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THE INFLUENCE OF COMPUTER ACTIVITY ON THE EMOTIONAL STABILITY OF STUDENTS

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Abstract. *The conceptual approaches to the problem of psychological influence of computer activity on a person are represented in the thesis. There have been analysed the aspects of implementation of information and computer technologies in educational activity and generalized psychohygienic requirements of such activity. The essence of the emotional stability phenomenon and personal determinants that cause it have been clarified. Characteristics of the influence of computer technologies on the emotional stability of adolescent individuals have been pointed out.*

This thesis is defined as an integrative emotional stability property, which is determined by a set of characteristics associated with dynamic, to personal characteristics of the emotional sphere. Empirically established that the influence of the computer on students is both positive and negative. Emotional stability of the least experienced the negative impact of the students' computer activities, which are of 6 or more hours a day working at a computer in teaching and professional direction, compared with the students engaged infotainment activities on the computer. It is established that long-term (more than six hours a day) student activities at the computer affects the emotional stability: increased depression, aggression and self-regulation is reduced.

The system aimed at psychocorrection of negative emotional demonstrations and formation of emotional stability of students who are working at the computer actively has been developed and checked. It has been experimentally proved that implementation of the proposed system was effective in the field of formation of emotional stability and psychohygienic grounds of interaction with the computer.

Keywords: *emotional stability, computer activity, duration of computer activity, psychological content of activity, adolescence, students, psychohygienic conditions.*

Generalization of studies [7], [22], [28] dedicated to the topic of interaction in the system of "man-computer" and aimed at clarifying the content and the essence of computer activity, gives an ambiguous description of specific influence on the human.

In modern psychology [4], [16], [25] the problems of computer use in the learning process are investigated, and these developments mainly aimed at optimizing the use of computer and technology information in the system of education. However, there is the lack of the studies in which the impact of the computer activity on the emotional stability of the student is analyzed, in spite of their theoretical and practical relevance.

The paper aims at determining the peculiarities of the emotional stability of students based on the psychological content of their computer activity and building a system of correction of negative emotional expressions that arise in this process.

The objectives of the research are:

1. Generalizing the theoretical and methodological data concerning human interaction in the system of "man-computer."
2. Clarifying the essence of the concept of emotional stability, arranging the characteristics of the impact of computer activity on its manifestations.
3. Investigating the difference of emotional stability of students depending on the content of computer activity and its duration.
4. Elaborating and testing the system of correction of negative emotional manifestations and the formation of emotional stability of students who actively interact with the computer.

Generalization of studies [3], [7], [11], [22] dedicated – directly or indirectly – to the problem of our research, allowed to distinguish them conventionally into five directions.

The approaches, where psychological conceptual understanding of human-computer interaction are revealed, are related to the first direction [15], [22]. The second direction includes the researches which are oriented to the study the matter of professional specialists' selection and determination of psychological preparedness, reliability and emotional stability of a personality in emergency [3], [27]. The third direction combines the works, which examine the intellectual abilities of a person in the process of interaction with the computer and the prospects of

development of artificial intelligence [6], [9], [14]. The fourth direction includes the researches aimed at optimizing the conditions of interaction in the system of "man-computer" and determining psychohygienic requirements in this process [5], [19], scientific works, which present the results of the impact of computer systems on eyesight function, locomotorium, cardiovascular system [11], [18]. Another direction is dedicated to the investigations where the cases of the negative influence of computer activity which affects the disharmonious development of individual, and is mainly reflected in increased frustration, aggression, depersonalization, computer and Internet addiction should be considered [7], [13], [28]. The negative effects of computer activity on the human have been conventionally identified. These effects result in: 1) leading to the undesirable emotional state; 2) encouraging the person to the information which harms his mental development; 3) violation of the functions of emotional self-regulation; 4) arising of spontaneous manifestations of aggression, fear, phobias, frustration and other.

It has been shown that rapid changes in information and computer space affect the formation of the emotional sphere of the adolescents. The investigations [23], [24] prove that mature adolescence is a period of the most intensive development of the individual, the stability of most mental functions, transformation of motivation, the whole system of values, the ability to process and absorb the huge flow of information, intensive formation of special abilities in relation to the future profession.

