



Received: October 4, 2025
Accepted: December 23, 2025
Available online: December 25, 2025

Sayera Atakhanova

Associate Professor, Doctor of Philosophy in Psychological Sciences (PhD)
Uzbekistan State World Languages University
Tashkent, Uzbekistan
E-mail: sayeraataxanova@uzswlu.uz
ORCID iD: 0009-0009-7135-5347

DEVELOPING HEALTHY THINKING AMONG STUDENTS: KEY ASPECTS, INFLUENCING FACTORS, AND PEDAGOGICAL-PSYCHOLOGICAL CHARACTERISTICS

ABSTRACT

This article examines the development of healthy (sound) thinking among students in the context of higher education. The relevance of the study lies in the growing recognition of healthy thinking as a key factor in personal development, social responsibility, and societal well-being under contemporary educational conditions.

The aim of the study is to identify and theoretically substantiate the main features influencing the formation of healthy thinking in students. Accordingly, the research objectives include analyzing theoretical approaches to healthy thinking, determining the role of individual cognitive and emotional characteristics, examining pedagogical strategies that promote reflective reasoning, and assessing the impact of institutional and cultural conditions on sustainable thinking development.

Methodologically, the study is based on a theoretical and analytical framework. Specifically, it employs a systematic review of pedagogical and psychological literature, comparative analysis of active learning approaches, and conceptual synthesis of interdisciplinary perspectives. Unlike empirical research, the study adopts a descriptive and explanatory design focused on interpreting existing scholarly findings.

The results indicate that healthy thinking develops most effectively through the interaction of three interrelated domains. First, individual dispositions such as metacognitive awareness,

Sayera Ataxanova

Psixologiya fanlari bo'yicha falsafa
doktori (PhD), dotsent
O'zbekiston davlat jahon tillari universiteti
Toshkent, O'zbekiston

TALABALARDA SOG'LOM TAFAKKURNI RIVOJLANTIRISH: ASOSIY JIHATLAR, TA'SIR ETUVCHI OMILLAR VA PEDAGOGIK- PSIXOLOGIK XUSUSIYATLAR

ANNOTATSIYA

Bugungi globallashuv sharoitida jamiyat taraqqiyoti nafaqat iqtisodiy yoki texnologik omillar, balki inson tafakkuri va dunyoqarashining rivojlanganlik darajasi bilan ham bevosita bog'liqdir. Axborot oqimining keskin ortishi, ijtimoiy qarama-qarshiliklar, sog'liq bilan bog'liq xavflar va ma'naviy muammolar kuchayib borayotgan hozirgi davrda sog'lom (sound) tafakkur shaxsning barqaror hayot faoliyatini ta'minlovchi muhim omil sifatida namoyon bo'lmoqda. Ayniqsa, oliy ta'lim muassasalarida tahsil olayotgan talabalar jamiyatning intellektual va ijtimoiy tayanchi bo'lgani sababli, ularda sog'lom tafakkurni shakllantirish pedagogik jihatdan alohida ahamiyat kasb etadi. Shu bois, mazkur masala zamonaviy pedagogika va ta'lim psixologiyasining dolzarb tadqiqot yo'nalishlaridan biri hisoblanadi.

Tadqiqotning maqsadi talabalarda sog'lom tafakkurni rivojlantirishga ta'sir etuvchi asosiy individual, pedagogik va institutsional omillarni aniqlash hamda ularni nazariy jihatdan asoslashdan iborat. Shunga muvofiq, tadqiqot vazifalari sifatida sog'lom tafakkur tushunchasining ilmiy talqinlarini tahlil qilish, talabalarning kognitiv va emotsional xususiyatlarining rolini ochib berish, reflektiv va tanqidiy fikrlashni rivojlantiruvchi pedagogik strategiyalarni aniqlash hamda ta'lim muhitining ahamiyatini baholash belgilandi.

