

Model of Preparation of a Craftsman in the Framework of Continuous Vocational Education

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ABSTRACT

The significance of the issue under study is stipulated by a social order for targeted preparation of staff for a craft type of companies. The aim of the article is development and approbation of structural-functional model of continuous craftsman education. The main research method of the given issue is modeling which enables to see the issue as a process of targeted, continuous and conscious acquiring of vocational competences by future craftsmen, in the course of formal, non-formal and informal education. The article presents a structural-functional model of continuous craftsman education that includes formal, non-formal and informal education and outlines a complex of organizational-pedagogical conditions contributing to implementation of this model. The contents of the article might be of interest for students of craft trades, all categories of vocational-pedagogical workers, specialists of state government institutions in the area of vocational education.

Keywords: craftsman, craft activity, craft education, continuous education

INTRODUCTION

Socio-economical changes in Russia have led to emergence of small businesses which produce fast moving consumer goods and independent entrepreneurs whose services are targeted at some particular customers. In terms of international economic relationships, such businesses are referred to as craft activities. Their products represent a distinctive type of goods, whereas craft types of vocational activities involved make up a group of craft professions. The specifics of craft activity lie in executing individual orders for the public, autonomous production and craft marketing, creative character of work, socio-professional mobility of workers, and socially-targeted activity [1].

The professions which are attributed to craft type ones in developed European countries make a group of blue-collar jobs according to Russian National Classification of Occupations of Employees, Positions of Civil Servants and Wage Category. As opposed to employees of large industrial enterprises that perform a limited number of technological operations, craftsmen are supposed to master the whole operation cycle and carry out multiple working functions: create new jobs for craft production, execute customer individual orders in full and on time, establish contacts with raw material suppliers and consumers of their production. The process of craft activities is characterized by the integration of operational, technological and entrepreneurial components of craft work [2].

As distinguished from entrepreneurs who are not personally involved in production process, craftsmen take an active part in work which is often unique and highly artistic. They exploit labour saving devices and manual work, implement elements of technical arts and pass on the secrets of the trade to younger colleagues. Products manufactured at industrial enterprises are generally impersonal, since their potential buyer is unidentified. Products of craft businesses are customer-oriented because a craftsman is aware of his buyers' requirements and needs. It is him who personally keeps in touch with clients from accepting an order to delivering a finished product.

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Not infrequently does he provide guarantee maintenance of a craft item as well as required after-sales services. Unlike an entrepreneur, whose activity aims at receiving sustainable profit maximization, craftsman activity is focused on occasional moderate profit, which is explained by great dependence on craft market conditions and an inability to forecast the amount of highly profitable orders in advance.

Due to the specifics of craft activities, the introduction to a profession, learning and mastering necessary skills take a lot of years. Learning secrets of proficiency, working out an individual style, improving qualification level testify to a necessity of continuous education. Memorandum of Continuing Education of the European Union [3] points out not only the continuous character of education, but also its diversity of forms – formal, non-formal and informal. Consequently, it seems necessary to determine scientific-methodological and organizational-methodological basis of vocational preparation of craftsmen and implementing a system of continuous craftsman education.

MATERIALS AND METHODS

Methods of Research

The following methods were employed in the process of research: theoretical (the analysis of pedagogical and psychological literature, regulatory documents, federal state educational standards, courseware documents related to craftsman education), general scientific methods of research (synthesis, analysis, classification and comparison); diagnostic (questionnaires; interviews); empirical (exploring craftsman experience, regulatory and courseware documentation; pedagogical observation and expert evaluation method); experimental (stating, forming and controlling experiments); methods of mathematical statistics.

Experimental Basis of Research

Research and trial facilities are represented by vocational educational institutions of Sverdlovsk and Chelyabinsk regions and Yamalo-Nenets Autonomous Okrug that develop and implement experimental educational programmes of preparing workers for craftsman's enterprises. The experts were the managers of small craftsman businesses and individual craftsmen of Sverdlovsk and Chelyabinsk regions. More than 500 students, 65 masters of vocational training and vocational-pedagogical specialists, more than 40 owners of small craftsman businesses, individual craftsmen, self-employed craftsmen, 5 representatives of craftsman civil societies were involved in the pilot work process.

