2.4. Features of the use of HC-psychotest in the process of diagnosing personality's emotional stability

2.4. Особливості використання НС-психотесту в процесі діагностики емоційної стійкості особистості

One of the important psychological factors of efficiency and reliability of activity in tense circumstances is emotional stability, which reduces negative impact of strong emotions, promotes readiness for action, and prevents extreme stress. The research of the nature of emotional stability, ways and means of its development and preservation is a relevant issue for modern science. The concept of "emotional stability" includes various emotional phenomena. Some scholars view emotional stability as "emotional resilience" rather than a person's resilience to emotional influences. Thus "emotional resilience" is viewed through various concepts: stability of emotional states, lack of tendency for frequent change of emotions, emotional stability, etc. So, one concept combines different phenomena that do not correspond to the concept of "emotional stability". It leads to a large number of definitions of this phenomenon, which differ significantly from each other.

One of the current objectives of our time is to reveal the potential of the emotional sphere in process of human activity management. One of the main trends is a study of the content of people's practical activity and, in particular, the ambiguity of the impact of emotions on the appropriateness of behavior and productivity. In recent years the most active research of the issue of emotional stability and its formation is being done in the psychology of sport, in the study of patterns of psychological stress, in identifying the criteria of professional efficiency. Taking into account the urgency of the issue of formation and development of emotional stability, educational activity of students has been chosen as the subject of the study. It is known that this age is characterized by the presence of a significant number of stressors, caused by educational activities: increasing intensity of information flow, increasing number of activities, actualization of the need for professional self-identification, constantly increasing personal responsibility for success in educational activity, significantly increasing intellectual workload. Emotional stability is a unity of different emotional characteristics, which are aimed at the goal achievement. Many scientists consider effectiveness of activity in a non-specific situation for a person to be the main criterion of emotional stability [1]. J. Reykovsky defines emotional stability as the ability of an emotionally excited person to maintain a certain orientation of their actions, adequate functioning and control over the display of emotions. N. A. Aminiv attributes high emotional stability to those who "better than others manage to control their personal emotional reactions" [2]. K. K. Platonov identifies the following components of emotional stability: emotional-volitional (the degree of person's volitional control over his or her emotions), emotional-motor (stability of psychomotor skills), emotional-sensory (stability of sensory impressions).

Another approach to definition of emotional stability is implemented by P. B. Zilberman, who defines it as "an integrative feature of personality, characterized by such interaction of emotional, volitional, intellectual and motivational components of person's mental activity, which ensures optimal success of the goal achievement in a complex emotional situation" [1]. Emotional stability is defined as: a) integrative *feature* of the personality; b) mental *state* (long-term or operational), which contributes (both in the first and in the second cases) to the optimization (ensuring efficiency) of activity and preservation of person's mental and physical health. Emotional stability is changed under the influence of person's adaptation to extreme conditions, but the success of adaptation depends on a number of stable personal characteristics, including the characteristics of emotionality in the structure of personality, motivational and volitional characteristics, style of cognitive activity associated with emotionality [2].

We have analyzed existing approaches to the research of the issue of emotional stability, and consequently we support the opinion of M. Dyachenko and V. Ponomarenko that emotional stability as a quality of personality represents the unity of the following components: a) motivational (strength of motives largely determines emotional stability. By changing motivation, we can increase (or reduce) emotional stability); b) personality's emotional experience, which is gained in the process of overcoming negative effects of extreme situations; c) volitional, which is expressed in the conscious self-regulation of actions, bringing them into line with the requirements of the situation; d) intellectual (evaluation and identification of the requirements of the situation, anticipation of its possible changes, decision-making on ways of activity) [3].

