

**PSYCHOLOGICAL TESTING AT SELECTION AND STUDY EVALUATION WITH USING COMPUTER PROGRAMS**

*In this article, the question of the relevance of the study of certain psychological qualities and personality characteristics through the use of psychological tests using computer programs. A comparative analysis of the application of computer tests and other valuation techniques in personnel management in our state and other countries of the world is carried out. The advantages and disadvantages of using computer programs for conducting psychological researches, the possibilities of computer programs and their availability in use are considered. The necessity and urgency of the issue of introduction of automated systems is also considered in all production, technological and organizational processes, which enable to reduce the workload of employees through the automation of managerial processes. The analysis of the software that is currently on the market is carried out and the advantages and disadvantages of such information systems are highlighted, which gives the opportunity to choose the most optimal software for a specific situation.*

*Key words: professional testing; psychological testing; research of psychological qualities; validity; reliability; representativeness; authenticit., computer tests; computer psychodiagnostics; estimation techniques.*

**Problem statement:** The urgency of the psychological studying of personnel in the interests of implementing personnel policy in the Armed Forces of Ukraine is conditioned by the rapid professionalization of the modern army, the complete transition to the recruitment of military servicemen by contract. Therefore, psychological study uses the psych diagnostic method in various forms becomes a means of informational support of decision-makers. The implementation of computer testing is a promising direction for improving the procedure for psychological studying and can significantly improve the mechanism of personnel decision makes in the Armed Forces of Ukraine.

The purpose of the article – to highlight the advantages and disadvantages of psychological study using computer programs (tests).

**Analysis of recent research.** To date, one of the problem areas of practice testing and other valuation techniques in personnel management is the introduction of new computer tests. But it should be noted at once that this process is proceeding very slowly in our country and abroad. Abroad, the market of tests - organized and bureaucratized, and in Ukraine - is not organized and anarchic.

At the same time, new computer tests are designed to solve the most important problem of organizational diagnostics - the problem of falsification. The fact that the vast majority of psychological tests designed to serve the task (target situation) is fundamentally different from the assessment of staff. This is a counseling task. When a client turns to a psychologist for advice

(especially for psychotherapeutic care), he is interested in giving accurate information. This practice is extremely developed in the West (in the USA psychoanalysts are 10 times more than the industrial psychologists who work in firms or in personnel consulting). To this practice and were guided by the developers of many tests, now recognized as "classical".

An analysis of recent research shows that today the computer is not used in psych diagnosis too effectively. Most often it is used as a tool for automating the collection and processing of data by the same traditional test-questionnaires. But from a transplant to a computer, the test questionnaire does not become more reliable.

Gradually, we have relatively serious and even original domestic computer testing systems. But they are, as a rule, based on the survey method. So, for example, the large cadre agency "Trisa" uses a well-known computer system of Russian production, called "Personnel Service". Despite extensive advertising, the leadership of this test method is not provided with the necessary information about the psychometric parameters of the constructed test scales (reliability, validity, stability of test standards, etc.).

Developers of computer test systems tend to focus users on their various secondary benefits: the speed of collection and processing of information, the ability to create a database, a large number of deployed text conclusions, a good interface. The question of reliability is most often left behind. However, some of the properties of computer tests greatly increase the probability of the information they receive from them. These include:

1) adaptability (traditional questionnaires do not use the main advantage of computers - the ability to change test effects on the basis of rapid analysis of responses);

2) Mediation (we are talking about new, very attractive perspectives beyond the traditional verbal tests - about various nonverbal (non-verbal) and game techniques);

3) a comprehensive analysis (to make a reliable conclusion, it is necessary to apply different methods, checking each other again);

4) the game approach;

5) problem setup;

6) information security (one of the serious shortcomings of any blank test is that its variants are easily copied, replicated, and potential testers easily pick up the keys to it, and the test stops working).

Thus, it is obvious that computer test systems have many advantages. Unfortunately, the development of genuine computer psych diagnostics is constrained by the lack of funding and the lack of competent users.

Research methods.

In today's conditions of forming a market economy and increasing, the economic efficiency of enterprises, an integrated process of personnel management, which includes such components as monitoring the needs of the organization in the personnel, hiring, selection, release, development, evaluation, certification of personnel, becomes of paramount importance. Particular attention of the firm (enterprises, organizations) is devoted to the process of recruitment, because how efficiently staffed the organization depends on its efficiency, competitiveness and profitability in the market of goods and services.

