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STUDY OF THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE IN STUDENTS AND THE RATIO OF TWO SIGNAL SYSTEMS

The article presents the results of the study of the relationship between emotional intelligence in students and the ratio of signal systems, the purpose of which was to identify the presence of a relationship between emotional intelligence and the components of the first and second signal systems. The results of an empirical study are presented on a sample that included 340 respondents (241 girls and 99 boys) from different areas of professional training. In accordance with the purpose of the study, the following methods were used: Emotional Intelligence Questionnaire (EmIn) by D.V. Lyusina, Questionnaire for Diagnostics of the Ratio of Two Signal Systems by B.R. Kadyrov. As a result of the correlation analysis according to the Spearman criterion, a relationship was found between the scales of signal systems and the components of emotional intelligence. At the same time, if self-regulation, analytical thinking, will and self-esteem are positively associated with manifestations of emotional intelligence, then the severity of such qualities as emotionality, imagination and anxiety are negative consequences of a low level of emotional intelligence. It was found that the second signal system is more closely related to the components of emotional intelligence, which is determined by the work of the nervous system and the mental activity associated with it, and affects the manifestation of emotional intelligence in an individual.

Key words: emotional intelligence, first signal system, second signal system, nervous system, mental activity.

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Студенттердің эмоционалдық интеллектісінің екі сигналдық жүйенің арақатынасымен өзара байланысын зерттеу

Мақалада студенттердегі эмоционалдық интеллект пен сигналдық жүйелердің арақатынасы арасындағы байланысты зерттеу нәтижелері берілген, оның мақсаты эмоционалды интеллект пен бірінші және екінші сигналдық жүйелердің құрамдас бөліктері арасындағы байланыстың болуын анықтау болды. Кәсіби дайындықтың әртүрлі бағыттарынан 340 респондентті (241 қыз және 99 ұл) қамтитын іріктеу бойынша эмпирикалық зерттеу нәтижелері ұсынылған. Зерттеу мақсатына сәйкес келесі әдістер қолданылды: Эмоциялық интеллект сауалнамасы (EmIn) Д.В. Люсин, екі сигналдық жүйенің байланысын диагностикалауға арналған Б.Р. Қадыров сауалнамасы. Спирмен критерийін қолдану арқылы корреляциялық талдау нәтижесінде сигналдық жүйелердің шкалалары мен эмоционалдық интеллект компоненттері арасындағы байланыс анықталды. Оның үстіне, егер өзін-өзі реттеу, аналитикалық ойлау, ерік пен өзін-өзі бағалау эмоционалды интеллект көріністерімен жағымды байланысты болса, эмоционалдылық, қиялдау және алаңдаушылық сияқты қасиеттерді көрсету эмоционалдық интеллекттің төмен деңгейінің жағымсыз салдары болып табылады. Екінші сигналдық жүйе жүйке жүйесінің жұмысымен және онымен байланысты психикалық әрекетпен анықталатын эмоционалды интеллект компоненттерімен тығыз байланысты және жеке тұлғада эмоционалды интеллекттің көрінуіне әсер ететіні анықталды.

Түйін сөздер: эмоционалды интеллект, бірінші сигнал жүйесі, екінші сигнал жүйесі, жүйке жүйесі, психикалық әрекет.

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Исследование взаимосвязи эмоционального интеллекта у студентов с соотношением двух сигнальных систем