Stages of Research

The research was carried out in three stages:

The first stage was devoted to reviewing the issue under study in pedagogical and psychological literature. The topic was investigated in terms of pedagogical theory and practice, the specifics of craftsman activities was analyzed. There were defined the subject matter, character and the structure of vocational competences of craftsmen. The main directions for research were specified on this stage.

The second stage resulted in developing a structural-functional model of continuous craftsman education including formal, non-formal and informal education types: outlining a complex of organizational-pedagogical conditions which contribute to implementing the given model.

The third stage was completed by the implementation of the structural-functional model of continuous craftsman education with taking into account the complex of organizational-pedagogical conditions. The accomplished results were processed,

RESULTS

Model Structure of Continuous Craftsman Education

To describe continuous craftsman education, we chose a structural-functional model that consists of four interrelated components: goal-related, content-related, organizational and activity-related, and result-related ([Figure 1](#)).

Goal-related	Social order					
	Personality: performing vocational activities, self-improving of personality		Society: quality execution of individual customer orders		State: creating jobs for the public, economic stability by development of small and medium-sized businesses	
	Aim – the formation of vocational competences, accumulation of experience, mastering skills in the process of continuous education					
	Objectives					
	Inspiring interest for craftsman activities (professional orientation)	Forming professional competences, personality traits in the process of vocational education and self-education	Performing professional activities (introduction to a profession)	Accumulation of experience and mastering skills in the process of professional activities	Motivation to gain additional competences and their application into craft activities (systematic improving of qualification)	Passing on the accumulated experience to younger craftsmen (mentoring)
Content-related	Methodological approaches					
	System			Process		
	Principles					
	Professional orientation			Consistency		
	Contents of vocational training for craftsman					
Requirements of professional standard for the level of craftsman's training			Requirements of educational standard for the level of craftsman's training			
Organizational and activity-related	Education type					
	Formal		Non-formal		Informal	
	Organizations					
	Governmental and non-governmental educational organizations, qualification courses of advanced studies		On-the-job training, local clubs, clubs of technical art, handicrafts chambers, associations and unities		Mass media, Internet, professional skill competitions, conferences, workshops, communication with representatives of other professions, reading specialized literature, visiting cultural events and practical trainings	
	Education technologies					
	Workshop technologies			Pedagogical and networking technologies		
	Education methods					
	Reproductive methods of education (studying reference materials, imitation of manufacturing situations, producing parts of items under master's supervision, analyzing causes of production defects)			Productive methods of education (independent production of a prototype, search methods of learning, creative solutions for applied situational tasks)		
	Education forms					
	Individual (individual learning path, personalized curriculum, independent work, face-to-face consultations, sharing experience of master's work)			Group (lectures, seminars, workshops, trainings, professional skill competitions, roundtable discussions, conferences, technical visits)		
	Organizational-pedagogical conditions					
Complex approach towards vocational education of craftsmen including the potential of formal, non-formal and informal education types		Networking of educational institutions, science and businesses		Support on behalf of governing bodies of federal, regional and local levels		
Result-related	The performance of vocational craftsman's activities, systematic increasing of qualification level, gaining experience, skills and secrets of production Result: professional accomplishments of a craftsman					

Figure 1. Structural-functional model of continuous craftsman education

This model is, on the one hand, based on the state demand for competent specialists, as well as creating a flexible system of satisfying social needs in the sphere of vocational education, which is both valuable for the state and the society. On the other hand, it is learners' needs for mastering and doing professional activities, which presents personal value.

The Contents of the Model of Continuous Craftsman Education

Methodologically, the given model is based on the concept of continuous education which includes formal, non-formal and informal education. Formal education is carried out in specialized institutions and it finalizes by delivering of an acknowledged certificate or a diploma. It provides people with knowledge and skills, forms their attitude to work, and contributes to adjusting to new technologies and fast-changing labour market demands. Formal education can be considered as investment in human resources, since it is designed to produce skilled, efficient and motivated labour force. Non-formal education comes as supplementary and is not normally accomplished by giving out documents. It is carried out in educational and public organizations, in the working place, in clubs and skill networks at the place of residence. They facilitate a smoother introduction into the world of trade, improve preparation for working life, and reinforce productivity, professional mobility, career opportunities, job satisfaction and self-fulfillment.