In the conditions of rapid development of scientific and technological progress, more attention should be paid to the introduction of automated systems into all production, technological and organizational processes. Automation management solves many problem issues, simplifies the functional responsibilities of employees, reduces their workload.

Nowadays, there are many software products that can partially or almost completely replace people in the management process. Such products can be complex and local. Integrated software integrates all functional elements of the enterprise and can contain databases with information and calculations for all subsystems of the enterprise. But, as a rule, complex information systems are expensive and are used only in large enterprises.

In order to choose the best software product, you should first carefully analyze the existing software on the market and get to know all the advantages and disadvantages of such information systems. Some programs are accepted not only for staff recruitment, but also for routine psychological testing, for its simplification of automation and acceleration. Having analyzed the given information, it is possible to choose the most optimum software for a concrete situation.

Software products for implementing the recruitment function [1]:

TEZAL (TEZAurus is an automated personality). Multifunctional expert system designed to automate processes for collecting and interpreting information about personality traits, integrating test data and expert evaluations. Functions of the program: linguistic provision of the psychologist's work; creation of text interpretations to factor profiles; construction of real and "perfect portraits" of professionals of different professions through expert polls.

PROFPLAN (Interactive Professional Guidance System). This system is designed to support the advisory work of the employment centers, psychologists, professional consultants, staff development specialists. Functions of the program: interactive visualization of the client's diagnostic profile of vocational counseling; providing background information by profession and specialty; training of career counselors.

Computer Testing System MYUTB8T: COMPACT (Designer of Competences). Allows you to create reports in the form of an individual competency profile based on the test results for the adoption of operational management decisions. Designated for use by HR staff of organizations that implement modern HR practices based on the use of the competency model. Functions of the program: placement of frames; competitive selection; preparation of training plans and personnel development.

Computer system R8I-MAP. A system of quantitative express diagnostics for selecting candidates for typical managerial and executive positions and for staff monitoring of employees. Functions of the program: preparation of official R8I-cards for employment in accordance with the existing profession; tuning their criteria to the requirements of a particular organization; storage and comparison of the received data; conducting psychological tests of those qualities whose assessment is within the competence of the psychologist; monitoring of the success of the

professional activities of the selected employees through the attestation procedure.

Taking into account data analysis of various systems of the automated process of recruitment, it should be noted that the most comprehensive and multifunctional software is Tezal, an expert system that allows you to choose the best candidate from the possible. This software is developed at TNTK "SAINTEX" (Russian Federation). The system is used by managers and specialists of personnel services in solving the problems of selection of personnel, analysis of interpersonal relations in a team, the management of the database on personnel. It stores information about the personal characteristics of people obtained as a result of appropriate testing. The system includes a variety of tests to determine the level of professional qualifications of workers, their psycho-physiological parameters, as well as to trace the dynamics of the change of certain characteristics, to distinguish those who have deviations from generally accepted social norms. Software TEZAL has several advantages over software products of this class, because it combines several important functions of personnel management, namely issues that are part of the scope of the tasks of the recruitment process.

Description of the main material. The scientific substantiation of the psychological study of the personnel is connected with the need to solve a number of issues related to the development, verification and practical use of specific techniques. They must be determined on the basis of the already accomplished theoretical analysis, professional study, based on the requirements put forward to the personality of the military experts concerned. This choice can be determined by the following principles: 1) the number of methods should be minimal while maintaining the probability of a prediction of success; 2) the methods should be aimed at assessing the qualities that are most important for the successful performance of official duties; 3) assessment of the development of professionally important qualities should be comprehensive and take into account a set of personal and intellectual indicators at the lowest cost of time for the survey; 4) the methods and criteria must take into account gender identity and may differ for men and women.

Another important issue is the way to implement a psychological study on the use of computer testing. The tendency to extend the implementation of test procedures by attracting relevant software and computer network has

recently been significantly updated. The software becomes an integral part of the diagnostic activity of a psychologist. The development of information technology has created conditions for the emergence of a new generation of computer diagnostic systems based on PC, accelerated the process of implementation in the practice of automated techniques, created the basis for the next automation of the process of collecting, processing and storing psycho-diagnostic information. The experience of organizing and using special software for a psychologist exists in a few publications. So, in the dissertation study IV Shama has theoretically substantiated, methodically developed and empirically tested computer psych diagnostics and technology for assessing the professional suitability and psychological potential of managerial staff [15]. The computerized complex of psychological diagnostics of professional competence of management personnel is created, which includes: the hardware-technical part (server, locally computational network), general software (operating system Windows XP, Office 2003) and specialized software developed by the author of the complex.