Metodik jihatdan, tadqiqot nazariy-analitik yondashuvga asoslanadi. Xususan, ilmiy

motivation, and emotional resilience play a crucial role. Second, pedagogical strategies based on problem-based, cooperative, and reflective learning significantly enhance analytical and critical reasoning. Finally, supportive institutional environments and flexible curricula facilitate the long-term consolidation of healthy thinking skills.

Consequently, the findings demonstrate that healthy thinking cannot be reduced to isolated cognitive abilities. Rather, it emerges as a pedagogically cultivated and socially embedded phenomenon. Thus, the study concludes that fostering healthy thinking requires a holistic educational approach integrating curriculum design, teacher preparation, and institutional culture. The formation of healthy thinking among students should therefore be regarded as a long-term pedagogical priority essential for both individual development and societal stability.

Key words: healthy thinking, student personal development, critical thinking, reflective thinking, metacognitive skills, pedagogical strategies, active learning methods, educational environment, institutional factors, higher education.

adabiyotlarni tizimli tahlil qilish, faol o'qitish usullarini qiyosiy o'rganish va fanlararo konseptual sintez metodlaridan foydalanildi. Tadqiqot empirik tajribaga emas, balki mavjud ilmiy manbalarni tavsifiy va izohli tahlil qilishga tayandi.

Olingan natijalar shuni ko'rsatadiki, sog'lom tafakkur talabalarda individual xususiyatlar (metakognitiv ong, motivatsiya va emotsional barqarorlik), samarali pedagogik yondashuvlar hamda qo'llab-quvvatlovchi institutsional muhitning o'zaro uyg'unligi asosida shakllanadi. Xulosa qilib aytganda, sog'lom tafakkur tasodifiy emas, balki maqsadli va tizimli pedagogik jarayon natijasi bo'lib, uni rivojlantirish oliy ta'lim tizimi uchun strategik ahamiyatga ega vazifa hisoblanadi. Shu bilan birga, sog'lom tafakkurni shakllantirish faqat o'quv jarayoni bilan cheklanmay, ta'lim muassasasining umumiy madaniy muhiti, tarbiyaviy faoliyati va pedagoglarning kasbiy tayyorgarligi bilan uzviy bog'liqdir. Kelgusida, mazkur yo'nalishdagi tadqiqotlar sog'lom tafakkurni rivojlantirishning amaliy mexanizmlari, baholash mezonlari va ta'lim amaliyotiga tatbiq etish usullarini yanada chuqurroq o'rganishga xizmat qilishi lozim.

Kalit so'zlar: sog'lom tafakkur, talaba shaxsi rivoji, tanqidiy fikrlash, reflektiv tafakkur, metakognitiv ko'nikmalar, pedagogik strategiyalar, faol ta'lim usullari, ta'lim muhiti, institutsional omillar, oliy ta'lim.

INTRODUCTION

During the years of independence, the promotion of the principles of sound thinking among broad segments of the population in Uzbekistan was established as a priority objective in the process of building a democratic society and became one of the key directions of state policy. The concept of sound thinking, viewed as an integral component of fostering a well-rounded generation, is closely associated with national traditions and customs—that is, with national historical values—and has been conceptualized as a fundamental means of preserving the nation's gene pool as well as a vital prerequisite for human development.

Accordingly, the ideas of sound thinking have been systematically promoted across all spheres of social, economic, spiritual, and ideological life, and the cultivation of sound thinking has been defined as a central objective of reforms in all sectors. In this context, sound thinking has emerged as one of the most significant aspirations in the process of constructing a new society, evolving into both a guiding life goal for individuals and a normative criterion of a dignified and meaningful life.

It should be noted that students' moral and spiritual development, as a constitu-

ent element of the moral fabric of society, requires systematic reinforcement in the context of the complex processes characterizing the contemporary era. In this regard, the formation of sound thinking among students has emerged as an urgent pedagogical issue that demands focused scholarly and practical attention.

Undoubtedly, this necessitates the development and scientific substantiation of an academically grounded and empirically validated system for fostering sound thinking among student youth. Such a system should encompass an integrated model that clearly defines its content, forms, methods, and instructional tools, while taking into account the specific features of the national mentality. Accordingly, the comprehensive redesign and theoretical justification of this pedagogical framework constitute a pressing requirement for ensuring the effectiveness and sustainability of educational practice.