It has been established that modern society is characterized by the introduction of new teaching methods related to informatization and computerization of education, that will facilitate the emergence of new opportunities for the acquisition of knowledge, distance learning, widening access to education at all levels. The researchers give priority to the software of such activity [20], [21], preparing students to use ICT [8], [10], the application of distance form and on-line learning in the educational process [4], [12], the interaction of the teacher and the student [16], [25], specificity of tutors and teachers' training for ensuring educational and professional activity [17].

The analysis of investigations shows [20] that the availability, the efficiency of information systems have the influence on the students who use computer technology actively and it reflects on their psychological features as well. On the one hand, we have the preconditions for the formation of a new mentality of the students, the opportunities to master the knowledge and spiritual values, and on the other hand, one can observe

the negative consequences of such technological action that are primarily revealed in their emotional area.

At the same time, it is impossible to solve these and other problems without a clear definition of the psychological and psychohygienic aspects of implementation informatization in the system of education. In this context, we determine that it is extremely important to be consistent with the requirements related to specifications of your computer, presentation of illustrative and informational support, duration and conditions.

Among the properties which provide productive activity despite the negative impacts and overcoming them, the scientists (L. M. Abolin [1] I. F. Arshava [2] A. Ya. Chebykin [26], etc.) distinguish emotional durability and emotional stability.

Emotional stability, in our opinion, reflects the balance and duration of the various features of the psyche that ensures the success of a person in different circumstances. As an integrative, emotional stability is characterized by a set of the attributes associated with both dynamic and personal characteristics of the emotional sphere. It has been shown that emotional stability is manifested through favorable forms of joy, passion, specifically directed anger, rage which do not disrupt the personality, but it is mobilized by mechanisms of self-control, which is the leading factor in this property. It is not compatible with unfavorable for the activity persistent manifestations of fear, aggression, depression, anxiety and so on. Having such a complex of psychological characteristics which destabilize human activity emotional instability is stated and it indicates a lack of self-regulation. One of the indication of emotional stability of a personality is also the resistance on the perception of external and internal stimuli arising in business and communication.

These and other studies have allowed to formulate the main hypothesis that the content and the duration of computer activity have different effects on the emotional sphere of students. This effect can be both positive and negative, resulting in signs of emotional stability. However, these features can be combined in certain complexes, each containing principal properties. Defining the latters and their combination can not only predict the direction of the emotional sphere, but also use the adequate means to prevent negative emotional manifestations and the formation of emotional stability of those who work at computer actively.

The results of theoretical studies have shown that the time variable of a person's at computer is an important factor of its impact on his mental state. In addition, we assumed that the mental peculiarities of an individual,

his motivation and cognitive activity are also influenced by the content of a computer. Therefore, the comparison of the results obtained by students with different orientation of time and work at the computer has become the basis for analyzing the problem. Owing to the process of definition of students' dominant computer activity, the following types were identified: information-entertainment, educational-professional. According to the duration of daily computer activities, all the students were conventionally divided into groups which correspond to the following intervals of such interaction: 1) to two hours; 2) from two to six; 3) six hours or more. Also, the groups of students depending on the direction of education (humanitarian and technical) and taking into account their gender were distinguished.

To investigate the indices of students' emotional stability various techniques were applied. They are: "Diagnosis of emotional maturity" of A.Ya. Chebykin; "Freiburg multivariate personality questionnaire» (FPI) form "B" in the adaptation of A. Krylov, etc.; the scale of emotional stability; differentiated self-test of functional state of V. A. Doskin et al. In order to determine the dominant types of students' activity at computer we used our diagnostic procedure. About 300 students were examined.

