Professional Identification of a Specialist According to the Factor of His Psychological Type of Personality

Anna Morozova^{1,*}

¹Bryansk State Technical University, 241035 Bryansk, Russia

Abstract. One of the factors determining the psychological comfort of the social and professional interaction of a specialist is his personality type. Modern psychology of personality considers sixteen basic types to identify a person. An individual personality type of a specialist largely either contributes to or hinders the achievement of the optimal level of his competitiveness in the professional environment. The method developed by the author, “The choice of the priority type of professional activity of a specialist on the factor of the psychological type of his personality” allows us to draw conclusions for each specialist: on the priority influence of the components of the psychological type of his personality on the formation of individual social and professional competitiveness; on the choice of this type of professional activity that would allow optimal use of the capabilities of the psychological type of his personality to increase competitiveness in the professional environment. Practical use of the technique is considered on the example of young specialists of machine-building profile who graduated from a professional college.

1 Introduction

The “correctness” of a professional choice, psychological “comfort” of social interaction of a specialist in a professional environment of a certain profile depends on many factors [5, 7, 9, 24]. One of these factors is the type of personality of a specialist who is individual and subsequently (during the implementation of his professional activity) either greatly contributes to or hinders the achievement of the optimal level of his social and professional competitiveness [12, 16, 19, 20].

In this regard, it is natural to assume that it is precisely the type of a personality that largely determines the individual curve of the “life cycle of a specialist” and his professional career [25]. Therefore, the issue of finding ways to optimize the choice of the type of professional activity of a specialist with a specific training profile, depending on the type of his personality, is highly relevant [3, 6, 13]. This problem is also particularly relevant for young professionals [14, 15, 17].

*Corresponding author: niotlostu@gmail.com

2 Methods

American psychologists Paul D. Tiger and Barbara Barron-Tiger developed a method of introspection according to which anyone can determine his own psychological personality type [29]. In accordance with this method, any person, based on the identification of his behavior with the proposed models presented by the authors for self-analysis, can determine which type of behavior he is more inclined to, i.e. what type of personality corresponds to him. Psychologists distinguish four dimensions of the human personality, located among eight preferences: (E) Extraversion (Extroverted) - (I) Introversion (Introverted) [1, 4, 22, 27]; (S) Sensing (Sensing) - (N) Intuitive [21]; (T) Logic (Thinking) - (F) Ethics (Feeling) [2, 8, 10, 11]; (J) Rationality (Judging) - (P) Irrationality (Perceiving) [23, 30] - each of them is conventionally denoted by a Latin letter. These letters in various combinations make up the names (codes) of sixteen personality types. Each person falls under one of the sixteen categories presented in Table 1, in accordance with their psychological personality type.

Table 1. Codes of psychological personality types of individuals.

ISTJ	ISFJ	INFJ	INTJ
ISTP	ISFP	INFP	INTP
ESTP	ESFP	ENFP	ENTP
ESTJ	ESFJ	ENFJ	ENTJ

Taking into account the needs of modern engineering production in young professionals having a high level of social and professional competitiveness, in the framework of the project “Maintenance of personal, professional and career growth of students and university graduates in the interests of the regional economy development: development of a qualimetric system of university graduates in accordance with the requirements of industry professional standards ”on the basis of the Bryansk State Technical University a method aimed at optimizing the choice of the type of professional activity (on the example of a young specialist in machine-building production) was developed, taking into account the specificity of the psychological type of his personality. It is based on the application of the hierarchy analysis method and the Expert Decide software decision support system [18].

In accordance with the developed method, the structural components of the psychological type of a specialist's personality are organized into four formalized resource blocks of components that influence the level of social and professional competitiveness of young specialists. The hierarchy analysis method (HAM), which is the basis of the developed method, is a technique for solving multi-objective optimization problems under uncertainty conditions, when optimization criteria cannot be measured in a quantitative form. In this method, experts are invited to solve individual problems of pairwise comparison of criteria and alternatives. The results of the HAM implementation are: the establishment of a hierarchy of goals, factors, criteria, actors (actors), alternatives and scenarios for the problem under discussion and the identification of priorities of elements at each level of the hierarchy.

