

# Foreign Experience of Industrial Learning Teacher Training For the Dual System of Vocational Education

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## Abstract

**Introduction:** The preparation of highly qualified personnel that meets the requirements of employers is one of the topical tasks of a state. With the opening of new production sites and with the development of high-tech industries, this task acquires a particular urgency. In this regard, there is an increasing interest in practical-oriented forms of personnel training, which provides the training of highly qualified specialists in a relatively short period. The dual system of professional education provokes a special interest among the representatives of business and education, which, due to the combination of theory and practice in the optimal ratio, ensures the use of the productive work of an intern under the guidance of an industrial training tutor after the first year of the educational program study. Within the framework of this article an attempt is made to generalize and systematize the foreign experience of industrial training mentor preparation for a dual system of vocational education in order to identify the adaptive opportunities of foreign experience use.

**Methods:** The research is based on a wide use of analysis, systematicity and complexity, factor analysis, as well as on the methods of structural and statistical analysis. These methods were used in various combinations at different stages of the study, depending on a goal and tasks to be solved, which undoubtedly contributed to the reliability of the performed analysis provision and the validity of the conclusions made by the author.

**Results:** In the course of the study, the system of professional education and the content of training programs were analyzed for industrial training mentors in such countries as Finland, Germany and Japan. Their adaptive potential was revealed.

**Discussion:** The main results of the study were reported and discussed at scientific and practical conferences of international, all-Russian and regional levels.

**Final Report:** The conducted research allows to draw a conclusion that the experience of these countries can be used successfully in Russia, provided it is studied in detail, the analysis of contributing and blocking factors of its application in the context of interaction between domestic business and vocational education, and the development of adaptation mechanisms for its application in the preparation of industrial training tutors.

**Key words:** Vocational education, Dual system, Industrial training, Industrial training tutor

## INTRODUCTION

Many experts in the field of vocational education and business note that there is a gap between the needs of the economy in the workforce and mid-level experts, their

availability and the conformity of their qualifications with employers' requirements [1, 2]. Depending on the industries, this gap makes 30-70%. In order to address this gap at the state level, they developed the "Strategy of personnel training system development and the development of applied qualifications in Russian Federation for the period until 2020". This strategy implies the implementation of a whole range of measures for the development of vocational education domestic system. This also includes the study of foreign experience in the functioning of vocational education dual system, the study of vocational training mentor preparation experience and the development of adaptive mechanisms for their application [3].

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Foreign experience of economically developed countries indicates the reasonability of advanced training technologies application that provide their employees with the possibilities of the maximum possible dedication, which helps to bring the products of their companies to the forefront.

However, the wholesale copying of foreign forms and method of young professionals training without their constructive analysis for their application in Russian conditions is fraught with negative consequences, since only their rational use, demand and the possibility of adaptation in the context of Russian industry, taking into account the specificity of production factors, the efficiency in a specific context and at a specific stage of a company development contribute to its economic efficiency and competitiveness.

The interest for this study is the foreign experience of mentor training for the purpose of constructive extrapolation of its elements into the domestic system of mentor training for the dual system of vocational education. The following problems were determined as the particular tasks in the study of a determined problem: the identification of the requirements to the competences of industrial training mentors for the system of dual professional education and the analysis of existing training programs for mentor preparation in the system of vocational education at foreign countries.

## RESULTS

At present, the vocational education system in Finland is faced with the task of expert competencies and competitiveness improvement at the labor market, the development of their readiness for entrepreneurship, labor relations and lifelong learning [4; 5].

The successful training of a mentor industrial training in Finland is facilitated by close cooperation between educational institutions and enterprises, which significantly improve the quality and quantity of student accompanying in a dual training system, improves the quality of preparation for work and improves their professional skills.

The training in real production conditions, in a real working environment is a key point of vocational education, professional development and professional skills improvement among future mentors [4; 5]. The targeted and systematic training at a workplace requires a detailed description of the training goals and outcomes in terms of competencies, the orientation of all practical training content on these aims and the coverage of the entire learning process with an adequate methodological support.

The target orientations of the vocational education system of Finland are characterized by the following areas: the promotion of training at a workplace and various forms of competency demonstration; The provision of received education conformity with the requirements of production; The assistance in qualification acquiring, the maintaining of a professional level and the provision of qualified personnel availability; the support for the entry of citizens into the labor activity, the employment of qualified persons, as well as the willingness of young people and adults to work life; the provision of retraining possibility for the unemployed and those who are at risk of being dismissed; The development of innovative activities in labor collectives and in education; The maintenance of well-being and work safety [5; 6].