В статье представлены результаты исследования взаимосвязи эмоционального интеллекта у студентов с соотношением сигнальных систем, цель которой заключалась в выявлении наличия взаимосвязи между эмоциональным интеллектом и компонентами первой и второй сигнальных систем. Приведены результаты эмпирического исследования на выборке, которая включала в себя 340 респондентов (241 девушек и 99 юношей), с разных направлений профессионального обучения. В соответствии с целью исследования были использованы следующие методики: Опросник Эмоционального интеллекта (ЭмИн) Д.В. Люсина, Опросник диагностики соотношений двух сигнальных систем Б.Р. Кадырова. В результате корреляционного анализа по критерию Спирмена между шкалами сигнальных систем и компонентами эмоционального интеллекта была обнаружена взаимосвязь. При этом если саморегуляция, аналитическое мышление, воля и самооценка положительно связаны с проявлениями эмоционального интеллекта, то выраженность таких качеств как эмоциональность, воображение и тревожность являются негативными последствиями низкого уровня эмоционального интеллекта. Было выявлено, что вторая сигнальная система в большей степени связана с компонентами эмоционального интеллекта, что обуславливается работой нервной системы и связанной с ним психической деятельностью, и влияет на проявление эмоционального интеллекта у личности.

Ключевые слова: эмоциональный интеллект, первая сигнальная система, вторая сигнальная система, нервная система, психическая деятельность.

Introduction

The issue of emotional intelligence is particularly relevant in today's world. Exploring this phenomenon holds significant theoretical and practical value, as emotions often play a crucial role in shaping interpersonal relationships and influencing key decisions in daily life. The ability to recognize, interpret, and manage emotions – both one's own and those of others–is therefore essential for building effective relationships. The concept of "emotional intelligence" was introduced in 1990 by American scholars J. Mayer and P. Salovey, who described it as the capacity to perceive and express emotions, integrate them with thought, understand emotional meanings, and regulate emotions in oneself and others (Sergienko, 2010). In their view, emotional intelligence is not about reason prevailing over emotion, but about a unique interplay between the cognitive and emotional realms that enables individuals to navigate life's difficulties more effectively (Mayer et al., 2000).

Emotional intelligence is shaped by two key mechanisms: general emotionality and cognitive abilities (Anokhina, 2018). General emotionality refers to an individual's inherent emotional characteristics, which influence the content, intensity, and dynamics of their emotional experiences. As a core element of temperament, it is reflected through traits such as sensitivity, responsiveness, and impulsivity. The dynamic aspects of emotionality involve how emotions arise, unfold, and subside, as well as how they are outwardly expressed. A significant component of general emotionality is emotional stability, which is reflected in how sensitive a person is to emotional stimuli and how well their mental regulation processes function under emotional stress. Emotional stability is influenced by both physiological and psychological factors. The physiological basis of emotional stability lies in the characteristics of the nervous system, while the psychological aspect involves complex mechanisms of self-regulation and behavioral control developed through personality formation. L.S. Vygotsky emphasized that these mechanisms are rooted in the intricate relationship between emotion and cognition, encapsulated in the concept of the unity of affect and intellect within human behavior and activity (Vygotsky, 1984).

L.M. Abolin explored the core components and criteria of emotional stability, viewing it as a trait that defines an individual's capacity to function effectively under high-pressure conditions. According to Abolin (1987), emotionally stable individuals demonstrate harmoniously coordinated emotional processes that support goal achievement. He identified key internal factors influencing emotional stability or instability, such as emotional and physiological reactivity (excitability), the innate properties

of the nervous system, and emotional traits acquired through life experiences.

Contemporary theories further highlight the coordinating role of the limbic system in regulating emotions. The "limbic brain" is seen as a central hub that maintains two-way communication with both subcortical structures (like the septum, superior colliculi, and locus coeruleus) and various regions of the cerebral cortex, thereby integrating multiple brain systems involved in emotional processing (Khomskaya, 1992).

Literature review

Recent research has uncovered the physiological foundations of emotional intelligence, with particular emphasis on the role of specific brain structures. Among the most significant are components of the limbic system (Anokhina, 2018), especially the amygdala (Goleman, 2005; Grinchenko, 2012), the orbitofrontal cortex (Damasio, 1994), and the system of "mirror neurons" (Rizzolatti, 2012).

The amygdala, a key substructure of the limbic system, plays a central role in generating both positive and negative emotions. It evaluates external stimuli and determines whether they pose a threat. Emotions such as fear, anger, and disgust – typically associated with danger – are closely linked to amygdala activity (Goleman, 2012).