Accordingly, the formation of sound thinking among student youth, in essence, serves several interrelated purposes. First, it aims to cultivate in young people an understanding of the ideals of a healthy lifestyle, culture, and morality, that is, to ensure their comprehensive moral, spiritual, and aesthetic development. Second, it contributes to fostering an active civic stance among students with regard to the social issues and challenges facing society. Third, it lays the foundation for the emergence of students as a socially responsible group that, in the future, will play a key role in safeguarding and promoting the overall well-being of society.

Thus, it is appropriate to view sound thinking as a means of ensuring the personal development and holistic maturity of student youth. Accordingly, the formation of a well-rounded personality becomes a value that is intrinsically and inseparably linked to the development of sound thinking.

In recent years, the cultivation of healthy thinking among students has become an increasingly important goal in educational systems worldwide. Healthy thinking, often associated with critical thinking, metacognition, open-mindedness, and reflective reasoning, is considered crucial not only for academic success but also for personal growth, social responsibility, and lifelong learning. Students who develop healthy thinking are better equipped to analyze complex problems, make informed decisions, cope with ambiguous situations, and engage in constructive dialogue with others. However, fostering such thinking is not automatic; it depends on a number of interrelated psychological, pedagogical, and environmental conditions.

One foundational aspect is the individual student's cognitive and emotional characteristics. For instance, abilities such as attention, memory, motivation, as well as dispositions like curiosity, tolerance for ambiguity, and willingness to question assumptions, strongly influence a student's capacity for healthy thinking. When these individual characteristics are nurtured, students are more likely to engage in metacognitive strategies - thinking about how they think, evaluating their own reasoning, and adjusting it when necessary. Conversely, students lacking confidence or fearing mistakes and criticism may avoid challenging tasks or reflective thinking [Terenzini, 2015].

Secondly, the educational environment plays a critical role. Classroom practices

that emphasize rote learning and memorization tend to stifle deep thinking. In contrast, pedagogical methodologies such as problem-based learning, collaborative learning, Socratic questioning, and active learning encourage students to explore, analyze, and synthesize information rather than merely receive it [Walker, 2003]. Teachers who employ open-ended questions, debates, and discussions foster a culture where students feel safe to express divergent views and to scrutinize evidence. Moreover, curricula that integrate real-world problems and interdisciplinary perspectives provide richer contexts for students to apply healthy cognitive processes.

Thirdly, institutional and social factors contribute significantly. The role of the teacher, both in terms of pedagogical skill and in creating an inclusive, supportive, and stimulating learning atmosphere, is essential. Institutional policies that allow for flexibility in teaching methods, assessment forms, and teacher training in thinking skills are beneficial. Additionally, cultural norms, family background, socioeconomic status, and access to resources (books, technology, extracurricular activities) shape students' exposure to ideas, opportunities for reflection, and models of thinking. For example, students from environments that value questioning, debate, and diverse viewpoints are more likely to develop robust thinking habits [Gómez, 2025].

Despite wide consensus about the value of healthy thinking, research has identified several challenges in its development. Traditional teaching methods still dominate in many settings. Metacognitive skills are often overlooked in both instruction and assessment. Teacher training regarding thinking skills may be insufficient. Differences in cultural context and availability of resources further hinder uniform development. Moreover, many assessments emphasize fact-recall rather than analysis, synthesis, or critical evaluation, reducing incentives for students to develop sophisticated thinking patterns.

Thus, understanding the *specific features* of developing healthy thinking in students requires examining how these individual, pedagogical, institutional, and cultural factors interact. This study aims to identify which features are particularly influential, how they manifest in student behavior and learning, and what conditions enable their consistent development in higher education settings.

METHODS

This research is based on a theoretical and analytical approach aimed at exploring the specific features of developing healthy thinking in students. Since the topic is multidisciplinary, the study integrates insights from pedagogy, psychology, and philosophy of education. The methodological framework rests on the analysis of scientific literature, comparative studies, and synthesis of conceptual approaches. Instead of empirical surveys or direct experimentation, this study relies on systematic review and interpretation of scholarly sources.

