

## CONTENT AND ORGANIZATION OF PRACTICAL VOCATIONAL EDUCATION IN COLLEGES

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### ABSTRACT

The paper studies the problem of systematic approach to content and process practical vocational education in colleges, the particular establishment of its component parts, the correct determination of the content of work performed, including the formation of the system basis of professional skills in teachers of special subjects and trainers. The article enlightens the development of scientific and pedagogic basis of improvement of vocational education, dealing with problems of consistency and correlation of vocational education, development and improvement of didactic basics of new forms, means and patterns of the meaning of vocational education, scientific and methodological researches dedicated to improvement of teaching courses in vocational colleges, as well as dealing with problems related to formation of skills and experience of students during vocational education. Vocational education consists of two parts, closely connected with each other: theoretical and practical vocational education. This article is devoted to scientific and pedagogic basis of organization of vocational education process, methods of organization and conduction of laboratory practicals in vocational education, application of advanced experience and know-how in vocational education. It also enlightens roles, methods and means of organization and conduction of education in vocational colleges. The article can be useful for deputy directors of work placement, teachers of special course, engineer-teachers working in vocational colleges. Moreover, professors teaching in vocational education faculty of higher educational institutions, as well as professors working in the field of continuing education and professional development can use this article.

**Keywords:** College, practical vocational training, methods of education, pre-degree practice, trainers, student.

### INTRODUCTION AND LITERATURE REVIEW

The curricula of vocational colleges provide both theoretical and industrial education. Objectives, methods and forms of organization and content of education, with its own peculiarities, are aimed at one goal - the training of highly qualified young specialists. Consequently, the theoretical and industrial education is considered separate, but related to the educational process in specialized secondary schools.

Practical vocational education in colleges should focus on the development of individual students, i.e. ensuring the formation of students' practical skills, application of the theoretical knowledge they have received in practice with account of their personal rights, genetically psychological empowerment, social and economic interests and the needs and requirements of production (technology) [1.2.3.].

Disclosure of the necessary connection between the content of practical vocational education in the colleges and potential of formation of basic professional skills of students is a major challenge, the basis of the contradictions in the methods of education. The term of the

professional education means an organic unity of theoretical and practical vocational education, whose functions are interrelated and interdependent.

The main goal and objective of practical vocational education in colleges is to form the basis of students' professional skills and prepare them for future employment in their chosen profession. This training is provided by mastering the skills and abilities necessary for the application of acquired knowledge in practice, planning of production processes that characterize their profession, preparation, implementation, monitoring and maintenance. Because “junior specialist” - is a professional degree, specialty, which is given to graduates of vocational colleges, successfully mastered the program of theoretical and practical special education. Junior specialist carries out technical duties in their field, computer-related and other facilities; actuates the technical equipment and other types of transportation, provides service and maintenance of engineering and technical equipment and items, installs machine tools, steel structures, performs other similar works.

Practical vocational education differs from general education to its goals and objectives of education, training programs and selection of program content. Educational activities, and the process of theoretical vocational education, being essentially the same, are made using the same principles and the teaching techniques. Practical vocational education is fundamentally different method and way of learning. Since training is being conducted in close connection with the production: students are producing, often working. Hence, the uniqueness of practical vocational training is primarily in the fact that the learning process is carried out directly in the work of the students themselves [4.5.6].

Therefore, the practical vocational education is a training process focused on the formation of professional knowledge and skills as a result of mental and physical activity of students. If a system of theoretical education and experience are acquired in the process of theoretical vocational education then skills are acquired in the course of practical vocational education. These two interrelated processes enable the formation of young professional with a particular specialty and skills.

If in the process of theoretical vocational education in college students study features of the theoretical work aimed at modeling the content and meaning of the professional activity, in the practical vocational education students study characteristics of practical activities to ensure the application of the vocational model in practice. Accordingly, if the basic structure of the theory of vocational education is a set of general education and special subjects, the basic elements of practical vocational education is a set of consistent, interrelated forms of practical activities: laboratory researches, educational practices, occupational practices, pre-diploma practices, etc. [10].

To determine the devices forming the basis of the content of practical education in vocational colleges, it is appropriate to rely on the following provisions:

1. The structure of the content of a practical education is determined in accordance with consistent, gradual assimilation of professional skills, professional activities;
2. Components of the content of practical education are defined by structure acquired by professional activity.