Taking into account the current informational progressive changes in higher education, the issue of modern ICT use in the process of psychodiagnostics of future specialist's level of emotional stability is becoming a quite relevant one. The Concept of Modernization of Higher Education sets an important task – development of modern person's ICT skills. Due to the change in the dominant idea of professional activity, it is necessary to train future professionals for various kinds of activity, related to information processing and development of ICT skills. The implementation of modern information technologies into educational environment should be gradual: from the implementation of some elements of ICT into learning process to the use of electronic textbooks. We have identified the following areas of introduction of computer technologies into educational process: use of computer technologies as a means of learning; use of computer technologies as a tool for learning, self-knowledge and understanding reality; consideration of the computer and other information technologies as an objective of learning; use of new information technologies as a means of creative development of personality; use of computer equipment as a means of automating the processes of assessment, correction, testing and psychodiagnostics; organization of communication with the use of information technologies in order to transfer and acquire pedagogical experience, methodological and educational literature; use of modern information technologies for the organization of intellectual

leisure time; intensification and improvement of the management of educational institution and educational process.

The use of opportunities of modern computers in psychodiagnostics to compactly store, quickly extract and visually display information has certain ***positive benefits*** (according to Duke):

In addition to the above mentioned advantages of using computers, according to Duke, qualitatively new opportunities for computer psychodiagnostic examination are opened for a psychologist.

1. Dynamic and polymodal stimulation. By means of computer graphics it is possible to represent dynamic objects on modern computer screen; it brings model activity on test performance to the real activity, because the test itself is used to anticipate this real activity. One more benefit of polymodal stimulation is a combination of its visual and auditory forms.

2. Variable order of presentation of test stimuli. The simplest option of the implementation of this feature is a random order of the stimulus sequence organization. Adaptive testing is also built on this principle, when a sequence of offered tasks depends on the responses to previous stimuli. As a result, in the process of multi-stage testing a client under examination may be given far fewer tasks while the diagnostic ability of the entire test remains at the same level. Due to the adaptive test it is possible to significantly reduce the complexity and time of testing.

3. Time as a factor of psychodiagnostic examination. Using a computer a psychologist is able to regulate and set the required pace of psychodiagnostic testing. This pace may also be selected automatically, without the direct involvement of a psychologist. On the other hand, time itself can serve as a diagnostic parameter, for example, as an indicator of the temporal dynamics of the respondent's answers to the test question.

4. Complex algorithms of information processing. It is possible to quickly implement a wide range of different time-consuming procedures for calculating scales, indices, additional indicators; it can also be used for diagnostic analysis, related to the search for precedents in the data bank, etc.

5. Bank of psychodiagnostic data. Having a data bank, which accumulates the results of psychodiagnostic research, may significantly accelerate the process of obtaining reliable, empirically sound test standards for different categories of respondents.

6. Game motivation. "Inclusion" of game motivation increases the attractiveness of the testing process and promotes the reliability of the results. By means of computer games it is possible to simulate certain activities. Computer psychodiagnostic game presupposes a combination of verbal and nonverbal stimuli. Computer game combines the functions of questionnaires and criterion-oriented activity tests. The example of the development in this area of computer psychodiagnostics is the complex SGT-88 – "a set of game techniques".

7. Display of results. With the help of modern computer information display it is possible to organize the transfer of psychodiagnostic examination results on the screen or represent them in the form of personality profile, graph or table, as well as the results of examination of the sample of the respondents by means of diagrams and histograms. By means of scaling methods it also becomes possible to convert and display the results of multidimensional tests into two- and three-dimensional images that allow researchers to assess the groups of respondents within the framework of one or another multidimensional technique.

8. Intelligent interface. Through dialogue with a computer it is possible to obtain various reports, explanations, recommendations for the preparation of psychodiagnostic examination in the process of its implementation as well; it is also possible to get a reasoned psychodiagnostic detailed conclusion [4].

Taking into account the priority prospects for the use of innovative computer technologies in psychodiagnostic practice, the Laboratory of Psychophysiological Research of Bohdan Khmelnytsky Melitopol State Pedagogical University, was opened. It is equipped with the latest computer system for psychophysiological testing – HC-psychotest.

In order to research issues of providing psychological support for future professionals, the experts of the Laboratory of Psychophysiological Research, use the following set of HC-psychotest:

1. Set "Expert". It is a set, that can be used in any psychophysiological research, to assess the functional state and limitations of life-sustaining activity on the basis of mental and physiological indicators, taking into account personal characteristics. The use of a poly-recorder allows specialists to analyze the vegetative and emotional reactions while doing a test. This makes it possible to make a conclusion taking into account the physiological value of the activity. A complete set of clinical questionnaires, techniques and devices allows researchers to assess the level of adaptive capacity for stress, which is accompanied by nervous overpressure. The state of the CNS and regulation of the cardiovascular and respiratory systems are assessed.