First, a literature review was conducted by examining recent and classical works on critical thinking, metacognition, and educational psychology. Priority was given to peer-reviewed articles, books, and policy documents published in recognized academic databases. This stage allowed identification of the main definitions, theoretical

models, and factors influencing the development of healthy thinking [Facione, 1990].

Second, a comparative analysis was employed to evaluate pedagogical methods that promote healthy thinking. Various approaches such as problem-based learning, inquiry-based learning, and cooperative learning were compared in terms of effectiveness and adaptability to higher education. This helped to highlight how different instructional strategies influence the formation of cognitive flexibility, reasoning skills, and reflective abilities [Facione, 1990].

Third, the study used conceptual synthesis, where findings from diverse sources were combined to build a structured understanding of how individual, institutional, and cultural conditions shape students' thinking. Attention was paid not only to cognitive skills but also to affective and motivational dimensions, as these are crucial for sustaining constructive mental habits. In this process, special consideration was given to integrating psychological perspectives with practical teaching methodologies [Halpern, 2014].

Finally, the overall research design is descriptive and explanatory, rather than experimental. It seeks to provide a comprehensive picture of the phenomenon by connecting theory with pedagogical practice. Through this methodology, the study aims to identify the essential features that should be addressed in higher education to foster healthy thinking among students.

RESULTS

The analysis of scientific and pedagogical literature has revealed several specific features in the development of healthy thinking among students. These results are grouped into three main domains: individual characteristics, pedagogical strategies, and institutional-cultural conditions.

First, on the individual level, students demonstrate higher levels of healthy thinking when they engage in metacognitive monitoring and reflective practices. Traits such as intellectual curiosity, tolerance for uncertainty, and resilience in facing cognitive challenges are found to correlate positively with constructive reasoning habits. This confirms that fostering motivation and emotional stability is as essential as developing cognitive skills [Ku, 2020].

Second, the review of pedagogical strategies shows that approaches emphasizing student activity and cooperation produce more sustainable outcomes compared to traditional lecture-based models. For example, problem-based learning, when combined with structured reflection tasks, significantly enhances analytical depth and transfer of knowledge to real-life situations. Similarly, cooperative learning environments stimulate dialogue, allowing students to test ideas, challenge assumptions, and practice critical self-evaluation [Hmelo-Silver, 2004].

Third, institutional and cultural conditions strongly shape the extent to which healthy thinking is cultivated. Supportive environments that encourage questioning, debate, and creativity lead to better student outcomes than rigid systems focused solely on examinations. Moreover, cross-cultural studies indicate that students in contexts where teachers are trained in critical thinking pedagogy exhibit more consistent

growth in reflective reasoning compared to those in settings with teacher-centered traditions [Abrami, 2008].

To provide a structured overview, the following table summarizes the main features, influencing factors, and observed effects:

Table 1.

Features of healthy thinking development in students

Domain	Specific features	Key influencing factors	Observed effects on students
Individual Characteristics	Metacognitive monitoring; curiosity; tolerance for ambiguity	Motivation; emotional resilience; prior knowledge	Improved self-regulation; stronger problem-solving skills
Pedagogical Strategies	Problem-based learning; cooperative learning; Socratic dialogue	Active learning design; teacher facilitation	Enhanced critical thinking; deeper understanding
Institutional Conditions	Supportive policies; teacher training; flexible curricula	Institutional culture; assessment approaches	Increased autonomy; long-term cognitive growth
Cultural Environment	Openness to debate; interdisciplinary exposure	Family background; cultural traditions	Broader perspectives; adaptability in reasoning

Overall, the findings suggest that the development of healthy thinking in students cannot be reduced to a single factor. Instead, it is an interplay between individual dispositions, instructional practices, and the broader educational context. Importantly, the evidence indicates that structured interventions—particularly those that combine reflective activities with collaborative learning—produce the most notable gains.