Computer testing today is as widespread as traditional (paper pencil). The introduction of computers in psychodiagnostics is mainly due to the creation of automated versions of individual techniques (VA Bodrov, 2001).

The translation into a computer basis of such techniques, which were previously developed for traditional use and have a well-formalized structure, does not form a particular complexity. In this case, the computer actually performs the function of the experimenter and the calculator with the only difference that it provides the automatic presentation of the surveyed test tasks, produces results in the usual form for the psycho-diagnostic and conducts the protocol of the experiment. In this way, by the way, positive effects for psych diagnosis are found: 1) fast receiving of diagnostic results, which is extremely necessary, for example, in mass surveys; 2) the expert is freed from labor-intensive routine operations, the presentation of the task, verification of the correct answers, the maintenance of the protocol of inspection, processing of results; 3) the accuracy of the registration of the results, the absence of errors in their processing; 4) the efficiency of data processing, which allows to conduct mass psych diagnostic surveys in a short time by testing many of the subjects. As a result of

these effects, the computerization of psych diagnostic techniques has a positive effect on improving the quality and reducing the cost of psycho-diagnostic examination. The use of computer technology contributes to raising the level of standardization of the conditions of psycho-diagnostic examination due to the same inquiring surveyed and the presentation of tasks that do not depend on individual qualities and the state of both the experimenter and the subject. The confidentiality of automated testing allows the examinee to be franker and sincerer during the experiment.

The positive aspects of the computer survey have their own reverse side, which needs to be taken into account. Changing the conditions of the psycho-diagnostic examination, even for the better part from the standpoint of standardization, requires a mandatory check of the computer version of the methodology for its adequacy to the traditional "manual" analog. Problems of interaction of the surveyed with the automated system, considered within the scope of the problem of human-machine interaction, are still far from rational solution.

When communicating with the computer in the subject, there may be, for example, the effects of "psychological barrier" and "top trust". Therefore, automated variants of psych diagnostic techniques, at least, should be subject to re-standardization.

The use of computer testing has a number of significant benefits. Computer network testing technologies have allowed to overcome a number of shortcomings of blank technologies. The main advantages of computerized testing using the Internet are the following: the possibility of testing a long-distance respondent; rapid analysis of the results of a large number of subjects, carried out automated, freeing specialists from mechanical

work; application of adaptive testing technology, the essence of which is to present the next task (question) taking into account the answer to the previous one; accumulation of a significant base of results for the purpose of their further processing in the interests of improving the tools; optimization of the procedure for presenting test questions and answer variants in order to prevent the use of tips (keys), etc.; more rational use of testing time due to the possibility of presenting certain structural units or tasks.

Conclusions and perspectives of further research. An analysis of modern scientific sources and trends have made it possible to establish that uses of computer psych diagnostic testing are a promising direction for improving the psychological study of personnel. Scientific substantiation and significant practical achievements in this area are beyond doubt. That is why the further provision of effective implementation of personnel policy in the Armed Forces of Ukraine, through research of various professional groups, the search for new approaches to ensuring the reliability and effectiveness of psychological study, is an extremely relevant and perspective task for further scientific research.

It is established that the implementation of computer testing is a promising direction for improving the procedure of psychological study and can significantly improve the mechanism of personnel decision making in the Armed Forces of Ukraine.

The effectiveness of any process depends on how developed and realized labor potential of a person.

Thus, increasing the efficiency of recruitment of enterprises is not only a means and condition for the development of social production, but also of priority objective of qualitative improvement of the modern Ukrainian economy.