2. Complete set "Applicant". An effective and easy-to-use tool for career guidance and professional selection of candidates for vacant posts regardless of their work experience. "Applicant" provides an opportunity to assess the degree of expression of professionally important psychophysiological qualities and professional competencies, as well as to predict further development of the specialist and to conduct in-depth professional psychodiagnostics. The HR-specialist, being aware of the strengths and weaknesses of the applicant, can decide on the feasibility of offering certain vacancies, assess the limitations of future activity or provide recommendations for employee's capacity development.

3. Complete set "Childhood". This set contains techniques for psychological testing of children and adolescents. A block of projective techniques has been developed for preschoolers in order to assess their emotional state, level of readiness for school, and peculiarities of family relations. For the children of primary and

secondary school age there is a wide range of test materials, used to study the features of cognitive functions, reactions to various activities, degree of neuroticism. For school leavers there is a career guidance unit that helps to choose the scope of future activity in accordance with their psychotypes and personal qualities.

4. Set "Sport" is a special set of tests that allows specialist to comprehensively assess the psychophysiological and mental functions of the body, which are important for doing sport: functional asymmetries, personal anxiety, and resistance to stress factors. By means of this set, the laboratory staff evaluates athlete's functional state, his or her readiness to perform (play), timely diagnoses the overtraining and identifies the initial stages of the disease. Set "Sport" includes all mentioned above options.

5. Set "Start" is used in screening psychophysiological researches and gives the chance to find out: features and states of a person; disorders of various mental functions; temperament and mental stability; person's interaction with a group [5].

In 2019 as part of the scientific activity of the Laboratory of Psychophysiological Research, the staff conducted a screening computer psychodiagnostic research of the psychological characteristics of students' mental capacity. The ascertaining experiment, which was conducted during 2019, involved first-year students of Educational and Scientific Institute of Socio-Pedagogical and Art Education and Faculty of Chemistry and Biology of Bohdan Khmelnytsky Melitopol State Pedagogical University. The students of the specialties "Social Pedagogy. Preschool Education", "Social pedagogy. Practical Psychology", "Psychology", "Primary Education", and "Biology Practical Psychology" took part in the experiment (the total number of respondents was 162 people aged 17-22).

After processing the data received by means of the use of technique *"Multilevel Personal Questionnaire on Adaptability" (author A. G. Maklakov and S. V. Chermyanin)* the researchers have identified indicators of the following conditions of mental capacity development: level of adaptive and communicative abilities, neuropsychological stability and moral norms. Among 51.23% of the total number of respondents a low level of *adaptive abilities* development was found out. These students experience problems in adaptation to the requirements of new intellectual and educational environment, they don't have basic mechanisms and methods of its successful acquisition, feel some discomfort in the situation of mental activity in this environment, which negatively affects their emotional stability. 35.09% of first-year students have demonstrated a satisfactory level of adaptive abilities development. The success of their adaptation depends on the external conditions of educational environment, i.e. depending on the situation and its attractiveness to them, they may or may not use the main adaptation mechanisms. Only 13.68% of the respondents have shown a high level of adaptive abilities development. These students have stable resistant characteristics of individual-typological and personal level of individuality, which provide the ability to successfully adapt to various requirements of new educational environment. They can easily and adequately behave in new situations; quickly choose a proper strategy of one's own behavior and socialization,

which is proved by their ability to use certain adaptive mechanisms in higher education learning environment.

The analysis of the results of the level of *neuropsychological stability* development has demonstrated that 58.95% of the total number of students have a low level of neuropsychological stability. This indicates the fact that they are less resilient in the situation of new educational environment and less prepared for the impact of various adverse factors (increasing mental load and requirements for its processing; change of usual learning situation, etc.). These students do not have skills of behavioral regulation. Such characteristics can be viewed as protective mechanisms, appearing during the period of adaptation. Group of first-year students, who has shown a high level of neuropsychological stability (41.05%), is characterized by a high level of behavioral regulation and more realistic perception of reality. They are ready to resist new influences and situations and are able to keep a high level of mental capacity and emotional stability.