However, education is possible outside specialized social institutions and the sphere of education. All life-sustaining activities serve as sources and instruments for people's education and development. Therefore, at the present time a lot of attention is drawn by informal education, i.e. non-targeted individual cognitive activity accompanying daily life. Non-formal education functions as a supplementary, gap-filling instrument, compensation, implementation of knowledge, abilities and skills, adjusting them to up-to-date requirements. Non-formal education help people on the way to education (self-education) and (self-) improvement, understood in their broad meaning, in order to provide a person with diverse contents of education [4]. Thus, the integration of all types of education leads to creating an integral continuous system of education and presents one of the main premises for innovative educational activity.

On the basis of analysis there was formed a model of continuous craftsman education that represents a set of the following components: goal-related, content-related, organizational and activity-related, as well as result-related, each of which performs its particular functions to support the whole model as a system.

Goal-related component of the given structural-functional model of continuous craftsman education is stipulated by modernization of the Russian education and the social order which specifies goals and objectives of craftsman preparation.

The main goal is the formation of vocational competences, gaining of experience and skills in the process of continuous education. To reach this goal, it is necessary to do the following tasks step by step:

- inspiring interest for craftsman activities (professional orientation);
- formation of professional competences, personality traits in the process of vocational education and self-education;
- performing professional activities (introduction to a profession);
- accumulation of experience and mastering skills in the process of professional activities;
- motivating to gain additional competences and their application to craft activities (systematic improving of qualification);
- passing on the accumulated experience to younger craftsmen (mentoring).

The central connecting element between the goal and the result of continuous craftsman education is its contents identified by the *content-related component*. The content-related component is actualized according to social order of the society, the state and personality and implies acquisition and willingness to apply the whole system of knowledge, abilities, skills, personal traits, learning methods of applying competences in practice in the course of professional activities. The requirements to the level and the contents of vocational craftsman training are set out in vocational and educational standards. Given that, it is necessary to comply with the principle of professional orientation and consistency. The principle of *professional orientation* implies understanding and accepting goals and objectives of professional activity, reinforcement of positive attitude towards future profession. *The principle of consistency* assumes that the process of vocational training is carried out step by step. This process is the more successful and effective, the fewer failures in order and disruptions it contains.

Organizational and activity-related component consists of a complex of methods and forms of education and modern educational technologies. It performs the following functions: organization and formation. Organizational function lies in organization of vocational education process in accordance with the goals and particular teaching principles, determining the selection of forms, methods and tools of education. The function of formation consists in inspiring interest to the profession, development of professional competences and personality traits, gaining professional experience, exploring secrets of proficiency and passing on the experience to young craftsman. It is accomplished through learning, non-learning, professional and mentoring activities. All types of activities are interconnected by the internal structure, pedagogic results and the procedure, similarities in goals (acquiring a profession, relevant traits and experience) and motives. Carried out side by side, these types of activities form the personality of a specialist and his readiness for professional activities.

The most effective technologies of continuous craftsman education are technologies of workshops and technologies of cooperative pedagogy. Technologies of workshops imply organization of educational process with a master teacher who introduces his students into a cognitive process through creation of emotional atmosphere where every learner is able to express himself as a creator. Among the opportunities of these technologies are the following: in-depth training, education without a tough curriculum, the project method, immersion programmes and creative activity of learners. Technologies of pedagogical cooperation are aimed at development of a learner's personality. Personality is the target of the educational system. Democracy, equality and partnership are the underlying principles of subject relationships between a teacher and a learner.

Methods of education are divided into reproductive (aimed at acquiring) and productive. Reproductive methods of education include studying reference materials, imitation of manufacturing situations, producing parts of items under master's supervision, analyzing causes of production defects. Productive methods of education are independent production of a prototype, search methods of learning and creative problem-solving of applied situational tasks.