The orbitofrontal cortex, meanwhile, integrates visceral emotional responses into conscious decision-making. It acts as a bridge between the "primitive" emotional centers of the brain – such as the brainstem and amygdala – and higher-order cognitive functions. Clinical observations have shown that damage to the orbitofrontal cortex not only dulls emotional responses but also severely impairs decision-making, highlighting its crucial role in emotional and cognitive integration.

Research by A. R. Damasio (1994) provides compelling evidence that emotions play a vital role in the decision-making process. A significant physiological component of this process involves emotional "mirror" neurons, located in brain regions such as the insula – between the frontal and temporal lobes – and the anterior cingulate cortex. These neurons exhibit similar patterns of activation both when a person experiences an emotion (e.g., disgust) and when they observe the same emotion expressed on someone else's face.

A defining feature of mirror neurons is their dual response: they are activated both when an individual performs an action and when they observe another person performing it. Their primary function is to enable the understanding of others' actions as purposeful movements. As Rizzolatti (2012) notes, the mirror system "captures the intentional aspect of actions, shared by both the observer and the actor." This neural mirroring mechanism forms the physiological basis for recognizing emotions and fostering empathy (Andreeva, 2020).

Although various theories interpret emotional intelligence differently, researchers consistently emphasize the importance of distinguishing between the concepts of the emotional brain and emotional intelligence, as well as exploring their interaction. The emotional brain refers to the body's physiological and neurological responses to external stimuli, while emotional intelligence involves the interpretation of these signals and the attribution of emotional meaning to them (Anokhina, 2018).

Thus, the psychophysiological foundations of general emotionality and emotional stability can be attributed, on the one hand, to the functioning of the limbic system and cortical regulation, and on the other hand, to physiological reactivity and the inherent characteristics of the human nervous system.

As a distinct form of human intelligence, emotional intelligence is also closely linked to cognitive functions, particularly the speed and efficiency of information processing. Even H. Eysenck (1995) emphasized this connection by defining intelligence in terms of the nervous system's processing speed. This perspective, often referred to as psychophysiological reductionism, views intelligence primarily through neurophysiological parameters. Research has shown a correlation between processing speed (or "speed intelligence") and various electrophysiological indicators.

Notable findings have emerged from the study conducted by T.A. Sysoeva and V.V. Ovsyannikova (2015), which examined the relationship between emotional intelligence and the speed of processing emotionally charged information. International studies have demonstrated that people identify emotionally colored stimuli (such as faces expressing different emotions) at varying speeds. Sysoeva and Ovsyannikova found that individuals with a higher ability to recognize emotions more quickly identified joyful faces. Based on their research, the authors identified several cognitive correlates of emotional intelligence, such as the automatic slowing or acceleration of processing in response to threatening stimuli, the ability to quickly differentiate between angry and joyful expressions, and the relative speed

in detecting emotionally positive or negative facial expressions.

In recent years, the investigation of the brain's emotional functions has expanded to include the study of interhemispheric asymmetry and the interaction between the cerebral hemispheres. However, findings in this area remain inconsistent and have yet to lead to universally accepted conclusions about the lateralization of emotional processes. Overall, it is important to note that the role of the neocortex in emotional regulation remains insufficiently explored, and current knowledge about the involvement of neocortical structures in managing emotional states is still incomplete (Anokhina, 2018).

Given from the above that emotional characteristics are due to a number of biological prerequisites, we are interested in the relationship of emotional intelligence with the components of the two signal systems, which is the goal of our study. Since the first and second signal systems are characterized by the work of the nervous system and related mental activity, which, in turn, may directly or indirectly affect the manifestation of emotional intelligence in the individual (Konareva, 2021).