When solving a complex task related to the prediction of possible results (for example, choosing the type of future professional activity of a young specialist-technologist of machine-building production), one has to deal with many controlled and uncontrolled components, which makes it necessary to combine them into groups according to the distribution of certain properties among elements, that is, to build a hierarchy. The central question in the language of the hierarchy is the following: how much individual factors of the lowest level influence the top of the hierarchy. Irregularity of influence on all factors leads to the need to determine the intensity of influence (the priorities of factors).

Prioritization of low-level factors relative to the goal (focus) is reduced to a sequence of pairwise comparisons. These comparisons are made in the hierarchy of matrices (tables) created by pairwise comparisons, which allow to calculate the vectors of priorities of factors [26]. When calculating the priority vectors, the coefficients of expert judgment's consistency are also calculated (HCR - hierarchy consistency ratio) [28].

The hierarchy developed for this purpose contains three levels. The study was conducted according to the method of simulation. The object of the study was selected young professionals with secondary professional education in the specialty "Mechanical Engineering" at the end of a professional college.

The first level - the goal (focus) - expert predictive assessment of the social-professional competitiveness of a machine-building specialist (SPCC MB).

The second level is the structural components of the specialist's personality type ((E) Extraversion (Extraverted) - (I) Introversion (Intraverted); (S) Sensory (Sensing) - (N) Intuition (Intuitive); (T) Logic (Thinking) - (F) Ethics (Feeling); (J) Rationality (Judging) - (P) Irrationality (Perceiving)).

The third level is the type (position) of the professional activity of the young specialist of the middle link:

- A. worker of a machine-building enterprise;
- B. engineering technicians of a mid-level in the workshops of a machine-building enterprise;
- C. engineering technicians in the design and technology departments of a machine-building enterprise;
- D. engineering technicians of technical services of a machine-building enterprise;
- E. obtaining higher education in an already chosen specialty;
- F. work not in the specialty (obtaining professional education of a different profile or another working profession);
- G. obtaining higher (university) education in a specialty of a different profile.

3 Results

The obtained quantitative characteristic of the structural priority of the components of the psychological type of a personality in relation to a certain chosen sphere of professional activity is expressed in the form of a multidimensional vector of the resource potential. The resulting vector of priority makes it possible to identify those components of the psychological type of personality that can have a priority impact on increasing the individual competitiveness of a specialist if he is engaged in a certain type of professional activity. As an example, we will consider expert-analytical models (Figure 1-6) and conclusions obtained for the categories of young engineering technologists with ENTJ (extrovert, intuit, logician, rational).

Fig. 1. The hierarchy of the vector of priorities of the influence of the components of the personality type of the specialist-technologist of the machine-building profile (ENTJ) on his individual social and professional competitiveness.

Fig. 2. The hierarchy of the vector of priorities of the choice of the type of professional activity in the social-professional group of specialists in machine-building.

When applying for a job in a technical specialty obtained at a professional college, a young specialist with an ENTJ personality structure (extrovert - intuit - logician - rational) may gain additional competitive advantages if he relies mainly on logical (weight - 0.348) and rationalistic (weight - 0.529) components of his personality. At the same time, the priority types of his labor activity, which will enable him to most clearly demonstrate his competitive advantages in the social and professional group of technologists, will be C - working in engineering and technical positions in the design and technology departments of a machine-building enterprise (weight - 0.216) and, in addition, E - obtaining a higher education in an already chosen specialty (weight - 0.348).

Fig. 3. Histograms of the influence of the E-component of the type of personality of a specialist in mechanical engineering (ENTJ) on his individual social- professional competitiveness.

Fig. 4. Histograms of the influence of the N-component of the type of personality of a specialist in mechanical engineering (ENTJ) on his individual social- professional competitiveness.

Fig. 5. Histograms of the influence of the T-component of the personality type of a specialist-technologist of the machine-building profile (ENTJ) on his individual social- professional competitiveness

Fig. 6. Histograms of the influence of the J-component of the type of personality of a specialist in machine –building profile (ENTJ) on his individual social and professional competitiveness.

4 Conclusions

The developed methodology “The choice of the priority type of professional activity according to the factor of the psychological type of the personality of a specialist” allows us to formulate recommendations for each young specialist participating in the examination:

- on the priority influence of the components of the psychological type of his personality on the formation of individual social and professional competitiveness;
- on choosing a type of professional activity that would allow optimal use of the abilities of the psychological type of his personality to increase competitiveness in the professional environment.

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