In vocational colleges, the steps of practical vocational training mainly conducted under the guidance of teachers of special subjects and trainers. Practical vocational training - is a

process of formation of professional knowledge and skills to conduct work within the professional activities. The course of practical vocational training covers content of degree and content of the second profession.

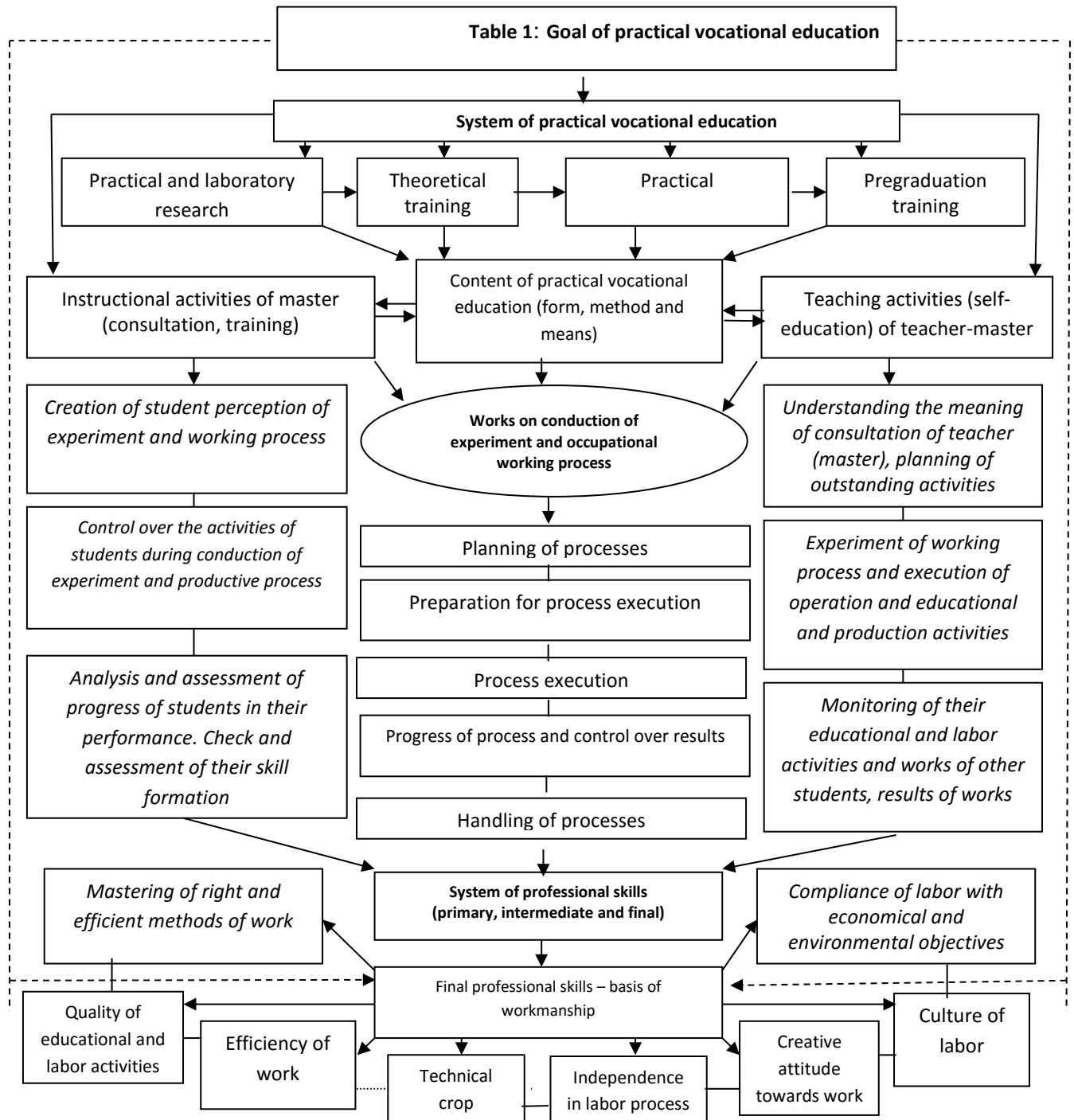
The main objective of practical training is to prepare the students - the future of junior specialists - to direct activities in a specific specialty, training to application of their theoretical knowledge in practice, the formation of professional skills.

