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THE FEATURES OF SELECTION OF APPLICANTS FOR THE "HUMAN-MACHINE" SYSTEM BASED ON METHODS OF ESTIMATION OF PSYCHOLOGICAL PROPERTIES

Based on the analytical review of the properties of human-machine interaction in a single system "Human-Machine" the article suggests methods for selecting employees for various tasks. This will improve the quality of the work done at the enterprises by highly qualified specialists considering their individual properties.

Keywords: *"human-machine" system, applicants, evaluation methods, candidate selection, criteria selection.*

Theme actuality. In the modern world different approaches are used to increase labor productivity in production, including the selection of highly skilled personnel who have not only accumulated knowledge but also acquired skills [1]. To resolve this issue, a selection of candidates (selection of applicants) having certain properties related to the decision of tasks of the technological process of the enterprise is carried out. One of the many tests available is the use of a wide range of tests and interviews with applicants [2]. In addition, you can also use different methods and specific techniques, created on the basis of engineering psychology, and borrowed from other sciences [2, 3]. Therefore, the management of an enterprise hires a specialist that has engineering and technical knowledge and solving complex tasks, having skills, in front of him. At the same time there is a serious question for employers: how to select among the many candidates of the right person who has qualitative characteristics and can cope with the tasks.

Analysis of the subject area. The analysis of literature [1, 2] showed that, regardless of the technological process of the enterprise (see Fig. 1), isolated stages of the technological chain of this process can be distinguished. In this case, each stage can be characterized by certain properties (parameters), depending on the functioning of the industrial object. It allows to allocate several groups of specialist engineers (technologists) having certain characteristics.

In connection with the fact that the engineering staff solves a set of serious problems such as: logistics, the use of resources and their distribution, production of new products, as well as the distribution of new products to suppliers. In this case, there are problematic issues: which way to increase production capacity. The solution to this problem lies in different planes. First of all this is due to the change in the technological chain (process) on the basis of changes in the improvement of technical devices and systems. Another way is to select candidates who will carry out more productive tasks. Therefore the actual scientific task is connected with the development of mechanisms for the selection of applicants for the accomplishment of tasks in the system "man-machine" at the enterprise.

The purpose of the article. In this regard, the purpose of the article is to develop a mechanism for evaluating and selecting candidates for work in the enterprise in accordance with the technological structure among the engineering staff.

Presentation of the main material

Analysis of Figure 1 showed that in accordance with the technological chain in the performance of a production process it is possible to identify several groups that have their own "unique" properties. This is primarily due to physical (physiological) loads, as well as mental loading, as well as automated or automatic work. It puts forward its requirements, the operating conditions of the characteristics.