### References

1. Technologies of personnel recruitment on the basis of modern software products, 2012. 162 p.
2. Savelieva V. S. Personnel Management: Textbook. Kramatorsk, DDMA, 2004. 384 p.
3. Ivanova S. V. The art of personnel selection. How to rate a person per hour: Alpina Business Busks, 2004. 160 p.
4. Kybanov A. Y. Personnel management of the organization: a textbook. 2nd edition, 2002. 638 p.
5. Kozachuk N. V. System approach to personnel selection. Personnel Management: Ukraine, 2008. No. 4. P. 23-28 p.
6. Korotkova E. M. Construction of the system of search and selection of personnel. Management and Manager, 2005. Number 2. S. 54-58 p.
7. Krushel'ts'ka O. V. Management of personnel: a manual. Edition 2nd, 2005. 308 p.
8. Mikhalyak T.M. Efficiency of using different methods in personnel selection. Personnel Manager, 2010. No. 11. P. 48-64 p.
9. Sklyar M. A. Selection of a HR-employee. Addition to the test. Personnel Manager, 2011. No. 9. P. 82-85 p.
10. Khmil F. I. Personnel Management: a textbook for higher educational institutions. Academic Publishing House, 2006. 488 p.

## Питання психології

11. Information on the computer system of testing MAINTEST. URL: <http://www.ht.ru/cms/bank>.
12. Information about the professional-orientation expert system PROFPLAN. URL: <http://www.ht.ru/cms/component/content/article>.
13. Information about the expert system TEZAL. URL: <http://www.ht.ru/cms/component/content/article>.
14. Information about the PSI-CARD system. URL: <http://www.cogitocentre.com/page.php?al=14807>.
15. Bodalev A.A., Stolin V.V. General Psychodiagnostics, 2006. 440 p.
16. Shama IV Psychological diagnostics of professional suitability of managerial personnel by means of computer technologies, 2006. 440 p.
17. Article: Problems of the development of psychological research using computer technologies. URL: [https://stud.com.ua/.../osoblivosti\\_kompyuternoyi\\_diagnosti](https://stud.com.ua/.../osoblivosti_kompyuternoyi_diagnosti).
18. Gordeyeva A. Y. Psychological peculiarities of the process of personification in the "Man-computer" dialogue: Author's abstract. dis Cand. psychologist Sciences, 2003. 20 p.

### Резюме

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#### **ПСИХОЛОГІЧНЕ ТЕСТУВАННЯ ПРИ ВІДБОРІ ТА ОЦІНЦІ ПЕРСОНАЛУ З ВИКОРИСТАННЯМ КОМП'ЮТЕРНИХ ПРОГРАМ**

*В даній статті розкрито питання актуальності дослідження певних психологічних якостей і властивостей особистості шляхом використання психологічних тестів з використанням комп'ютерних програм. Проведено порівняльний аналіз застосування комп'ютерних тестів та інших оціночних методик в управлінні персоналом в нашій державі та інших країнах світу. Розглянуто переваги та недоліки використання комп'ютерних програм для проведення психологічних досліджень, можливості комп'ютерних програм та їх доступність у використанні. Також розглянуто необхідність та актуальність питання щодо впровадження автоматизованих систем в усі виробничі, технологічні та організаційні процеси, які дають можливість зменшити робоче навантаження на працівників завдяки автоматизації управлінських процесів.*

*Ключові слова: професійне тестування; психологічне тестування; дослідження психологічних якостей; валідність; надійність; репрезентативність; достовірність; комп'ютерні тести; комп'ютерна психодіагностика; оціночні методики.*

### Резюме

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#### **ПСИХОЛОГИЧЕСКОЕ ТЕСТИРОВАНИЕ ВО ВРЕМЯ ОТБОРА И ОЦЕНКЕ ПЕРСОНАЛА С ИСПОЛЬЗОВАНИЕМ КОМПЬЮТЕРНЫХ ПРОГРАММ**

*В данной статье раскрыты вопросы актуальности исследования определенных психологических качеств и свойств личности путем использования психологических тестов с использованием компьютерных программ. Проведен сравнительный анализ применения компьютерных тестов и других оценочных методик в управлении персоналом в нашей стране и других странах мира. Рассмотрены преимущества и недостатки использования компьютерных программ для проведения психологических исследований, возможности компьютерных программ и их доступность в использовании. Также рассмотрена необходимость и актуальность вопроса по внедрению автоматизированных систем во все производственные, технологические и организационные процессы, которые дают возможность уменьшить рабочую нагрузку на работников благодаря автоматизации управленческих процессов.*

*Ключевые слова: профессиональное тестирование; психологическое тестирование; исследование психологических качеств; валидность; надежность; репрезентативность; достоверность; компьютерные тесты; компьютерная психодиагностика; оценочные методики.*