Data processing has given us the opportunity to identify two levels of students' *communicative skills* development. 57.55% of respondents are characterized by a dominance of a high level of development of communicative skills, which provide effective interaction and mutual understanding in the process of communication and joint intellectual activity. These students are not usually involved into conflicts, it is quite easy for them to establish contacts with others; they are open for communication and new relationships. 42.46% of the total number of students have demonstrated a low level of these skills development. This gives grounds to conclude that they experience various problems in establishing contacts with others, are isolated or aggressive in relationships, communication and joint intellectual activity.

Analysis of the indicators of first-year students*' moral norms* has led to the following outcomes (Appendix C). 75.09% of students have a high level of moral norms. They understand properly their role in the team, in relationships, stick to generally accepted norms of behavior, adequately perceive new social role, offered to them, they are aware of new requirements of the intellectual and educational environment. At the same time, 24.91% of respondents have a low level of this ability, they are not always able to clearly identify their place and role in the team, don't accept and keep to generally accepted moral and ethical standards of conduct and requirements of new educational environment.

After processing the data, received by means of *"Questionnaire on Adaptability to Stress" (author V. I. Rozov),* three levels of students' adaptability to stress have been found out. Thus, 54.34% of students are characterized by *a medium level* of adaptability to stress, which indicates the ability of student youth to adapt to new conditions of intellectual and educational environment and some adverse learning situations. 28.77% of respondents have shown *a low level* of this indicator. They clearly show maladjustment to stress as a result of unsuccessful attempts to achieve their goal or disharmony in decision-making, which is a consequence of stressful situations, experienced by them. At the same time, 16.84% of respondents are

characterized by *a high level* of adaptability to stress. They have an ability to adapt to the learning and extracurricular process and new conditions that change the environment, to coordinate their goals and outcomes.

This technique has also made it possible to obtain results on the level of adaptability of students according to individual scales, which, in their turn, are factors that affect students' emotional resilience to stress and are certain conditions for the development of their mental capacity (Table 1).

Table 1

Quantitative (%) indicators of first-year students' adaptability to stress according to individual parameters (n = 162)

Parameters of first-year students' adaptability to stress	Low level (%)	High level (%)
optimism	46,66	53,34
social support	51,93	48,07
adaptive thinking, sleeping and dreaming	75,79	24,21
self-confidence	27,72	72,28
monitoring of psychophysiological state and its management	75,09	24,91
ability for somatic regulation	25,96	74,04
time-management	76,84	23,16

Table 1 shows that 53.34% of respondents are characterized by a high level of optimism. In stressful situations they focus on action and problem analysis. They try to seek social support, and while evaluating stressful situation, they tend to emphasize positive aspects, using more adaptive ways to deal with stress. At the same time, 46.66% of students have a low level according to this scale. This indicates that they tend to focus on the negative aspects of stress, which leads to the fact that they use passive strategies to overcome difficult situations. The obtained results have shown that 51.93% of first-year students have low indicators of social support. It means that they sometimes do not feel support, engagement and interest from others during the adaptation period. It also indicates social isolation, weak social support, loneliness, and isolation of some students. 48.07% of respondents are characterized by high results according to this scale. They have the support of others, their parents and friends, they feel that these people love them; they feel that they are needed as they are, but not because they can do something. They are confident in overcoming stressful situations, have a sense of belonging, adoption. Regarding the indicators of adaptive thinking, sleeping and dreaming it has to be mentioned that 75.79% of students have a low level, they are not always able to think beyond stressful situation and evaluate it more realistically. As for 24.21% of respondents, they have shown a high level of this parameter, which indicates their developed skills of optimization and