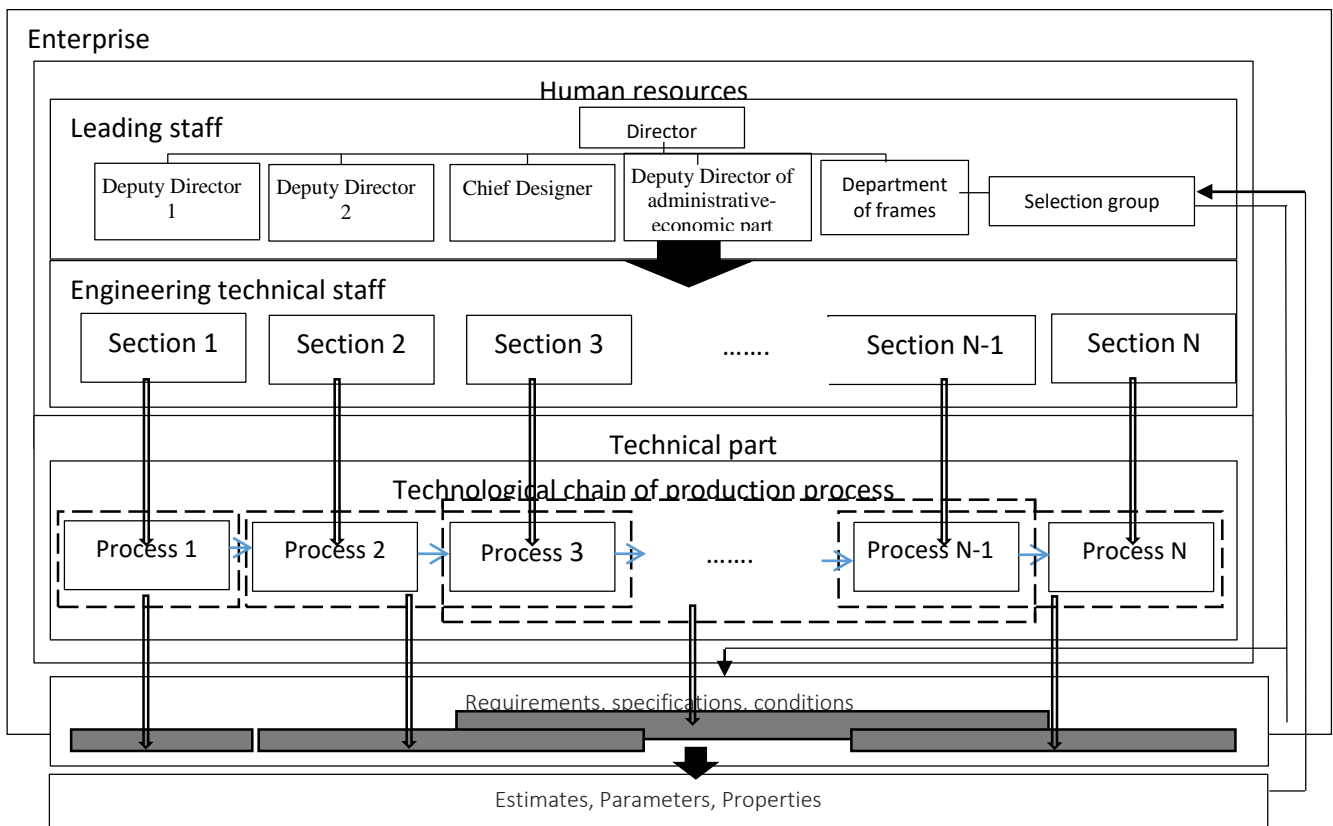


Fig.1. A typical structural scheme of production

In work [5], author N. Chulkov noted that the work can be divided into three types: mental labor, physical labor and mixed labor. This builds on the understanding of which selection criteria should be applied to certain types of work. In the production process you can also use this classification. In the future this will allow applicants to be evaluated and trained (if necessary) in accordance with their "own" "unique" properties.

As noted in his work [1] Denisov VG, human activity can be estimated in accordance with various methods that determine the properties of the applicant. Conditionally it is possible to divide these methods into psychological, physical, mathematical, informational. It is supposed that at the initial stage it is necessary to use psychological methods to identify the most suitable candidate for a given place of work in the enterprise, since it is psychological methods that are more effective to obtain the desired result [1].

Depending on the kind of activity and conditions certain requirements are put forward for the candidate for a certain position. In addition, it should be noted that the applicant is influenced by the requirements and characteristics, as well as the ability to work in certain conditions. Taking into account the previous abilities and characteristics of the applicant, the selection group (Human Resource or HR-group) makes a decision on the assessment in accordance with its psychological properties

The mathematical and informational method is more intelligent and used for the scientific team and therefore in this article are not considered as they are more intelligent methods.

Sources of literature [3, 4] showed that psychological methods are divided into types: observation (observation, self-observation, psychological portrait), and survey methods (conversation, surveys, questionnaires), psychodiagnostics, and many others. In this case, at the initial stage, the employer or recruitment manager (selection group) must use the observation method. This gives the initial testing stage to reveal certain qualities in the observed. This can be done with the help

of both technical means of surveillance, as well as during an interview or conversation. The purpose in the first case, is the definition of features when observing a person.