Individual and group education formats are distinguished among those implemented throughout the process of continuous craftsman education. Individual forms (individual learning path, personalized curriculum, independent work, face-to-face consultations, sharing experience of master's work). Group forms (lectures, seminars, workshops, trainings, professional skill competitions, roundtable discussions, conferences and technical visits). The effective functioning of the given model is ensured by complying with specially created conditions which organize educational activity.

The result-related component of the developed model enables to diagnose reaching the stated goal of forming professional competences, gaining experience and skills in the process of continuous education. The benchmarks will be the choice of a craftsman job, quality of vocational training, vocational craftsman activity, systematic qualification improvements and accumulation of experience and skills relevant to the chosen profession. The result will be demonstrated by professional accomplishments of a craftsman.

As can be seen from the above, the proposed structural-functional model of continuous craftsman education reflects the main tendencies of the modern educational system and can be used as the basis for the process of vocational craftsman education.

Pedagogical Conditions of Implementation of the Model of Continuous Craftsman Education

The following organizational-pedagogical conditions are required while implementing the model of continuous craftsman education: a complex approach to vocational preparation of craftsmen including the potential of formal, non-formal and informal education; networking of educational institutions, science and business; support of state government bodies on federal, regional and local levels.

The first pedagogical condition – a complex approach to vocational craftsman education including the potential of formal, non-formal and informal education. The choice of profession, producing first pilot items, gaining experience and exploring secrets of proficiency require daily involvement. From an early age, it is necessary to cultivate in children love for work, for constructive and creative activities, since the basics of the whole future personal development are formed at that age. Preschool age is a critical stage in the development and education of a person. This is a period of inspiring a child to explore the outer world, marking the start of his socialization. It is at this age that the independent thinking gets activated, the cognitive process and curiosity are developed. At the present time, there are created preschool educational institutions with one or several priority directions for the development of their students (artistic-aesthetic, technical, ethno-cultural, etc.) targeted at developing abilities of independent creation and aesthetic sensitivity, learning how to manually produce creative things and familiarizing them with universal human values. Simultaneously, there are schools providing supplementary education for children: children and youth centers, local clubs, art schools, children and youth technical art schools (scientific-technical or for young technicians), whose main aim is to motivate a person for cognition and creation. Acting cooperatively, these organizations contribute to drawing children into manual work, familiarizing them with arts and crafts, developing their skills and introducing into the world of professions. It is worth pointing out that family education is of prior importance. Parents are those who make the first tutors and have the strongest influence on children. The development of intellectual and creative abilities, the initial working experience, ethical and aesthetical formation, children's emotional culture and physical health, their happiness are highly dependent on family education. Thus, the unity of educational impact, formal, non-formal and informal education in their integration is noted at very early stages of life and responsible for personal actualization.

In the further education in general educational institutions during arts and crafts lessons, technology, drawing, graphic art and the world art culture, socially-useful work and elective courses students get acquainted with the main working skills. This period is characterized by the importance of peer interaction and the leading role of

friends' and acquaintances' opinions. The attitude towards a profession is formed very early. Initially, this attitude is positive, because having a profession means being an adult, which benefits in many ways. Eventually, the knowledge on professions gets deeper and more diverse. With this in mind, the knowledge about specialties will be always "connected" with a person, i.e. we'd rather collect information on professionals than professions. It is the public opinion that sometimes provides the wrong general impression on people of a particular job. A craftsman must be treated as a master of his craft, highly qualified worker who is able to design the launch process of unique products in close interaction with the customer, having competences necessary for a businessman, appreciating and respecting his profession and himself [5]. This is transmitted by craft fairs and festivals, annual Russian competition "Craftsman of Russia", the development of movement WorldSkills and "Slavim cheloveka truda (Glory to a Working Person)", the introduction of an honourable title "Master craftsman of Russia" and "Honoured craftsman of Russia".

