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DYNAMICS OF STUDENTS' PERSONAL CHARACTERISTICS DURING UNSTABLE AND STABLE PERIODS OF ADAPTATION TO HIGHER EDUCATION

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Abstract

This article analyzes the dynamics of students' personal characteristics during unstable and stable periods of adaptation to higher education. The study examines changes in personal attributes—such as adaptive behavior, stress tolerance, motivation, social adjustment, and psychological stability—throughout the adaptation process. It describes how personal characteristics undergo dynamic shifts during the unstable period (the initial stage of adjustment to the new learning environment) and the stable period (the stage in which the student becomes integrated into the academic process), and it offers recommendations for improving adaptation and reducing stress. The findings have practical relevance for pedagogical and psychological support services in higher education institutions.

Keywords: student, personal characteristics, personal dynamics, adaptation to higher education, unstable period, stable period, adaptive behavior, stress tolerance, motivation, psychological stability.

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Introduction

Acknowledging the complexity and multidimensional nature of adaptation processes, it is possible, when analyzing the organism's adaptive responses to professional activity, to identify several stable structural components regardless of the general characteristics of environmental factors and the specific influences involved:

Activation components reflect the ability to maintain an optimal level of cerebral cortex tone and ensure the energetic support of goal-directed activity. The most informative indicators for these components include circulation, respiration, metabolism, the excretory system, and certain parameters of the blood system.

Sensory components characterize the features of perceptual activity—namely, the processes of receiving and initially processing information perceived by the organism. These processes encompass the entire sequence of information processing from the stimulus acting on receptor fields to the transmission of impulses to cortical centers. The subjective correlates of these processes include sensation and perception, as well as their derivatives—frequency, intensity (strength, brightness), and spatiotemporal characteristics.

Operational components determine subsequent stages of information analysis and are replaced by the decision-making stage, which defines the direction of forthcoming activity. This group includes indicators reflecting mnemonic functions and the capacity for analytical thinking.

Effector components ensure the integration of somatic and autonomic elements and enable the implementation of a prescribed activity under changing environmental conditions.

During the educational process in a higher education institution, students' adaptive responses (psychophysiological, psychological, and autonomic) are likewise based on the stable components described above and serve to maintain an optimal functional state and level of work capacity. In various forms of adaptation to professional activity, one criterion for assessing human work

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capacity may be the nature of the response to an additional disturbing factor (N. A. Agadzhanyan & I. N. Polunin, 1998). In this case, during adaptation the organism restructures its functional systems and compensates for the need for additional resources at the expense of those systems directly affected by the disturbing factor.

5.1. Adaptive responses of students' organisms to modeled loads

During adaptation to the conditions of study in higher education institutions, students' neuropsychic sphere is subject to continuous, though variable in intensity, influence from socio-informational factors and academic workload. Among the main factors that complicate adaptation and hinder the selection of an optimal strategy are, first, the psychophysiological consequences associated with changes in pace and rhythm of life, insufficient opportunities for recreation, and possible effects of desynchronosis. Separation from family and the familiar social environment, as well as adaptation to a new water supply and dietary pattern, are also important (S. V. Klauchek et al., 1997; N. I. Latyshevskaya, 1999).

Psychophysiological reactions in humans are traditionally studied using modeled loads. These loads subsequently enable, via extrapolation, the prediction of adaptive orientation under real activity conditions.

At this stage of the research, modeled loads were applied in order to investigate factors that reduce students' capacity to adapt to higher education conditions. These loads were based on situational conflict states of emotional–motivational, sensory–operational, and activation–effector nature.

The first load test—the "Examination Model"—was represented by a testing situation involving deliberately complicated tasks. While students were formulating answers to the test items, the researcher provided feedback implying an underestimated evaluation of the correctness of their responses. This ensured the emergence of a discrepancy between expected and actual evaluation outcomes. Two additional loads—"Mirror Coordinometry" and the "Knee-Fall Test"—were also used. In these situations, participants performed tasks requiring

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maintenance of fine visuomotor coordination under conditions of inversion of a previously formed behavioral stereotype, and they were also exposed to negative emotions associated with a passive-defensive reflex.

Before and after exposure to modeled loads, the following indicators were assessed: adaptive capacity of the cardiovascular system—systolic (SBP) and diastolic (DBP) arterial pressure, heart rate (HR); characteristics of autonomic responses—using the "cardiointervalography" method, the mode (Mo), mode amplitude (AMo), variation range (DX), and the stress index of regulatory systems (IN) were calculated; functional state of the central nervous system—based on electroencephalography data; psychophysiological parameters—critical flicker fusion frequency (CFFF), accuracy of perception of process duration (PD), reaction time (IPDR), and response to a moving object (RMO); as well as sensorimotor functions (tapping test) and the ability to reproduce spatial magnitudes (TG). In addition, subjective state was evaluated using the SAN technique, the Ch. D. Spielberger questionnaire, and the Lüscher color test.

Assessing changes in the studied indicators in response to load

To evaluate changes in the parameters under load, a quantitative measure—the shift coefficient—was used. It was calculated using the following formula:

KS=ln⁡(PnPf),KS = \ln \left(\frac{P_n}{P_f}\right),KS=ln(PfPn),

where:

KS — shift coefficient under load;

$\mathbf{P_n}$ — parameter value obtained under load;

P_f — baseline (initial) parameter value.

Students' adaptive responses to the modeled exposure ("Examination Model") under satisfactory, potential, and unsatisfactory adaptation states

The ability of an individual to perform activities with the same efficiency under conditions of increased emotional strain (for example, during examinations in the session period) as under everyday conditions is often associated with professional stability. It is hypothesized that in unstable individuals, emotional dysregulation

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leads to impaired performance. However, the concept of "professional stability" itself still lacks a clear operational definition. This ambiguity, together with the absence of methods capable of identifying the set of physiological responses that ensure professional stability under various external influences, necessitates the search for new criteria for assessing an individual's adaptive reserves.

Conclusion

During adaptation to higher education, students' personal characteristics change dynamically. In the unstable period, stress and adaptive difficulties intensify, and levels of motivation and psychological stability may be lower. As students transition to the stable period, personal characteristics become more optimized: stress tolerance increases, motivation strengthens, and social adjustment improves. Therefore, pedagogical and psychological approaches—along with training programs and counseling that support the adaptation process—are essential for stabilizing students' personal characteristics.

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