Within the framework of the topic under consideration, an empirical study was conducted, in which the object of the study was students of 1-4 courses in the amount of 340 people (241 girls and 99 boys) studying in different areas of vocational training. Of these, 54 people from the National University of Uzbekistan named after Mirzo-Ulugbek; 79 people from the Tashkent Pediatric Medical Institute; 39 people from the State Institute of Art and Culture of Uzbekistan; 56 people from the National Institute of Art and Design named after K. Bekhzod; 60 people from the branch of Moscow State University named after M. V. Lomonosov in Tashkent; 52 people from Tashkent State University of Oriental Studies. The subject of the study is the relationship between emotional intelligence and components of signal systems.

Materials and methods

The task was solved by using the following methods: Emotional Intelligence Questionnaire (EmIn) Lusina D.V., including five subscales, which, in turn, are combined into four scales of a more general order: IEI scale (interpersonal EI), IntraEI scale (intrapersonal EI), UE scale (understanding emotions), EM scale (emotion management), UP subscale (understanding other people's emotions), MP subscale (managing other people's emotions), UO subscale (understanding one's own emotions), MO subscale (managing one's own emotions), EC subscale (expression control). Also, a questionnaire for diagnosing the ratios of two signal systems Kadyrov B.R., which is revealed by the following indicators: 1) dynamic features (activity and self-regulation); 2) emotionality and will; 3) processes – memory, imagination, thinking. The total indicator of the severity of the first, second signal system and their ratio in the form of the "signal coefficient" was also calculated. Spearman's r criteria were used for statistical data processing.

Results and discussion

According to the results of correlation analysis according to Spearman's criterion between the scales of the first signal system and the components of emotional intelligence, a negative correlation was found between the scales "Sociability" and such components of emotional intelligence as "Understanding other people's emotions" ($r=-0.296$, $p<0.01$), "Managing other people's emotions" ($r=-0.348$, $p<0.01$), "Managing your own emotions" ($r=-0.236$, $p<0.01$), "Interpersonal emotional intelligence" ($r=-0.363$, $p<0.01$), "Understanding emotions" ($r=-0.198$, $p<0.01$), "Emotion management" ($r=-0.255$, $p<0.01$), "Overall level of emotional intelligence" ($r=-0.252$, $p<0.01$) (tab. 1).

Before proceeding to the interpretation of the results of the correlation analysis, it is necessary to note that for all scales of the methodology of the ratio of two signal systems Kadyrov B.R. a kind of reverse scaling is applied, i.e. lower scores on the scales mean higher levels of manifestation of the corresponding characteristics, and higher scores, on the contrary, express lower levels of their manifestation. Therefore, it should be taken into account here that negative correlation coefficients between the scales of the methodology of the ratio of signal systems Kadyrova B.R. and other methods means a positive relationship. Returning to the above results, we can say that the higher the sociability, the higher the overall level of emotional intelligence and most of its components. In our opinion, this can be explained by the fact that the need for communication, the propensity to establish social contacts and the ability to establish them, can indeed be realized in a variety of components of interpersonal emotional intelligence, including in understanding their own and other people's emotions, in managing their own and other people's emotions, empathy, compassion, etc.

Table 1 – Correlation Coefficients Between Scales of Emotional Intelligence and Components of the First Signal System (Spearman's Criterion)

Scales	Sociability	Activity	Emotionality	Figurative Memory	Imagination
Understanding Other People's Emotions	-0,296**	-0,340**	-0,059	-0,182**	-0,019
Managing Other People's Emotions	-0,348**	-0,238**	0,080	-0,030	0,055
Understanding Your Own Emotions	-0,026	-0,151**	0,347**	0,093	0,192**
Managing Your Own Emotions	-0,236**	-0,255**	0,307**	-0,028	0,179**
Control of Expression	0,079	-0,054	0,415**	0,054	0,173**
Interpersonal Emotional Intelligence	-0,363**	-0,332**	0,005	-0,133*	0,012
Intrapersonal Emotional Intelligence	-0,084	-0,204**	0,446**	0,042	0,227**
Understanding Emotions	-0,198**	-0,305**	0,160**	-0,052	0,095
Emotion Management	-0,255**	-0,263**	0,339**	-0,019	0,174**
Overall Level of Emotional Intelligence	-0,252**	-0,313**	0,271**	-0,043	0,148**