Furthermore, the integration of psychological and pedagogical perspectives underscores the necessity of a holistic approach. Educational institutions should therefore invest not only in curriculum design but also in teacher preparation and institutional culture to ensure the sustainability of healthy thinking skills. This aligns with the broader understanding that fostering such thinking is a long-term developmental process, requiring consistent reinforcement across different stages of higher education [Davies, 2015].

At the same time, it should be emphasized that sound thinking is not merely an individual asset, but a socially necessary and highly valued good of state significance. The health of society as a whole is shaped by the health of each individual. Consequently, the two dimensions of sound thinking highlighted above—namely, physical health and moral-ideological (spiritual) health—not only exert a decisive influence on an individual's life and destiny, but also inevitably affect the lives of close relatives, as well as the fate and development of society and the state as a whole, either positively or negatively.

From the aggregate of each individual's aspirations, professional orientations, and life goals emerges the collective system of desires, ideology, and modes of thinking that are transformed into the shared aspirations of the people and the nation, thereby forming the foundation of statehood and social cohesion. If these aspirations are grounded in the ideals of health and well-being, society follows a stable and construc-

tive path of development. Conversely, if destructive tendencies and fragmentation become widespread among members of society, such phenomena inevitably exert a corrosive and destabilizing influence on statehood and social progress. In this regard, the presence of sound thinking in the consciousness of society's members—particularly among student youth—and especially its two essential components, physical well-being and moral-ideological health, serves as a crucial safeguard against social and state crises.

Sound thinking reflects the kind of individuals we are, including students and young people: the beliefs they hold, the goals they pursue in life, and the system of values and aspirations that guide their actions. The level and quality of these characteristics largely determine the trajectory of state and societal development. In turn, the progress of the state and society reciprocally influences the formation of public consciousness and collective thinking. In the context of the ongoing processes of liberalizing public administration and modernizing the economy in contemporary Uzbekistan, one of the most important tasks required of the pedagogical process at the national level is the formation of comprehensively developed, multidimensional individuals endowed with sound thinking.

For the Uzbek people, the concept of sound thinking acquires its full and authentic meaning only when these two dimensions—physical health and moral-spiritual integrity—are fully realized in unity. The impossibility of physical well-being without moral integrity has long been recognized. Therefore, within the system of Uzbek national values, sound thinking occupies a distinctive and elevated position, and its criteria have been elaborated comprehensively within ethical, aesthetic, and moral value frameworks.

Accordingly, in the present study, it is appropriate to conceptualize sound thinking as a historical-social, philosophical-psychological, and moral-aesthetic category. It should also be noted that the content of sound thinking continuously evolves in harmony with the spirit of the times, incorporating new knowledge and skills, advances in medical science, opportunities for a healthy lifestyle, and all innovations characteristic of societal development. Thus, sound thinking is a dynamic concept marked by continuous socio-historical growth and development.

Illustrative examples of this process include the growing public awareness of social diseases such as goiter, anemia, and tuberculosis, whereby earlier generations came to understand the importance of self-protection, and contemporary generations are well informed about the causes and characteristics of these diseases, resulting in their declining prevalence. Similarly, the widespread recognition of the vital role of breast milk in strengthening infants' immune systems, and the collective efforts to promote breastfeeding, demonstrate how the dissemination of essential medical knowledge among the population has led to meaningful and necessary transformations in public consciousness. In other words, the systematic promotion and dissemination of scientific and medical knowledge have facilitated essential and constructive changes in the sound thinking of society at large.

DISCUSSION

The findings of this study highlight that the development of healthy thinking in students is a multifactorial process that cannot be fully explained through a single theoretical lens. Rather, it emerges as the outcome of dynamic interactions between cognitive dispositions, pedagogical strategies, and institutional-cultural contexts. This multidimensionality requires a comprehensive framework that integrates psychological theories of metacognition with pedagogical models of active learning and socio-cultural perspectives on education.