Statistical analysis of significant differences in diagnosed indices which determine the emotional stability in different groups, in general, showed the following data. The students with a predominance of educational and professional activities at computer, who are engaged in the procees up to 2 hours, cognitive interest ($t = 2,99$; $p \leq 0,01$), spontaneous ($t = 2,94$; $p \leq 0,01$) and reactive ($t = 2,44$; $p \leq 0,01$) aggressiveness is less as compared with students who are engaged in the same activities from 2 to 6 hours. Also, this group (up to 2 hours), differs from the group of students who work more than 6 hours, in terms of higher rates of expressiveness ($t = 4,27$; $p \leq 0,01$), irritability ($t = 2,82$; $p \leq 0$ 01), emotional lability ($t = 2,18$; $p \leq 0,05$) and lower indices of spontaneous aggression ($t = 2,23$; $p \leq 0,05$), balance ($t = 3,30$; $p \leq 0,01$). Also, there have been established some differences at those who use computer from 2 to 6 hours in terms of much more higher indices of indifference values ($t = 2,75$; $p \leq 0,01$), expressiveness ($t = 3,64$; $p < 0,01$), irritability ($t = 3,45$; $p \leq 0,01$), reactive aggression ($t = 2,66$, $p \leq 0,01$) as compared with the students who work 6 hours or more, who, in their turn, manifested higher balance ($t = 2,81$; $p \leq 0,01$).

Regarding the group of students who use computer as an information and entertainment tool, these groups also revealed some differences

depending on time. Thus, students who interact with computer 2 hours daily are statistically distinguished by significant shyness ($t = 2,66$; $p \leq 0,01$) and lower values of the indices of self-regulation ($t = 2,33$; $p \leq 0$, 05), extraversion ($t = 2,20$; $p \leq 0,05$) and communicativeness ($t = 2,66$; $p \leq 0,01$) as compared with those who are engaged in the same activities from 2 to 6 hours. The students who are engaged in information and entertainment activities from two to six hours, are distinguished by a predominance of values of aggression ($t = 2,93$; $p \leq 0,01$), indifference ($t = 2,68$; $p \leq 0,01$), expressiveness ($t = 2,23$; $p \leq 0,05$), extraversion ($t = 3,23$; $p \leq 0,01$), masculinity ($t = 3,96$; $p \leq 0,01$), communicativeness ($t = 3, 41$; $p \leq 0,01$) as compared with the students who are at computer six or more hours. The latters are characterized by lower levels of self-regulation ($t = 2,82$; $p \leq 0,01$), lack of balance; ($t = 3,03$; $p \leq 0,01$) and severe depression ($t = 3,45$; $p \leq 0,01$).

That is, information and entertainment activities with respect to previous data in the group of students who use computer primarily as an educational and professional means, has a greater negative impact on the emotional stability.

Thus, the obtained results have become the ground to state that the duration and content of students' computer activities affects differently on their emotional stability. Obviously the nature of this impact depends on the conditions of teaching and professional activities of students, namely on the content of their training. Because the specifics of teaching and professional activities of students of humanities and technical specialties are significantly different.

Statistically significant differences in indicators which reflect different features of the emotional sphere of the students of technical and humanitarian area of study have been established. In the groups of students of technical specialties within educational and vocational, information and entertainment computer activities statistically significant differences in terms of self-regulation ($t = 3,38$; $p \leq 0,01$), balance ($t = 3,04$; $p \leq 0$ 01), happiness ($t = -2,78$; $p \leq 0,01$), masculinity ($t = 2,06$; $p \leq 0,05$) have been defined. This argues that the students of technical specialties in teaching and professional activities at computer are characterized by the ability of regulating their emotions, restraining unwanted emotional manifestations of themselves and others. Moreover, they are more resistant to stress, more confident and active. As for students in this area of study of information and entertainment activities on the computer, they are more optimistic and, at the same time, less balanced and restrained.

In the groups of students of humanities specialities with teaching and professional, information and entertainment area of computer activity statistically significant differences in terms of extraversion ($t = -2,72$; $p \leq 0,05$), Joy ($t = -2,52$; $p \leq 0,05$), masculinity ($t = -2,25$; $p \leq 0,05$) and shyness ($t = 2,08$; $p \leq 0,05$) have been observed. Based on the given the data, we can say that the students of the Faculty of Humanities with the dominance of educational and professional activities in the system of "man-computer" are less confident and feel more difficulty in communication than students with information and entertainment activities, who are characterized by a more evident extravertation and vivid manifestations of joy.