normalization of sleeping. They are characterized by awareness, self-control, and ability to distance themselves from traumatic events, which leads to the elimination of stress symptoms. The majority of respondents (72.28%) feel quite confident while studying in the university, showing sociability, social skills, ability to openly express their thoughts and feelings. At the same time, 27.72% of first-year students are not confident in themselves and their ability to overcome adaptive stress. The low score of this scale can be explained by the fact that young people change their environment and people they communicate with, so there often appear difficulties in communication, associated with the period of their adaptation to a new social group. In addition, 75.09% of students have shown a low level of ability to monitor and regulate their state, inability to relax in a tense situation and get rid of fatigue. Only 24.91% of respondents are more resistant to the effects of stress and stress influences them with less intensity. They are able to act by comparing action plan and performance of actions, coordinate their own motivation and mental activity. 74.04% of respondents are characterized by a fairly high level of ability for somatic regulation, which is an indicator of their ability for high physical performance. It was found out that 25.96% of participants experience some problems in this area. Sometimes they are not able to cope with stress and overcome feelings and emotions, associated with stressful situations, show low physical performance. The majority of respondents (76.84%) feel difficulties in time-management, which is connected to a lack of experience of living separately, a great amount of reasonable workload and inability to carefully plan their actions. At the same time, 23.16% of students experience no problems in this sphere, demonstrating the ability to properly organize and manage their free time, they take on too many things and do only a few of them on time.

Processing the data of the technique *"Self-Assessment of Mental States" (author G. Eisenk, adapted by E. P. Ilyin)* we have obtained the following results. 54.39% of respondents have shown a medium level of *anxiety*, which indicates some avoidance of situations that can ruin the balance and are associated with a feeling of hopelessness. 42.81% of students are characterized by a low level of this state. They do not feel tense or aren't nervous about studying at university. 2.80% of respondents have demonstrated a high level of anxiety. They experience negative emotions, anxiety, worry and frustration in the learning process.

The research has found out that 66.32% of first-year students have a medium level of *frustration*, which indicates confidence in the correctness of their actions, absence of hesitations and doubts about the correctness of their actions only in favorable environmental conditions. 25.61% of respondents have shown a low level of frustration, which indicates their resilience to failure, lack of fear for difficulties and their confidence in a situation of uncertainty. 8.07% of students are characterized by a high level of this state. They try to avoid difficulties and are afraid of failure, on the way to achieving a specific goal in the presence of obstacles they are dominated by negative feelings.

65.61% of respondents are characterized by a medium level of *aggression*, which is manifested in the variability of their behavior, from restraint to restoration of activity and attack on others. 27.37% of first-year students have a low level of manifestation of this state; they are friendly, open for relationships and communication. Despite this, 7.02% of respondents have demonstrated a high level of aggression. These students experience difficulties in communication and interaction with people, showing hostility and resentment towards others.

It has been also found out that 52.98% of respondents have a medium level of *rigidity*, demonstrating old stereotypes and psychological techniques, which have lost their factuality, in communication and relationships. 42.46% of students are characterized by a low level of *rigidity*, they show dynamism, alternative decision-making and willingness to change their personality in the new educational environment. 4.56% of respondents are dominated by a high level of rigidity. They are characterized by the invariability of behavior, attitudes and beliefs, even if they differ from and do not coincide with the real circumstances of life. They are unable to move away from stereotypical actions in new situations; it leads to a decrease of their adaptability, mental capacity and emotional stability.

So, we define emotional stability of the future specialist as an ability of his or her psyche to overcome the state of excessive emotional pressure while performing complex activities, emotionally stable people are able to overcome emotional stress and have a stable positive direction of emotional experiences.

Empirical study of the psychological features of first-year students' emotional stability during the adaptation period has revealed quite positive moments. Students have high level of development of communicative skills and moral norms, optimism, self-confidence and are able for somatic regulation. First-year students have a medium level of maladjustment, primarily due to the peculiarities of certain mental processes, decreased activity and motivation to work, socio-psychological stress, medium level of adaptability to it and medium level of such mental states as anxiety, frustration, aggression and rigidity. This suggests that they have high chances to maintain the optimal level of mental capacity and emotional stability during the adaptation period, under the conditions of comprehensive implementation of psychological support of the educational process.

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