In the process of vocational training in secondary vocational institutions and higher schools, special knowledge is acquired, competences are formed which make the basis for professionalism. However, vocational education is not deemed to be sufficient for the smooth introduction into the world of labour. Young people must be informed about the working environment, the concept of productivity, economic and social development of the society and social expectations towards them. They must be able to work in a team, easily navigate through an increasing amount of information, and strive for self-perfecting and acquiring new knowledge. Consequently, this broader concept of education exceeds the frames of the traditional formal education.

Of special importance is informal education in the working place and the practice. Firstly, "the practice" is mechanical work, a skill to continuously repeat once made operation. Secondly, "the practice" represents a cognitive process, adjusted and applied to a general case, thus making the latter a tangible private one [6]. Indeed, mechanical skills, necessary for a craftsman, are mastered in practice over long years: manual dexterity, precision in movement and the ability to judge by eye. Students' reproductive activities under master's supervision are gradually replaced by his creative activities. In that case craftsman activity can be called "techne", i.e. an art, a skill and creative implementation. A craftsman skill, proficiency is passed on from a master to a student, from hand to hand. A student watches his master's activities, memorizes them and repeats with his hands. In the first case, the practice is aimed at the subject of craftsman activities - material items or services, necessary for a customer. But craftsman activity is also a process where all conditions, causes and reasons of activities are closely connected. In this case, the practice is aimed at cognition of craftsman activity process and must include reproducing all the stages of craftsman activities in the context of ever-changing production conditions. The most thorough study of details must be joined into a united process and provide a full and vivid picture. In order to make vocational craftsman education successful, it is necessary to take into account the specifics of craft activities: the ability to apply knowledge to a particular case and in changing conditions, and the ability to overview the whole process. This is followed by important principles of craft education at the production: reproduction, visualization and the ability to overview the whole process [7].

The main role in the further training of adults is given to informal education, i.e. an individual cognitive activity in daily life, which is realized by means of individuals' own activities through communication, reading, attending cultural events, mass media, daily work and entertainment. It is informal education that is supposed to last "over the whole life", representing continuous education and including all possible branches of knowledge, and give people opportunities to reach the full potential of their personalities [8]. Informal education implies creating conditions under which an adult can seek self-identity (thus demonstrating his personality essence, self-awareness, defining personal place in the world and self-reference towards the fundamental ethical values). From this angle, informal education is the development of abilities and skills helping an adult in searching for his identity regarding a profession, age and culture. Informal education requires not only doing educational activities in external environment, but also constant internal education and changes due to the impact of acquired knowledge [8]. Therefore, the interconnection and interdependence of formal, non-formal and informal education ensure the integrity of continuous craftsman education throughout the whole life.

The second pedagogical condition - networking of educational institutions, science and business. In the broadest sense, networking cooperation means activity space which is created and maintained by joints (centers) of activities and communication channels between them. The participation in networking means following a number of arrangements towards cooperative actions and using resources and competences of multiple independent institutional participants from different territories in order to reach each participant's goals [9, 10]. In the system of education, networking is most often viewed in terms of organizing subject-oriented education, improving qualifications of pedagogical specialists, setting up social and professional networks, managing innovative activities, etc., mainly using the opportunities of the Internet [11]. Networking is based on the system of vertical and horizontal connections as well as principles of self-regulating activity, ensuring unified approaches, in the framework of educational network, towards the contents, technology and organizational transformations [12]. Providing all participants of interaction have common issues and interests, organizations join the network on a voluntary basis. The organization of networking requires at least two participants who are interested in solving a

common problem and have necessary resources. The main form of participation in networking is professional communities, unions and associations. So, for example, on August 20, 1999, the Russian Handicrafts Chamber was founded, uniting entrepreneurial associations, structures which provide domestic services, municipal industry, business subjects of the Russian Federation, etc. Among the registered members of the Russian Handicrafts Chamber there are the companies and societies that account for 60 % of the subjects of the country, including 40 entrepreneurial chambers of the subjects of the Russian Federation. Craftsman organizations and their members embrace small businesses and the middle class of the Russian population, i.e. approximately 4-6 m people, not including trade workers. They are able to work without investing much; run material production and offer services with fast turnover of funds; on their own organize living environment for a populated region; increase the employment rate and provide proper housing conditions, thus unloosening social discrepancies; reinforce national traditions in Russia and follow them, etc. Craft Academy, scientific-methodological center, certification and standardization center, the Bulletin and other social structures were founded under the Russian Handicrafts Chamber. However, it is necessary to reinforce the interaction between educational institutions and scientific-educational centers of craft development when passing on experience and traditions of craftsmen, attracting younger generation to arts and crafts, forming a creative attitude towards the life and preparing craftsmen for future employment [13]. Consolidated efforts of all networking participants will facilitate the development of craftsman activities and appearance of new modern professions on both education and labour markets.

