internal factors, that affect on the quality of the practice

Classifications grouping factors	Factors
1	2
Organizational principles of practice	<ul style="list-style-type: none"> familiarization with content, duration, form of organization of practice according to educational programs; mastering the theoretical material for solving professional problems, stipulated by the program of practice
Methodical provision of practice	<ul style="list-style-type: none"> availability of a practice program; availability of methodical recommendations on practice at the department's website (or access to the repository of the NUPh); preparation of an individual task
Qualified practice management from universities	<ul style="list-style-type: none"> appointment of the head (position, degree, rank, internship in the pharmacy); providing instruction before the practice begins; conducting consultations during the practice and the preparation of the report; defining criteria for evaluating the results of the practice
Planning and organization of practice	<ul style="list-style-type: none"> acquainting students of higher education with a program of practice; drawing up a schedule of work for higher education graduates; conclusion of agreements with the bases of practice; distribution of higher education graduates according to the practice bases; assignment of higher education graduates to workplaces and managers from the practice base
Practice control	<ul style="list-style-type: none"> conducting verification of skills acquired by the higher education students; control over the passage and performance of the students of higher education program of practice; control over observance of terms and schedule of practice; control of adaptation to work in the team; performance of an individual task
Summing up the practice	<ul style="list-style-type: none"> defence of practice reports; held a final conference s practice

Continuation of Table 1

1	2
Information exchange	<ul style="list-style-type: none"> • organization and conducting of seminars, trainings, meetings on how to improve the quality of practice with the involvement of stakeholders; • publication in scientific journals of scientific articles on organization and implementation of practice (including joint with representatives of practice bases)
Evaluating the quality of practice organization	<ul style="list-style-type: none"> • material and technical basis of practice; • management from higher education institutions; • management from the practice base; • availability of methodical support; • acquisition of general and special (professional) competencies; • getting professional communication skills; • practical skills development
Managing the process of organizing the practice	<ul style="list-style-type: none"> • monitoring the quality of the practice; • monitoring of the involved and perspective bases of practice; • monitoring compliance of workplaces with the requirements of the program of practice; • feedback from enterprises - bases of practice; • exchange experience in practice organization with one-profile higher education institutions; • information and analytical provision of practice
Ensuring the employment of graduates	<ul style="list-style-type: none"> • formation of a chain: university-base of practice-workplace; • collection and accumulation of information on vacancies at enterprises; • monitoring of professional careers for graduates of higher educational institutions
Social partnership	<ul style="list-style-type: none"> • interaction of an educational institution with the subjects of the labor market, state and local authorities; • availability of practical projects

Table 2

External factors, that affect on the quality of the practice

Classifications grouping factors	Factors
Normative-legal provision of practice	<ul style="list-style-type: none"> • providing educational institutions with regulatory information that regulates the practice
Skilled practice management from the practice base	<ul style="list-style-type: none"> • appointment of a practice manager (position, work experience); • individual manager characteristics that determine his ability to be a mentor; • participation of the supervisor from the practice base in the formation of teaching and methodological support; • assessment of the quality of acquisition of general and professional competences by higher education students
Practice bases	<ul style="list-style-type: none"> • modern equipment, which is used for implementation of the program of practice; • qualified specialists; • availability of production facilities in accordance with the program of practice
Information exchange	<ul style="list-style-type: none"> • access to professional (pharmaceutical and other) information; • interaction of the higher education student with the management and employees of the enterprise; • gaining experience in the team

Thus, the given results allow stating that the quality of practice depends on the influence of factors having different directions of action and need constant monitoring by the responsible structures. The analysis allowed formulating a set of innovative measures to improve the process of organizing educational and production practices at the National Pharmaceutical University (Table 3).

Implementation of the proposed set of recommendations will allow solving a number of strategic tasks in the system of planning of practice, in particular:

- interconnect the goals of the educational process, which is based on a competent approach, with the objectives of the enterprise - base of practice;

- to establish a connection between vocational and practical education with theoretical training, research activity of applicants for higher education;

- to ensure the functioning of the mechanism for updating the theoretical component of education with practical aspects of activity;

- to achieve the professional-personality and social effect of practice;

- Involve employers as stakeholders to assess the quality of the educational process of universities;

- introduce motivational mechanisms for the use of innovative technologies in the professional activity of graduates of higher educational institutes.

Table 3

A set of innovative activities to improve the organization of educational and production practices

Title	The purpose of innovation	Predictable effect
Formation of (possibly regional) integrated computer database of enterprises for all types of practices	a higher education student choose a place for practice online	motivated choice of practice base by higher education student
Making the process of interaction with industry enterprises deeper	study of the requirements of employers regarding the competence of graduates during the practice	formation of the content of practical training, taking into account the modern requirements of pharmacy
Improvement of educational and methodological materials of practice	receiving feedback or approval of developed materials with practical workers	adjustment of educational programs and curricula
Improvement of the system of control over the implementation of the program of practice	formation of a close relationship between the teachers of the department and practical workers	ensuring quality implementation of the practice program
Improvement of the system of management of the practice of higher education students at enterprises	attraction of employers to scientific and practical events at NUPh	providing good practice management
Formation of creative connections with foreign pharmaceutical faculties	organization of the practice of higher education students of NUPh in other countries	providing of advanced foreign experience
Creating a pharmaceutical employment portal	the formation of skills for job seek	ensuring employment of graduates of NUPh
Monitoring market queries and employment of graduates of NUPh	cooperation with enterprises in determining the need for specialists	providing the country with pharmaceutical specialists

7. Conclusions from the conducted research and prospects for further development of this field

1. Identified the main groups of factors on which the quality of the process of organization of practice depends. In particular, it is: normative legal, methodological, informational and analytical provision of practice, skilled management and form of practice organization, reporting system and evaluation criteria, exchange of experience of organization of practice with other universities, material and technical equipment of practice bases.

2. The analysis of external and internal factors influencing the quality of practice by the applicants of higher education is conducted. The internal factors related to the sphere of university management and external factors which are not a sphere of direct influence of the structures of the university are analyzed.

3. A complex of innovative measures aimed at improving the organization of educational and production practices in higher educational institutions, for which the predicted effect of implementation has been determined, has been developed and recommended.

In order to improve all aspects of the practice it is expedient to conduct a questionnaire for higher education students on how to determine their level of satisfaction with the quality of practice and managers from the practice base to assess the quality of the theoretical and practical training of higher education students. The quality and effectiveness of the educational process will prove the demand for graduates in the labor market. Ultimately, the professional graduate career should be part of the university's ranking in the educational services market.

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