

## INFORMATION TECHNOLOGY FOR ANALYSIS OF STUDENT'S MOTIVATION

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**Abstract.** The article shows the importance of educational activities and its prediction for the first-year students. Some computational methods of analysis and recognition of states were considered. The method of non-uniform sequential procedure of recognition of states was considered in detail as well. The developed software was applied to solve specific problems of the area of psychological research and diagnostics. Some universal algorithms were used in the most informative signs of physical nature and calculated with help of mathematics. The results of psychological tests can be performed as starting material for processing, medical data as well and data from other areas of research. It is possible to obtain a diagnostic assessment of projected state with the accumulation of a sufficient amount of information required for a certain type.

**Keywords:** educational activities, students adaptation, motivation, ratio, quality improvement, informational content.

Teaching in higher education is a high level of autonomy and consciousness of students. The first and essential step in learning activities of students is their timely adaptation to training conditions in high school, regarded as the introduction of them in the professional community. The success often depends on the further professional life development.

The authors of the article shows one approach to solving the problem of motivation analysis indicators (defined by the method of "Motivational profile of the person") students for educational activities. Original data were only a value of indicators of motivational sphere for first-year students: good successful students (Group A1); bad successful students (A2 group). The training set includes indicators of motivational sphere of 100 students of the Institute of Cybernetics of TPU. According to the analysis of motivational indicators it will be decided about the success of adaptation of students to educational activity.

Informative statement of the problem. Determining the motivational profile of the students - test, test and designed specifically to identify the motivation factors that are highly appreciated by the student, as well as those factors which he attaches little importance as potential sources of job satisfaction. It allows you to identify the needs and aspirations of the student, and thus to get some idea of its motivational factors. The basis of the test laid comparison significance of importance motivational factors a number from the point of view of the university management.

Scales motivational profile: M - maintaining life support; C - comfort; C - social status; COM - communication; D - total activity; DR - creative activity; OD - public utility [1].

On the basis of computer-based testing matrix of responses generated automatically results. The program also provides for the possibility of forming the matrix responses on the results of blank test. The total diagnostic evaluation are actually seven motivational scales constituting motivational personality profile, and two scales of emotional behavior, emotional components of the profile (CP). Turning emotional profile in the overall profile of the individual motivational dictated in scientific terms of internal motivation and common emotions, and practical - a significant diagnostic information [2].

Determination of informativeness feature set. Informative signs depends entirely on how it helps us to differentiate the state of interest - if the same sign often appears in comparable

conditions, it is certainly not enough to help the diagnosis and prediction. The characteristic is more informative the greater distance between stochastic values. By way of this distance Kulback's information measure is most popular. [3].

To measure the amount of information N. Wiener and C. Shannon independently of each other in 1948 proposed a logarithmic measure, be recognized as quantitative information measures. The class of such measures include the introduction of Jeffreus in 1964 and studied in detail as a measure of Kulback information measure  $J(1,2)$  discrepancies between statistical distributions 1 and 2. For discrete distributions, this formula is as follows [3]:

$$J(x_i / A_1, x_i / A_2) = \sum_j \lg \frac{P(x_{ij} / A_1)}{P(x_{ij} / A_2)} [P(x_{ij} / A_1) - P(x_{ij} / A_2)]$$

где

$A_1, A_2$  – states classes;  $i$  – number sign;  $j$  – range number of  $i$ -th feature;  $P(x_{ij} / A_k)$  – the probability of hitting an object belonging to a class of  $A_k$  in the  $j$  range of indication  $i$ .

This criterion makes it possible to draw conclusions about the differences empirical images without special restrictions on the distribution of random variables forming an empirical way.

**Software implementation.** The general scheme of the developed system is shown in picture 2 [5]. The Termwork module estimated value of the difference of samples of each motivational trait Kullback's formula, and calculates the coefficients of diagnostic and diagnostic table is prepared The module Diagnose forecasting performance of the student is based on the constructed decision rule.

**Conclusion.** The most informative signs have been identified by our research. Consequently, the resulting decision rule can be used to predict student performance on motivational indicators, removed as a result of testing.

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