The third pedagogical condition is the support on behalf of state government bodies on federal, regional and local levels. To establish and develop craftsman activity, a number of groups of tasks are to be done: ensuring legitimization of craftsman activity on federal level of craftsman activity and vocational craftsman education through relevant legislative enactment regulating relationships in the sphere of labour and education; creating a list of craftsman professions and professional standards, documents, used by employment and social bodies; modifying the list of professions and specialties of elementary and secondary vocational education; developing state educational standards of teaching craftsmen-entrepreneurs in order to form a legal framework of vocational craftsman education [1]. The given list of problems, which retard the development of craft activities and craft education, proves that the situation cannot be changed by one side alone. It requires support from state government bodies on all levels, which will not only create favourable socio-economic conditions for craftsman activities, but also help many of craftsmen come out of the shadow, join the secondary class of Russia and understand their mission and roles in the history and the fortune of the country.

Approbation of the Model of Craftsman Continuous Education

To support the theoretical basics of the study and check the results of the developed structural-functional model of continuous craftsman education, there was carried out exploratory research procedures which are one of the most reliable methods of pedagogical research.

Exploratory research procedures lasted for 6 years (September 2011 to July 2017). The research was of longitudinal character (long-lasting and regular study of a particular group of people using the same parameters). There participated more than 500 students of craft specialties, 65 masters of production training and vocational pedagogical specialists, 37 managers of small craft businesses, individual entrepreneur craftsmen, self-employed craftsmen, and 5 representatives of public craft organizations.

The first stage of exploratory research procedures (ascertaining) was aimed at surveying students' opinions on the importance of craft education and expert evaluation of the current situation on the labour market.

The graduates were asked the following questions:

1. Do you think that a craftsman is a challenging profession for the modern economy?
2. In your opinion, what is the demand level for craft specialists?
3. What craftsman activity is the most successful (an employed worker, a self-employed person, a manager of a craft production or an owner of a small craft business)?
4. What competences are required to a craftsman for effective professional activities?
5. Do you think is it necessary to systematically improve craftsmen's qualifications?
6. In the nearest time, are you going to continue vocational education or take up professional activities?
7. Which type of education will you choose (formal, non-formal or informal) to continue your education?

The analysis of the results demonstrated that 73.3 % of graduates of vocational educational institutions find the profession of a craftsman challenging. 16.7 % and 43.8 % of them noted high and very high demand levels for craft specialists correspondingly. An employed worker was reported to be the most successful professional activity for a craft specialist by 54.8 % of graduates. 20.4 % voted for a self-employed person working on clients' individual orders, 11.3 %, for a manager of craft production and 13.5 % for an owner of a small craft business. The obtained results give a general overview of a situation. The majority of young people work in material production as

employed workers. Just over 2.0 % of the young people are employers who have their own businesses manufacturing goods. And approximately 10.0 % are involved in the sphere of small business [14].

What competences are required to a craftsman for effective professional activities? 34.6 % of graduates said legal, 21.4 % economic, 17.8 % general cultural, 12.1 % psychological-pedagogical, 9.8 % special and 4.3 % informational. 78.2 % of them highlighted the necessity to systematically improve qualification of craftsmen.

In answer to the question about whether to continue education or find a job, most of the graduates (58.2 %) said that in the nearest future they were planning to work, 24.7 % will combine study and professional activities, 18.0 % will continue study in educational institutions. Such breakdown is explained by the necessity to gain professional experience, financial difficulties of the graduates, level and quality of education.