Note: * $p<0.05$; ** $p<0.01$

According to the "Activity" scale, there is a negative correlation with the scales "Understanding other people's emotions" ($r=-0.238$, $p<0.01$), "Managing other people's emotions" ($r=-0.255$, $p<0.01$), "Understanding your own emotions" ($r=-0.151$, $p<0.01$), "Managing your own emotions" ($r=-0.255$, $p<0.01$), "Interpersonal emotional intelligence" ($r=-0.332$, $p<0.01$), "Intrapersonal emotional intelligence" ($r=-0.204$, $p<0.01$), "Understanding emotions" ($r=-0.305$, $p<0.01$), "Emotion management" ($r=-0.263$, $p<0.01$), "Overall level of emotional intelligence" ($r=-0.313$, $p<0.01$). These results indicate that the higher the activity, the higher the level of various components of emotional intelligence. Considering that activity here means general behavioral activity, a tendency to super-normative actions, excess energy, a wide range of contact with others, it can be said that understanding your own and other people's emotions, in managing your own and other people's emotions implies a generally active position of a person in the broadest sense of the word (tab. 1).

Also, the indicators of the "Emotionality" scale positively correlate with such scales as "Understanding your own emotions" ($r=0.347$, $p<0.01$), "Managing your own emotions" ($r=0.307$, $p<0.01$), "Control of expression" ($r=0.415$, $p<0.01$), "Intrapersonal emotional intelligence" ($r=0.446$, $p<0.01$), "Understanding emotions" ($r=0.160$, $p<0.01$), "Emotion management" ($r=0.339$, $p<0.01$), "Overall level of emotional intelligence" ($r=0.271$, $p<0.01$). Considering that the results of the "Emotionality" scale, as well as other scales, have an inversion character (i.e. reverse scaling is applied), positive correlations mean a negative relationship. This indicates that a higher expression of various components of emotional intelligence contributes to a decrease in the manifestation of emotionality, and vice versa, an insufficient level of development of emotional intelligence leads to an increase in emotionality (tab. 1).

The rationale for the data obtained may be the fact that since emotional intelligence is the ability to manage your emotions and control them, with increased emotionality in the individual, difficulties may arise with emotional self-regulation and control of their non-verbal manifestations (facial expressions, gestures), which may negatively affect the overall level of emotional intelligence of the individual.

There is a negative correlation between figurative memory and "Understanding other people's emotions" ($r=-0.182$, $p<0.01$), "Interpersonal emotional intelligence" ($r=-0.133$, $p<0.05$). This may be due to the fact that when understanding other people's emotions, a person may figuratively imagine what their interlocutor is feeling. This, in turn, can help him fully empathize and correctly perceive the emotions and feelings of others, as well as understand the reasons for their occurrence (tab. 1).

The results of the correlation analysis show that imagination positively correlates with such scales as "Understanding your own emotions" (r=0.192, p<0.01), "Managing your own emotions" (r=0.179, p<0.01), "Control of expression" (r=0.173, p<0.01), "Intrapersonal emotional intelligence" (r=0.227, p<0.01), "Emotion management" (r=0.174, p<0.01), "Overall level of emotional intelligence" (r=0.148, p<0.01). This means that the more a person manifests imagination as one of the components of their first-signal features, the lower the indicators of various components of emotional intelligence. Given that according to the methodology of Kadyrov B.R. imagination characterizes the personality from the side of her disposition to dreaminess, impressiveness, it is easy to assume that such qualities express a certain passive position of the personality, and, therefore, can negatively affect the development of emotional intelligence.

The correlation analysis between the scales of the second signal system and the components of emotional intelligence showed that there is a negative correlation between all scales of emotional intelligence and such second-signal features of personality as "Self-regulation", "Analytical thinking", "Will", "Self-esteem" (p<0.01). That is, the higher the level of these components of the second signal system, the higher the emotional intelligence in the individual (tab. 2).