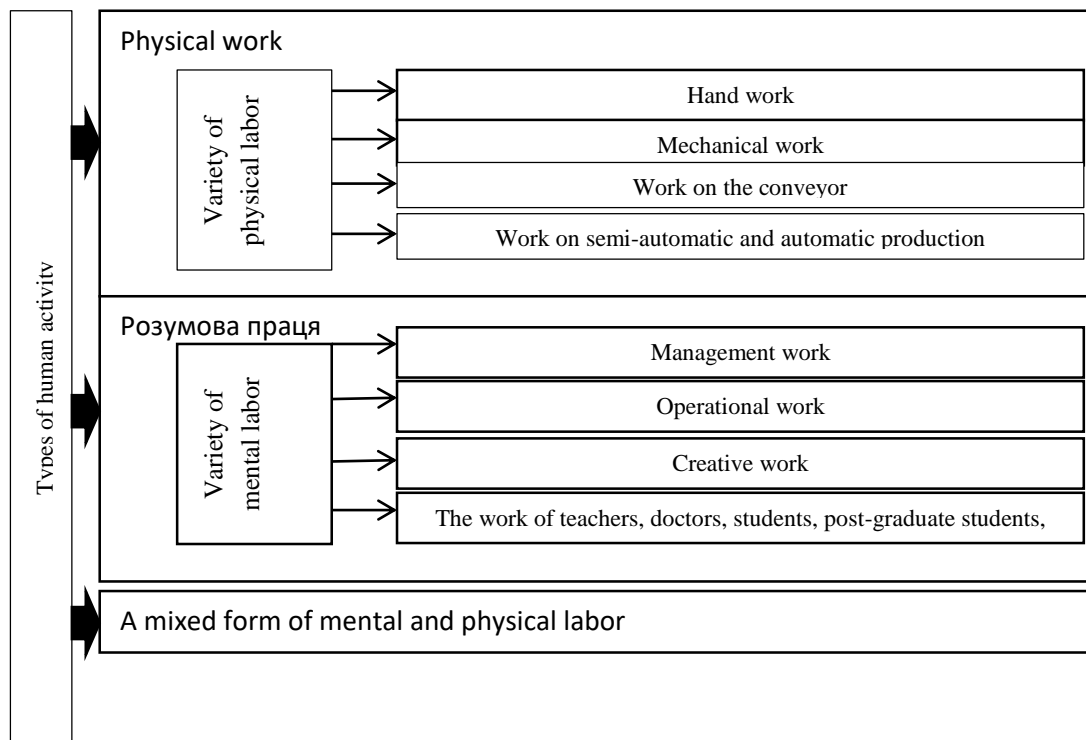


Fig.2. Types of human activity

These features include [3, 4, 5]:

- pantomime (peculiarities of walking, posture, gesticulation, stiffness);
- linguistic behavior (silence or talkativeness, verbal or laconicism, stylistic peculiarities, meaningfulness, speech culture, tempo of speech, pauses in speech);
- behavior in relation to other people;
- presence of contradictions in behavior;
- behavioral manifestation of the attitude towards himself (appearance, his own things, his disadvantage, as well as his abilities) and others.

In this case, in some cases examples of individual verbal stamps characterize interests, personal experience and outlook.

The next stage after psychological methods based on the study of the applicant must use survey methods [2]. Such methods are used in cases where factors that are poorly sold to external control must be taken into account. To find some factors, you need to use information obtained during professional selection. In order to use the poll method it is necessary to betray the correct formulation of questions. In this case, certain requirements are put forward for questions such as [2, 4]:

- the issue should be logical, concise and completed; малопоширених слів;
- to avoid too long questions;
- all issues should be specified (without double significance);
- the possible answers should be indicated (do not give any answer);
- it is necessary to offer the applicant suitable responses;
- should not include negative words;
- avoid the questioning words that have;
- do not use the words in the questions to answer.

At the same time it is necessary to consider that the questions must correspond to a particular profession and cannot be used for another specialty. Depending on the tasks set for the applicant, it should be noted that for some of his work it is also necessary to conduct psychological tests or so-called tests of the person [2, 4]. In addition to general and special polls, the applicant must assess the level of intelligence and personal characteristics.

Intelligence tests (from lat. intellectus - understanding, cognition) are intended for measurement of general abilities [3]. Under intelligence as an object of measurement, we mean not all manifestations of individuality, but above all those relating to cognitive properties and peculiarities of work [3]. In accordance with this, the tests of intelligence are directed primarily to a general assessment of cognitive abilities of a person. These tests, on the one hand, should be distinguished from tests that measure non-intellectual qualities of people (muscular strength, acuity, vision, reaction time, etc.), and from individual tests.

Facial tests are a group of techniques aimed at measuring non-intellectual manifestations of a person, determined by emotional, motivational and interpersonal properties of a person [3].

For some jobs, you need employees who have not only a high level of intellectual abilities, but also high physiological parameters. Thus, in some cases, the main parameters for study are the physiological properties such as [2]:

- body temperature;
- pulse rate;
- frequency of breathing;
- blood pressure;
- and others (depending on the planned performance of works).

For further assessment of abilities and determination of how many applicants can perform the tasks at some enterprises use the trial period [1, 4]. This allows it to be approved at the selection of a candidate who has the opportunity to perform his duties better than others.