62.7 % of those, who would like to continue vocational education, chose formal education in state and non-state educational institutions of secondary vocational education and higher education. 26.0 % went for non-formal education in the working place, individual training with a master, and 11.3 % voted for informal education.

As a result, the majority of the graduates believe that a craftsman has to systematically improve his qualification. With this in mind, only a half of them will continue study or combine it with work in the nearest future. When selecting a type of education, the majority will prefer formal education in state educational institutions which provide standard qualification documents proving the degree on graduation.

The expert evaluation method was implemented to assess the current situation on the labour market.

37 managers of small craft businesses, individual entrepreneur craftsmen, self-employed craftsmen, 5 representatives of public craft organizations acted as the experts. The selection of the experts was determined by the following criteria:

- for managers of small craft businesses: actual staff number (2-15 employees) and working period on the market (over 2 years);
- for individual entrepreneur craftsmen and self-employed craftsmen: working experience (over 3 years);
- for public craft organizations: the number of successful socially important projects made for craftsmen's support (more than 5).

The experts were invited to answer the following questions:

1. What type of education do professional craftsmen have?
2. What is the percentage of professional craftsmen who were not able to have professional training?
3. Is there a need for improving qualification of craftsmen?
4. What type of education is preferable among professional craftsmen, if any?
5. What factors determine the choice of formal, non-formal and informal education?

On balance, the results present useful information on education models of working craftsmen. In particular, they demonstrate rather high level of participation in different types of education. Just under 85.7 % of workers experienced formal, non-formal education or a combination of the both. At the same time, a sizable group of 14.3 % does not have any professional preparation.

As for improving qualification, 73.8 % of respondents find the further education necessary. What type of education is preferable for working professional craftsmen? 53.7 % of working craftsmen chose non-formal education, 26.5 % a combination of formal and non-formal education and less than 19.8 % rely only on informal education. Research of non-formal education gives valuable information on how this type of education is used by working professional craftsmen. The survey revealed that discussions with colleagues, shadowing them at work and independent learning are important sources of non-formal education. The first two are used most often.

The results also demonstrate that people with a low level of education, vocational preparation and income level spend a little time on non-formal and informal education, whereas the craftsmen with secondary vocational education or higher education and a high income level spend much more time on non-formal and informal education.

It is notable, even though just under 25.0 % of all respondents are not able to do any formal training, almost 50.0 % of them could do non-formal and informal training. At present, the most common reasons for the inability to continue formal education is lack of time (64.3 %) and education fees (32.5 %). Those, who prefer non-formal education, often mention such advantages as the ability to adjust education to their needs (51.3 %), lower fee (31.1 %), fewer time responsibilities (31.0 %), and fast access to the most recent information (29.8 %). Formal education was preferred by those who mentioned such advantages as an opportunity to get a diploma (55.2 %), the presence of a teacher (44.1 %), and saving time (23.0 %).

The survey on the experts' opinions made it possible to work out several statements about craftsman's education. Firstly, the results confirm that working professional craftsmen demonstrate a high level of interest towards further education. This fact presents a good premise for all attempts to build a system of continuous

vocational education. Secondly, the results prove there are opposite educational schemes: those, who have a lower level of education, professional preparation and income, spend a little time on non-formal and informal education, while the craftsmen with secondary vocational or higher education, and a high income level allocate a lot of time to non-formal and informal education. Thirdly, the received results suggest that a low level of education is an important barrier for further education and qualification improvement. A master's example, colleagues' and clients' opinions will be of great importance for those who have a low level of education. Fourthly, despite the fact that a lot of working professional craftsmen prefer non-formal education because of flexibility, a great number of others had to reject formal education due to lack of time, and not because of money matters. This means that widely offered initiatives, such as individual students' loans, are important, but can only partially solve the problem. Collectively, educational institutions and small businesses can contribute to training in the working place, in educational centers, development of long distance education, etc. Fifthly, the participants put forward an opinion that the administration of craftsman enterprises has to play an important role in encouraging further education. However, the opinions alternated between the forms of how to promote and support education.