The results can be explained by the fact that since self-regulation is a necessary component for managing and controlling your emotions, its increased level may indicate a high level of emotional intelligence. Also, the volitional qualities of the personality can influence the regulation and management of the emotional state. If we talk about analytical thinking, we can assume that the ability of a person to divide information into components, see the relationships between them, to be able to analyze can help him in understanding his own and other people's emotions, in determining emotional states and experienced feelings.

Table 2 – Correlation Coefficients Between Scales of Emotional Intelligence and Components of the Second Signal System (Spearman's Criterion)

Scales	Self-Regulation	Analytical Thinking	Will	Anxiety	Self-Esteem
Understanding Other People's Emotions	-0,396**	-0,340**	-0,443**	0,031	-0,398**
Managing Other People's Emotions	-0,327**	-0,240**	-0,413**	0,201**	-0,364**
Understanding Your Own Emotions	-0,330**	-0,229**	-0,364**	0,397**	-0,196**
Managing Your Own Emotions	-0,409**	-0,320**	-0,487**	0,425**	-0,375**
Control of Expression	-0,272**	-0,220**	-0,259**	0,268**	-0,112*
Interpersonal Emotional Intelligence	-0,406**	-0,322**	-0,480**	0,119*	-0,426**
Intrapersonal Emotional Intelligence	-0,435**	-0,327**	-0,478**	0,466**	-0,295**
Understanding Emotions	-0,447**	-0,351**	-0,499**	0,234**	-0,375**
Emotion Management	-0,459**	-0,356**	-0,537**	0,395**	-0,400**
Overall Level of Emotional Intelligence	-0,499**	-0,383**	-0,573**	0,342**	-0,426**

Note: * p<0.05; ** p<0.01

The connection between self-esteem and emotional intelligence can be explained by the fact that, given that a person with high emotional intelligence in society is regarded as capable of quickly and easily establishing contacts, as empathetic, able to correctly present himself and ecologically express his emotions, this leads to an emotionally positive perception of him by others. And this, in turn, can positively affect his self-esteem, since social significance of the personality also plays an important role in its formation.

On the scales of the second signal system, only the scale "Anxiety" positively correlates with all components of emotional intelligence (p<0.01).

This suggests that the higher the anxiety in the individual, the lower the level of manifestation of emotional intelligence. Apparently, this indicates that since anxiety is accompanied by excitement, anxiety and worries, these feelings may interfere with the understanding and perception of emotions and feelings of others, since these feelings force a person to concentrate on himself, ignoring the feelings of others, which may affect the overall level of emotional intelligence (tab. 2).

According to the results of correlation analysis, between the general scales of signal systems and components of emotional intelligence, there is a negative correlation between the indicators of the scale "First-signal" and "Understanding other people's emotions" ($r=-0.300$, $p<0.01$), "Managing other people's emotions" ($r=-0.199$, $p<0.01$), "Interpersonal emotional intelligence" ($r=-0.291$, $p<0.01$), "Understanding emotions" ($r=-0.124$, $p<0.05$). Apparently, some components of first-signal (for example, "Sociability", "Activity", "Figurative memory"), in some sense reflect the general active position of the personality, which can favorably affect the development of, mainly, interpersonal components of emotional intelligence, including the understanding of emotions, the understanding of other people's emotions and the management of other people's emotions (tab. 3).

However, the positive correlation coefficients of the "First-signal" scale with such scales as "Understanding your own emotions" ($r=0.110$, $p<0.05$), "Control of expression" ($r=0.200$, $p<0.01$) attract special attention. Perhaps, these results indicate that the expression of some first-signal features (for example, such as "emotionality", "imagination"), reflecting, most likely, some passivity and uncontrollability of emotional and cognitive processes, negatively affect the ability to understand their emotions, to control expression, which, judging by the names of the scales, clearly relate to intrapersonal components of emotional intelligence.