Theoretical and practical vocational training are considered relatively independent, yet interrelated parts of a learning process in vocational colleges, as assigned to conduct this process relative to that time. For example, according to the curriculum of vocational college on classroom work 4560 hours of teaching loads is assigned for "Roads, engineering structures and construction of airfields". Therefrom 1327 hours (29.1%) are assigned for practical vocational training. Particularly, on ten special subjects ("Geology and soil science", "Surveying", "Road construction equipments", "Exploration and mapping for roads and airfields", "Highways and construction of airfields", "Traffic rules and safety regulations", "Man-made structures on the roads", "Use of roads and reconditioning", "Structure of the road vehicles, trucks and tractors", "Manufacturing organizations") 370 hours (8.5%) are allocated for practical training, and for educational practice ("Works on the geology", "Works on geodesy", "Work on mapping"), 309 hours (8.5%) are assigned, for practical training 360 hours (7.9%) and for pre-defense practice 288 hours (6.3%) accordingly).

Despite the fact that the practical vocational training is a very significant part of the process for junior specialists, for it will only be given one third (29.1%) of the entire workload. If we compare these figures with the same institution of developed foreign countries, it is clear that there is little time devoted to practical vocational education [8].

The practical vocational training - is the process of teaching the students of professional activity, emerging and developing professional skills. Therefore, the management of this process needs to be convenient, efficient, flexible and creative. In other words, the process shall be organized in a particular system and directed to the formation as a result of mental and physical labor of teachers and students of relevant professional skills.

Based on the foregoing provisions, we have developed a theoretical model of a practical vocational training, implemented in professional colleges (see Table. 1.)



**Table 1. Practical vocational education system model**

Analysis of the model shows the following positions: implementing in vocational colleges objectives of practical vocational education and condition of learning of relevant experience accumulated in social society require systemic organization of practical vocational training. This system consists of two areas, which are closely linked, and one without the other cannot function:

a) the informative aspect of a practical vocational education system includes the following structures that provide from the simple to the complex formation of the professional skills of

college students: practical laboratory works, educational practice, practical training, pre-diploma practice;

b) the methodological aspect of practical professional education includes the following structures that promote development of students' skills during conduction of practical laboratory works, educational, industrial practice in college. Training (teaching, guiding, advising) activities of teachers (trainers) and educational (learning) activities of students are defined by the followings:

- creation of students' perception of the implementation of experimental, production and training activities, and monitoring;
- control over activities of students in the process of implementation of experimental and production and training activities;
- analysis and monitoring student progress on the implementation of (the study) of experimental and production and training activities, inspection and evaluation of the formation in which the professional knowledge and skills[7].

Educational (learning) activities are defined as follows:

- - thorough understanding of tips, instructions of teachers (trainers), the planning of outstanding work;
- - implementation of experimental and production and training activities on the labor processes and operations under the corresponding program;
- - monitoring of results of works, pilot training, production activities carried out by themselves and other students;

Informative and methodological basis of practical vocational training in college is the processes of experimental work of students in special disciplines and production and training activities for all types of educational practice. Experimental, production and training activities performed in colleges, supporting enterprises, organizations, institutions, promote the formation of primary, intermediate and final skills. Final (completed) the degree of professional skills indicate the formation of students' basic workmanship. Accordingly, the main goals and objectives of the practical vocational education in colleges are to form the basis of students' professional skills and practical preparation for their future working career. It is advisable to perform a systematic analysis of practical vocational training in college in two ways (see Table 1.):

- 1. Systematic analysis of the contents of practical vocational training.
- 2. Systematic analysis of the process of practical vocational training.

In the systemic approach to the practical vocational training in terms of content it comprises the following components:

### **1. Practical laboratory works**

The systematic organization of practical laboratory works requires planning of scientific-experimental works, equipment of special training labs where scientific-experimental technology should be performed, conduction of ongoing, midterm and final check of initial skills acquired by students, and it shall be developed and implemented a method of educational practice, providing these processes by methodological services.