Thus, the results of the stating stage proved the necessity of implementing especially designed structural-functional model of continuous craftsman education in the pedagogical process.

On the second stage of exploratory research procedures (forming) the pedagogical process was performed in accordance with the structural-functional model of continuous craftsman education, taking into account a complex of organizational-pedagogical conditions.

On the third stage of exploratory research procedures (controlling) there was identified the dynamics of the results to be achieved, corrections were made and conclusions were drawn. Considering that education is a continuous process and results can be analyzed only after finishing labour activities, we have drawn preliminary conclusions. In the process of research, 45.0 % of graduates of secondary vocational education continued studying crafts in higher schools. 37.9 % acquired similar secondary professions in the course of supplementary education. 58.7 % of graduates were employed as hired workers, 11.2 % do a part-time job, working on individual orders from clients, 9.4 % work as medium-level managers on craft production, 3.3 % registered small craft businesses, 17.4 % of graduates dropped out of the profession.

21.4 % of working professional craftsmen, who do not have vocational education, studied in secondary vocational institutions. 63.6 % of working professional craftsmen continued their education 21.7 % of them chose formal education, 30.0 % non-formal education, 36.5 % a combination of formal and non-formal education and 11.8 % informal education. 7.4 % registered small craft businesses, 19.6 % continued working as medium- and top-level managers on craft production, 17.2 % work on individual orders from clients, 42.1 % continue working as employees, 13.7 % dropped out of the profession. 62.7 % took part in craft exhibitions and fairs, 32.5 % in professional skill competitions, 16.7 % of them became winners and runners-up.

Proceeding from the findings above, it can be said that the developed model of continuous craftsman education is effective and can be used in the course of vocational craftsman education.

DISCUSSIONS

The issue of developing vocational craftsman education which is aimed at focused preparation of staff for craft type businesses was addressed in the studies by G. M. Romantsev et al. [1], D. Talbot [15], G. M. Romantsev [16, 17], G. M. Romantsev & A. V. Efanov [18], E. M. Lokotnikova [19], D. A. Kuprikov [20].

Organizational-pedagogical conditions and the system of psychological-pedagogical support for training craft staff were provided by the works of A. V. Yefanov & Y. A. Nemtchinova [5], E. F. Zeer et al. [21], N. A. Doronin [22], A. P. Zolnikov [23].

Formal, non-formal and informal education was studied by V. V. Gorshkova [24], I. O. Kotlyarova & M. Prochazka [4], O. V. Pavlova [8], D. Talbot [15].

The studies by E. M. Dorozhkin, E. F. Zeer & V. Y. Shevchenko [25], D. P. Zavodchikov, A. A. Sharov, A. A. Tolstykh, E. S. Kholopova & A. I. Krivtsov [26], G. N. Zhukov [27] are dedicated to the issue of continuous education.

However, the studies, mentioned above, give no thorough consideration to the specifics of continuous craftsman education. The system of continuous craftsman education is at the nascent stage. Therefore, further research is necessary as a possible basis for a new education type in Russia – vocational craft education.

CONCLUSION

As a result of exploratory research work, there were achieved the following results:

1. Distinctive features of a craftsman's professional activities were defined as distinguished from a worker's and entrepreneur's.
2. The idea of integration of all education types (formal, non-formal and informal) was theoretically proved, which requires creating a consistent and continuous system of craftsman education.
3. There was developed the model of continuous craftsman education, which was approbated in the course of exploratory and research work. The model includes the potential of formal, non-formal and informal education.
4. There was identified a set of pedagogical conditions which help implement the model of continuous craftsman education: a complex approach towards vocational preparation of craftsmen, including the potential of formal, non-formal and informal education; networking of educational institutions, science and business; support from state government bodies on federal, regional and local levels.

The analysis of the obtained results confirmed the hypothesis which had been introduced; however, the given research does not claim to present a thorough analysis of all aspects due to complexity of the issue under study and puts forward a set of problems to be solved. Among these, significant are vocational counseling regarding craft professions, staff assistance for craftsman's preparation and institutionalization of the system of craft education.

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