Table 3 – Correlation Coefficients Between Scales of Emotional Intelligence and Generalized Scales of the Questionnaire Methodology of the Ratio of Two Signal Systems of B.R. Kadyrov (Spearman's Criterion)

Scales	First-Signal	Second-Signal	Signal Coefficient	Level of Analytical-Synthetic Activity
Understanding Other People's Emotions	-0,300**	-0,396**	-0,169**	-0,420**
Managing Other People's Emotions	-0,199**	-0,296**	-0,142**	-0,303**
Understanding Your Own Emotions	0,110*	-0,196**	-0,315**	-0,076
Managing Your Own Emotions	-0,057	-0,307**	-0,266**	-0,237**
Control of Expression	0,200**	-0,160**	-0,331**	-0,019
Interpersonal Emotional Intelligence	-0,291**	-0,388**	-0,167**	-0,411**
Intrapersonal Emotional Intelligence	0,099	-0,288**	-0,389**	-0,148**
Understanding Emotions	-0,124*	-0,374**	-0,303**	-0,315**
Emotion Management	-0,055	-0,356**	-0,327**	-0,272**
Overall Level of Emotional Intelligence	-0,101	-0,400**	-0,344**	-0,323**

Note: * $p<0.05$; ** $p<0.01$

The scales "Second-signal" and "Signal coefficient" negatively correlate with all components of emotional intelligence ($p<0.01$). The data obtained may indicate that the components of the second signal system are likely more connected with emotional intelligence than the components of the first signal system (tab. 3).

The level of analytical and synthetic activity also negatively correlates with "Understanding other people's emotions" ($r=-0.420$, $p<0.01$), "Managing other people's emotions" ($r=-0.303$, $p<0.01$), "Managing your own emotions" ($r=-0.237$, $p<0.01$), "Interpersonal emotional intelligence" ($r=-0.411$, $p<0.01$), "Intrapersonal emotional intelligence"

(r=-0.148, p<0.01), “Understanding emotions” (r=-0.315, p<0.01), “Emotion management” (r=-0.272, p<0.01), “Overall level of emotional intelligence” (r=-0.323, p<0.01) (tab. 3). The data obtained may indicate that the ability of a person to analyze and systematize the information received is important for the manifestation of a high level of emotional intelligence.

Conclusion

Currently, psychological research has yet to reach a unified understanding of the nature and structure of emotional intelligence. In general terms, emotional intelligence is defined as the ability to recognize, understand, and manage one’s own emotions as well as the emotions of others. Its psychophysiological foundations are rooted in two key mechanisms: general emotionality and cognitive abilities.

From a neurophysiological perspective, general emotionality and emotional stability are supported by the activity of the limbic system, cortical regulation, physiological reactivity, and individual properties of the nervous system. Cognitive aspects of emotional intelligence are linked to the speed of information processing, with studies showing correlations between so-called “speed intelligence” and electrophysiological indicators. Research has also revealed that the speed at which individuals recognize various types of emotional stimuli depends on these cognitive characteristics (Anokhina, 2018).

These findings suggest a relationship between components of emotional intelligence and the functioning of the brain’s signal systems. The development of emotional intelligence requires the coordinated functioning of both the first and second signal systems, as well as effective interhemispheric communication. Notably, the second signal system – associated with language and abstract thinking – shows a stronger connection to emotional intelligence than the first, which is linked to sensory and emotional responses.

Furthermore, traits such as self-regulation, analytical thinking, willpower, and self-esteem are positively associated with high levels of emotional intelligence. In contrast, a low level of emotional intelligence is often accompanied by heightened emotional reactivity, increased imagination, and elevated anxiety.

Advancing our understanding of the brain mechanisms underlying emotional phenomena and emotional intelligence depends heavily on neuropsychological research. Such studies are essential for clarifying the specific roles of various brain structures in generating and regulating emotional responses and states.

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