The training of tutors for industrial training in Finland is conducted by the representatives of various spheres of work and specialties. The development of the course program takes into account the professional and profile orientation, as well as the needs of specific companies, so that the training is applicable and useful in a wide variety of industries and at various manufacturing enterprises. The training of vocational preparation mentors is characterized by flexibility that is oriented to the specific situation and individual needs of each trainee, also in the dual training format. An organizer of a course is responsible for a course adaptation to each trainee, depending on a person he will have to instruct and his type of training to evaluate (options: the students of basic vocational education system, the vocational training with the preparation for an exam or the training within the dual system of education). Among other things, the previous level of knowledge, skills and habits of listeners are taken into account. Training is conducted according to a plan that reflects the identification and the recognition of previously acquired knowledge and skills by a mentor. Three weeks is required to achieve the goals and the objectives of a course on the average. The course program consists of the following modules:

1. The planning of production training, demonstration examinations and qualification measures;
2. A student's counseling, the assessment of academic performance;
3. The assessment of a student or an examiner professional skills [6; 7].

Course modules are not tied to a specific sequence of passing - their passing is possible in an acceptable order for a trainee.

Educational institutions that are the organizers of training can conduct the training of industrial education mentors, when teachers pass the period of familiarization with work activities. At the same time, teachers can instruct the tutors

of industrial training in the matters related to the work with students. Along with this, it is advisable for a teacher to train mentors also as a part of supervisory visits during the period of the students' production practice. Financing the training of industrial education mentors can be carried out at the expense of various organizations - companies, the National Board of Education, the organizers of courses and examinations of professional training [7]. The training of industrial education mentors can also be carried out in the framework of project development within the cases when it is expedient in terms of project goals and objectives. An organizer of a training course for the tutors of production training ensures the identification of previously acquired knowledge, skills and abilities of trainees, as well as the drawing up and the delivery of course completion certificates.

The feature of industrial training tutor preparation in Germany is the adoption of the document "The Instruction on the suitability of instructors" at the federal level. This document contains a number of the following requirements:

- The development of industrial training content (the development of a program and educational-methodical training complex);
- The provision of positive results achievement by students (including the provision of conditions which contribute to successful learning and motivation culture development for academic and future professional activities and a feedback to students);
- The selection of teaching methods and materials according to a target audience and their application in accordance with an educational or a production situation;
- Determination of needs in cooperation with partner enterprises.

Mentoring requires serious preparation, since the functions of a mentor depend on a size of a company, an enterprise specific features. Three levels of mentor qualification are accepted in Germany: an assistant, a trainer (an instructor) and a master.

In order to obtain the highest title of a master, you must have an appropriate period of service with at least 5 years of professional experience, the completion of 90-hour advanced training courses with a successful passing of the examination in a trade, an industrial or a craft chamber; The title of a master is equated to a bachelor's degree, gives the right to open one's own business in a certain industry.

There are special training programs for mentors, which are developed on the basis of federal requirements and are completed with mandatory certification of the received qualifications.

However, there are still special difficulties in Russia associated with the proposal of similar measures. Mentoring is sufficiently developed and maintained at large business enterprises. There is not enough clarity about the ways of support and motivation of training activities, and the ways of mentor certification at small and medium-sized enterprises [8].

The Center for Advanced Studies at the Chamber of Commerce and Industry of Germany (CCI), the project "Mentor training around the world" is implemented, which aims to provide professional training to ensure the leading positions of its company in a global competitive environment [9, 10, 11].

This training program is an important component by which foreign trade chambers can help to improve the quality of mentor training. The goal is to train mentors with the support of the German training model. For this purpose, the training center of the Chamber of Commerce and Industry of Germany developed an international training concept for mentors. The content of the concept corresponds to the German quality criteria provision on the admission of mentors and takes into account the characteristics of a respective host country at the same time.

The starting point of the course "Mentor training around the world" is the current framework schedule of the association of the CCI of Germany association for the professional training of mentors in accordance with the provision on the admission of mentors. It contains a detailed information on the way to combine the skills of professional and pedagogical training with practical and process-oriented material. Thus, the training course allows you to prepare future mentors to perform their tasks as assistants accompanying the learning process at an enterprise.

The structure of the training material is strictly based on the production practice and follows a typical scheme for learning from 4 areas of activity: checking the prerequisites for training and training planning; Preparation of training and the assistance in the recruitment of students; Training; The completion of training.

During the courses, along with the development of practical and process-oriented learning skills, the change of experience among the participants also takes place. Thus, the training course develops professional skills, the skills of teaching method use, the social and individual competence of future mentors, that is, the skills of activity in production practice. There is no doubt that the skills and abilities that students must possess after a training completion must be acquired by a mentor in the course of similar professional activities.

During a final exam, a mentor confirms “the ability to plan, conduct and control the production training independently”. This formulation suggests that the same requirements are applied to mentors as in many vocational training institutions, in which the examiner, as a rule, must confirm his professional capacity, which consists of “skills, knowledge and abilities” [12, 13, 14]. The Japanese experience of mentoring is characterized by:

- The effectiveness of expert corporate training depending on a state policy aimed at the development of corporate training;
- The efficiency of this process is facilitated by a high educational level of the Japanese, based on the fundamental knowledge gained at school;
- The high-tech process of corporate training promoted by the traditional practice of “internal training”, in which a company prepares the necessary personnel;
- an emotional attachment to the final results of work, which is facilitated by a unified system of personnel management in a company, which is engaged in the educational effect of training improvement while working.