Final decision making on materials preparation is carried out in HR-group. In some cases, the required dialogue is made up of standard questions, which can show some qualities of an employee. After that the HR-manager makes a definite opinion and can ask for an interview or refuse him in the proposed vacancy. The final level of verification is a direct meeting with the director of the company. In the case of a successful interview, the employer will invite a person to the place of the employee at the company.

Taking into account all of the foregoing, one can imagine in the form of a structural scheme of recruitment (see Fig. 3).

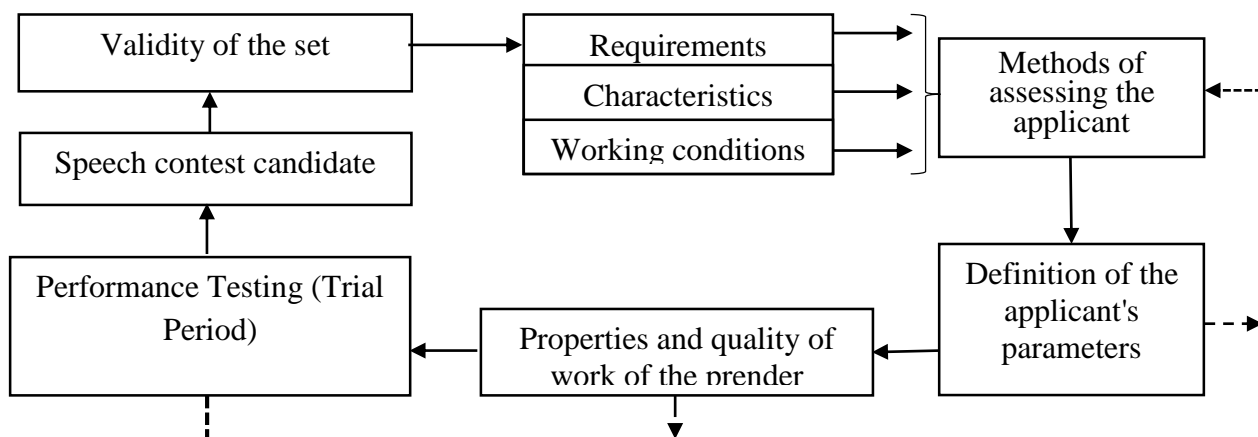


Fig .3. Structural scheme of personnel selection

At the same time, at each stage of selection for detailed (boundary) study of the applicant, it is possible to complicate the research methods. In case of non-execution (not passing) of different stage of testing the applicant does not pass further.

Conclusions

Thus, the article on the basis of literature analysis shows which particular methods should be used to obtain the best result for selection at the enterprise in accordance with its functional responsibilities. In addition, the article presents a generalized recruitment structure in which the main role is played by psychological and survey methods that best reflect the qualities of the applicant.

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Д.Д. Стрюкова

ОСОБЛИВОСТІ ВІДБОРУ ПРЕТЕНДЕНТІВ ДЛЯ СИСТЕМИ «ЛЮДИНА-МАШИНА» НА ОСНОВІ МЕТОДІВ ОЦІНКИ ПСИХОЛОГІЧНИХ ВЛАСТИВОСТЕЙ

На основі аналітичного огляду властивостей взаємодії людини і машини в єдиній системі «Людина-машина» в статті пропонуються методи для відбору співробітників для виконання різних завдань. Це дозволить підвищити якості виконуваних робіт на підприємствах висококваліфікованими фахівцями з урахуванням їх індивідуальних властивостей.

Ключові слова: система «людина-машина», претенденти, методи оцінки, підбір кандидата, вибір критеріїв.

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ОСОБЕННОСТИ ВЫБОРА ПРЕТЕНДЕНТОВ ДЛЯ СИСТЕМЫ «ЧЕЛОВЕК-МАШИНА» НА ОСНОВЕ МЕТОДОВ ОЦЕНКИ ПСИХОЛОГИЧЕСКОГО СВОЙСТВА

На основе аналитического обзора свойств взаимодействия человека и машины в единой системе «Человек-машина» в статье предлагаются методы для отбора сотрудников для выполнения различных задач. Это позволит повысить качества выполняемых работ на предприятиях высококвалифицированными специалистами с учетом их индивидуальных свойств.

Ключевые слова: система «человек-машина», претенденты, методы оценки, подбор кандидата, выбор критериев.

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