These differences can be explained by several factors: first, the fact that the students of both directions of study due to certain natural and personal characteristics prior the choice of specialty tended to accomplish the activity, which allows them to realize their need for professional development. Secondly, the educational and professional activity itself directly or indirectly affects the expression and development of their personal characteristics, and thirdly, veritable fact is that these changes are also influenced by sex differences, as there are much more male students in technical professions. In this sense, if we consider the differences between the indicators in the groups of male students with these activities at computer, there have also been found statistically significant data: young male students with educational and professional activity at computer have more obvious values of self-regulation ($t = 2.85$; $p \leq 0,01$), balance ($t = 3,55$; $p \leq 0,01$) and masculinity ($t = 2,66$; $p \leq 0,01$). The male students with information and entertainment activities have a higher value of joy ($t = 2,44$; $p \leq 0,05$). So, we can say that male students with educational and professional activities in the system of "man - computer" have a greater ability to restrain and regulate their emotions, they are more confident, more resistant to stress, active, emotionally stable as compared with the ones in the informational and entertainment activities.

In the group of female students, where information and entertainment activities are dominant, there are higher results of diagnosed indicators as compared with the ones engaged in teaching and professional activities, in terms of joy ($t = 2,72$; $p \leq 0,01$) cognitive interest ($t = 2,03$; $p \leq 0,05$), shame ($t = 2,28$; $p \leq 0,05$), spontaneous aggression ($t = 2,86$; $p \leq 0,01$), extraversion ($t = 2\ 92$; $p \leq 0,01$), masculinity ($t = 2,47$; $p \leq 0,05$). The first group of female students is characterized by a greater optimism, a rather high cognitive activity, extraversion, but also by an affective reaction, impulsivity. The

group of students with predominantly teaching and professional activities at computer is characterized by the ability to control themselves better in different situations, restrain unwanted emotions.

Overall, we can conclude that the group of students with the dominance of teaching and professional activities at the computer both male and female students have displayed the signs of emotional stability as opposed to the students who are mostly engaged in information and entertainment activities.

The results in each group allow to state the different system of correlations, which indicates the interdependence of emotional stability with the contents of the computer activity and its duration.

Consideration of these and other data can be used to develop systems of correction and laying the foundations of emotional stability of the students who are active at computer.

In its construction we considered: the specific of adverse changes in the emotional characteristics of the students, their depth, stability, connection to other properties; individual-psychological peculiarities of studied adolescents, such as motivation, cognitive and personal interest; certain aspects of organizing computer activities, which involves students (at home, at work, etc.); existing methods, techniques, equipment of psychological effects (autogenic and ideomotor training, relaxation exercises, active listening, etc.).

The main objective of the proposed system has been directed at the awareness by the students the influence of ICT; prevention and correction of negative emotional manifestations as a result of this activity and the formation of emotional stability, based on the specifics of the student's activity at computer.

The proposed system has an integrated approach, where one of its first steps informational and educational activities associated with the expansion of student perceptions of the likely negative impacts of a computer on a person is the key point. As well as conducting psychodiagnostic emotional states, characteristics of students, providing legal psychohygienic advice as to the organizing computer activity. The second stage was aimed at individual and group psychological correction of negative emotional manifestations which arose due to the interaction with the computer based on personal principal characteristics of the students which determine the emotional instability. The work on this stage has been carried out on such interrelated levels: teaching students the techniques and methods of mastering their emotional state; enhancing

functional and operational resources of the students, formation of the necessary knowledge, skills, abilities, leading to the increase of efficiency of activities, creation of safety; correction of certain features of the emotional sphere of the individual students. The correction part included the classes united by the one theme, namely, the development of emotional competence, empathy, communicativeness, the work on leveling anxiety, shyness, aggression. Still the emphasis was given to the individual peculiarities of the students. In addition, the introspection of states and changes has been systematically conducted. In the third molding of the proposed system a great attention has been drawn to the development of certain emotional and volitional characteristics, self-control and emotional stability of the students. The purpose of this part was to expand information channels, activation of self-improvement processes, improvement of self-emotional states.

To implement the proposed system have been formed the groups of students who are actively engaged in computer activities of six or more hours with diagnosed emotional instability: the neurotic-depressive type, modestly-labile, aggressively-aggravated and sensitive-nonself-regulated.

Psychodiagnostic of emotional states and properties has been performed at the beginning and at the end of the implementation of targeted system (Table. 1).