The training of industrial training tutors in Japan is tied to the conditions of the Japanese enterprise management model peculiarities, characterized by:

- A system of lifelong recruitment, the meaning of which is that a company recruits young people, mainly from the recent graduates of educational institutions and beginners are trained in a company, and thus they meet the requirements of a company, where they work for a lifetime subsequently;
- A personnel rotation, consisting in the movement of employees horizontally and vertically every 2-3 years, without an employee’s consent to develop a more extensive view of his company;
- A system of reputations that consists in an impeccable reputation provision by an employee, on which his rotation depends in the future;
- The absence of requirements from schools and universities concerning the practical orientation of graduate training on the part of Japanese enterprises, as they train their employees by themselves to the level required by an enterprise;
- The acquaintance of young experts not only with the strategic trends of a company development, but also by introducing into the course of affairs concerning the future integration of their activities with the activities of other links, which can ensure their rapid adaptation to external changes and stimulate their desire to self-improvement;
- The attractiveness of professional and additional education in Japan, achieved through the development

- of hope among young people for future career growth;
- The basis of vocational training Japanese system at firms consist in a “flexible worker” concept;
- The selection and retraining of workers carried out not by one, but at least by two or three specialties, and then the organization of continuing education throughout life;
- A continuous education, which is part of the work process, in which each employee devotes about 8 hours a week at expense of personal time;
- The practice of personnel use and regulation within a company to ensure an intra-firm competition [14].

The above mentioned components ensure an effective development of a company in a complex way, and each of them is a kind of a subsystem in a single system and can not exist independently.

The system of corporate training in Japan, and therefore the training of industrial training mentors, is very different from the western one by the fact that its features include paternalism, characterized by a system of additional benefits, subsidies and payments at enterprises with the aim of staff binding, the guardianship and control of their subordinates); a collective decision-making; the refusal from rigid plans [14].

Corporate training and the preparation of industrial training tutors in Japan are implemented in the following forms:

- Training outside the work conducted in a company in the form of short-term training courses, differentiated by position and qualifications, by topics necessary for an employee professional growth);
- The training during work is carried out at a workplace in the process of work performance under the supervision of a superior or a more experienced employee according to the principle “look and imitate”;
- The training besides work, conducted outside a company in the form of consultations with the specialists from resource centers; the participation in seminars and conferences;
- Self-education of employees, not supported by company requirements.

It should be noted especially that the main popular models in modern Japanese companies are the training during work and self-education.

Japanese experience of mentoring activities implementation can include four stages. The first stage of training begins with the fact that a mentor gives some practical knowledge, fixed by several repetitions, to his protégé. The second

stage is based on a mentor's task to develop the potential of his students, to teach them to find the opportunities for improvement, that is, he transfers his wards from "do" to "think" plane, so that they understand not only the specific process they are working but how to treat any process as a whole. At this stage, newcomers learn to explain what they understood, that is, the mentor takes him from the plane "think and get to the bottom" into the plane "understand well enough to explain to another one". During the third stage, "from the reflection to self-study", young workers learn to ask questions to others and themselves, and the mentor's task is not so much to check the knowledge of his students as to develop their ability to ask right questions, since their self-learning skills depend on this. The fourth stage is characterized by a full understanding of the process, the finding of mechanisms for problem detection and their solutions. At this stage mentors control the knowledge of young personnel, their understanding - forcing them to explain what they learned to the mentors. Such a technology of young staff corporate training includes the elements of all above mentioned technologies, which are used in foreign practice of mentoring.

## CONCLUSIONS

Foreign experience shows that mentor training programs for the dual training system should be aimed not only at the transfer of personal professional experience, developing general and professional competencies, but also for mobile adjustment of the student professional competencies, as well as at the increase of their motivation to establish long-term labor relations with a enterprise. During the development of mentor training programs for a dual system of education, it is necessary to take into account the structural integration (interaction of education and production), the substantive (integration of their training content in an educational organization and at an enterprise) and the technological (integration of training forms and methods at an educational organization and at an enterprise) integration. Proceeding from the leading function of a mentor in the system of dual training, which is educational one, the training programs of mentors should be oriented towards the development of a student socially-oriented personality, the development of his corporate culture and adaptive abilities in the conditions of an enterprise.

Summarizing the above mentioned material, the idea is confirmed that the key factor influencing the efficiency of an enterprise development is the system of production training, including the training of mentors for the timely

transfer of experience and an enterprise competitiveness maintaining, which is expedient to carry out within the dual system of vocational education that promotes a balanced information replenishment of a company potential.

Germany and Finland can be included in the countries with developed economies, due to the use of adequate forms and methods of mentor preparation for industrial training within a dual system of vocational education. The experience of these countries can be used successfully in Russia, provided it is studied in detail, the analysis of facilitating and blocking factors of its application in the context of interaction between domestic business and vocational education, and the development of adaptation mechanisms for its application in the training of mentors for industrial training.

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