## **2. Practical training**

For systemic organization it is required to plan practical training works, it is obligatory to specially equip training workshops designed for execution of training and practical technology and conduction of the ongoing, midterm and final check of primary and intermediate skills and knowledge acquired by students, it is obligatory to develop and implement a method of educational practice, providing these processes by methodological services.

## **3. Practical (technology)**

For systematic organization of practical training (technology) it is required to plan production and training activities, undertake special training in the supporting enterprises (organizations, institutions), where should be performed production and training technology, conducted ongoing, midterm and final check of primary and intermediate skills acquired by students, and it is obligatory to develop and implement a method of educational practice, providing these processes by methodological services.

## **4. Final qualification practice**

For the systematic organization of the final qualifying practice it is required to plan final qualification (diploma) work, should be conducted a special training in the supporting enterprise (organization or institution) and college laboratories where should be implemented research-checking technology and conducted ongoing, midterm, final check of the final skills of students and it is required to develop and implement a method of carrying out final qualification works, providing methodological services these processes[9].

The following components are identified in the approach to the practical vocational training from the point of view of the process:

### **1. Practical vocational education planning**

System planning is carried out according to the four components of the content of the practical vocational education with the chief master, master of production and teachers of special subjects. It is necessary to plan the organization and conduction of scientific-experimental researches in practical laboratory works, practical training works in practical training practice, production and training activities in production practices, final qualification (diploma) works in the final qualification practice.

### **2. Pre-vocational education**

Preparatory work is also, according to the four components of the practical vocational training should be conducted systematically. This requires adequate training and material tooling of educational laboratories for laboratory works, educational workshops for practical training, supporting enterprises (organizations, institutions) for production practices and execution of final qualification works, and adequate training and methodical preparation of trainers and teachers of special subjects.

### **3. Implementation of practical vocational education**

The practical vocational training according to the four components of its content should be systemic and be based on the original, relevant educational technologies, which differ from each other in their quality. Based on this, it is necessary to conduct practical and laboratory work on the basis of scientific-experimental technology, practical training practices on the basis of practical training technology, production practices on the basis of production and training technologies, and practices for the final qualifying paper on the basis of research-experimental technology. And this in turn requires the proper planning of practical vocational education, special preparation for implementing it on the basis of the development and implementing of the above technologies in the vocational education by trainers (teachers of special subjects).

### **4. Practical vocational education control**

Practical vocational training shall be controlled systematically according to the content of its four components - check on the basis of the goals in front of every kind of practices and results achieved (ongoing, midterm, final checks) preparing students to learn new skills, determining the causes of errors, the effectiveness of the organization of education, its methods, means and objective assessment of acquisition of practical skills, gathering information for the effective planning of the educational process. All this must be done in order to obtain relevant information (feedback) on professional knowledge and training and production activities of students.

Progress check is made in the form of the ongoing check (observation, interview, test and evaluation), cycle check (test, control) and final check (final qualification works, written final qualification works).

### **5. Practical vocational education methods**

According to the requirements of teachers of special subjects and trainers, systemic and effective organization, and implementation of practical vocational education of students on the basis of its content and components define the way of continuous professional development, teaching skills. From this point of view it is necessary to further develop the methods of practical laboratory work, practical training, production and training practice and final qualification practice.

A systematic approach to the content and process of the practical vocational education in colleges promotes proper definition of their component parts and content of executed work, in particular, the systematic formation of the basis of necessary professional skills in teachers of special subjects, trainers and students of production.

**Table 2: System of connection between content and process of practical vocational education in colleges**

<b>Subject matter</b>	<b>Types</b>	<b>Component parts</b>					<b>Component parts</b>
	Final qualification practice	Final qualification works	Supporting organizations – college laboratory	Research and experimental laboratory	Ongoing, midterm, final check	Methodology of final qualification practice	
	Production (process-oriented) practice	Training and production activities	Supporting organizations (organization and companies)	Training and production technology	Ongoing, midterm, final check	Methodology of production training	
	Practical training	Practical training works	Training workshops	Practical training technology	Ongoing, midterm, final check	Methodology of practical training	
	Practical and laboratory works	Scientific – experimental works	College laboratory	Scientific – experimental technology	Ongoing, midterm, final check	Methodology of practical and laboratory works	
<b>Practical vocational education</b>		Planning	Preparation	Implementation	Monitoring	Methodological support	<b>Stages</b>
		<b>PROCESS</b>					



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