After holding a forming experiment in the group of emotionally unstable for neurotic-depressive type of students (group 1) was revealed a positive shift of the emotional sphere by increasing the level of cognitive interest, joy, health, activity, self-regulation and reducing the negative effects of aggression, anxiety, indifference.

Table1

Statistically significant changes in terms of emotional stability indices of students before and after forming experiment

Indices	Group 1			Group2			Group 3			Group 4		
	before	after	t	before	after	t	before	after	t	before	after	t
I1	53,6	69,4	2,27	51,3	69,7	2,69*	53,1	75,4	3,28*	49,6	68,2	2,35
I2	34,3	17,3	-2,34	22,4	13,3	-2,09	56,9	31,3	-7,11*	48,4	31,4	-7,20*
I3	50,9	24,0	-6,22*	29,0	17,8		25,4	12,2	-2,50	49,3	25,2	-4,64*
I4	50,7	24,3	-5,47*	33,1	19,6	-3,73*	37,6	18,7	-4,97*	58,2	36,7	-5,02*

I5	56,9	77,9	3,39*	59,1	77,2	2,56	53,0	74,4	4,28*	47,4	66,6	2,92*
I6	27,6	16,6		52,8	29,8	-7,42*	37,4	18,0	-3,92*	40,2	19,9	-3,02*
I7	7,8	8,3		5,3	6,7	2,43	6,2	6,4		6,4	6,8	
I8	5,8	6,7	2,11	5,8	7,7	2,12	6,0	6,8		5,1	5,3	
I9	7,3	7,9		7,0	7,4		6,1	7,4	2,20	5,6	7,0	2,08
I21	4,1	5,0	2,71*	4,5	4,8		4,6	4,7		3,6	4,5	2,39
I22	4,0	4,7	2,12	4,4	5,0	2,06	4,1	4,8	2,66*	4,0	3,9	
I23	5,1	5,5		5,0	5,2		4,5	5,2	2,04	4,5	4,6	

Note: 1. I1-joy, I2-aggression,I3-anxiety, I4-indifference, I5-cognitive interest, I6-shame, I7-expressiveness, I8-self-regulation, I9-empathy, I21-health, I22-activity, I23-mood;

2. without asterisk * - statistically significant differences at $p \leq 0,05$ * - statistically significant differences at $p \leq 0,01$.

After the experiment the results in the group of students who are emotionally unstable by modestly-labile type (group 2) showed the improvements of joy indicators, cognitive interest, activity, expressive, self-regulation and reduction of aggression, indifference, shame.

After the implementation of the proposed system in the group of students who are emotionally unstable by aggressively-angry type (group 3), there are levelling of the negative emotional manifestations and the increase of cognitive interest, joy, activity, mood, empathy.

After the forming experiment in the group of students who are emotionally unstable by sensitive-non-selfregulated type (group 4), decreased the levels of aggression, anxiety, indifference, shame and changed for better the level of health, empathy, cognitive interest, joy.

Summarizing the results of the experiment, we can say that the implementation of the developed system of prevention and correction of negative emotional manifestations has led to a raising of the emotional stability of students working at computer.

Therefore, the approbation of the suggested system of correction and forming emotional stability showed positivity of its use in working with the students who are actively engaged in computer activities.

In a study performed:

- it has been found for the first time that prolonged (more than six hours daily) computer activity ambiguously affects the emotional stability of students: the students who prefer information and entertainment activities,

have increased depression and the reduced self-regulation, balance; for students with educational and professional orientation adverse effects are less; selected types of emotional instability, namely neurotic-depressive modestly-labile, aggressively-angry and sensitive-nonselfregulating which reflect emotional features of the students who actively interact with the computer;

- the essence of the phenomenon of emotional stability and personal determinants which cause has been specified;
- the ideas about the prevention and correction of negative emotional manifestations in students who actively use computer, or psychohygienic requirements for human interaction in the system of "man - computer" considering the time and content of the activity have been further developed.

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Davidovitch Nitza

LEARNING-FOCUSED TEACHING AND BACKWARD COURSE DESIGN - FROM TRANSFERRING KNOWLEDGE TO IMPARTING TEACHING SKILLS

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Abstract. *The article shall focus on the design of academic courses from a learning centered approach, with an emphasis on the formulation of learning outcomes. Planning*