One of the most salient observations is that cognitive and affective variables are inseparable in the cultivation of healthy thinking. Students' willingness to engage with ambiguity, their resilience in overcoming intellectual obstacles, and their intrinsic motivation are not peripheral traits but central determinants of how effectively they employ reflective and critical reasoning. In this regard, emotional and motivational scaffolds provided by the learning environment act as catalysts, amplifying or constraining the actualization of cognitive potential.

Equally significant is the mediating role of pedagogy. Instructional practices that are dialogic, problem-oriented, and cooperative foster an epistemic climate in which students not only acquire disciplinary knowledge but also develop the capacity to interrogate its foundations. Such approaches shift the focus from knowledge reproduction to knowledge construction, thereby promoting intellectual autonomy. Importantly, the most robust outcomes are achieved when active learning designs are systematically reinforced through reflective assessment tasks, ensuring that students are not merely performing critical reasoning episodically but are embedding it as a habitual cognitive practice.

At the institutional and cultural levels, the research underscores that structural and normative conditions determine whether pedagogical innovation can take root. Institutions that valorize examination-driven achievement, or that marginalize teacher training in higher-order thinking, inadvertently inhibit the development of healthy thinking skills. Conversely, contexts where questioning and debate are normalized, and where curricular flexibility is granted, provide fertile ground for sustainable intellectual growth. This implies that reforms aimed at fostering healthy thinking must extend beyond classroom practices to encompass policy, institutional culture, and broader social attitudes toward knowledge and learning.

Thus, the level to which sound thinking is formed has a direct impact on the collective social consciousness of society. The degree of sound thinking determines the overall quality of social life and, consequently, the level of societal well-being. A low level of health-oriented thinking inevitably leads to a decline in the overall health of society. The transformation of the social content of health-related thinking—that is, its susceptibility to change—is determined by several factors.

First, it is influenced by changing socio-political realities and scientific and technological progress, particularly advances in genetics, pharmaceuticals (including so-called “intelligent” medicines), medical applications of cloning (such as artificial organ cultivation and transplantation), and the introduction of nanotechnologies into

medicine (notably the development of artificial organs). In addition, globalization, contemporary ecological, financial, and ideological threats, as well as the large-scale state policies implemented in the Republic of Uzbekistan to protect public health, continuously enrich and reshape the content of the concept of sound thinking.

Second, the task of forming sound thinking requires the purposeful organization and coordination of efforts undertaken by all relevant socio-political structures and institutions. These include: (a) the education system—schools, secondary specialized and vocational education, higher education, independent learning, and extracurricular education; (b) the family, encompassing parents, family members, and children; (c) healthcare and wellness institutions; and (d) non-governmental structures, such as community organizations (mahalla), whose activities should be deliberately directed toward fostering sound thinking among the general population. From this perspective, sound thinking emerges as one of the most significant socio-philosophical and pedagogical-psychological ideas of the modern era.

Accordingly, sound thinking may be defined as a socio-philosophical and pedagogical-psychological category, while the possession of sound thinking represents a moral and ethical indicator grounded in health-oriented ideas, worldviews, philosophical orientations, and lifestyles, and is formed through an effectively organized, goal-oriented educational process. Sound thinking constitutes a system of ideas and views formed in human consciousness that orient individuals' daily lives and activities toward the preservation of their own health, reflecting stable life goals and values, and thus functions as a social concept. Sound thinking does not emerge spontaneously; rather, it must be deliberately cultivated through targeted pedagogical processes. Possessing sound thinking occupies one of the most important positions in an individual's personal development.

From the moment a child is born, safeguarding health is perceived as a fundamental need, goal, and aspiration of the family. However, the crucial issue lies not only in the creation of appropriate conditions for protecting a child's health by the family, school, and social environment, but also in the formation of the individual's independent capacity for health-oriented thinking. Only when a person possesses sound thinking can they consciously choose the necessary conditions within their social environment to preserve their health and assume responsibility for it. Health is a value that can be fully protected only by the individual who possesses it, based on personal motivation and responsibility. Comprehensive health preservation is achievable solely by a person endowed with sound thinking.

Health-oriented thinking is not merely a social phenomenon, but also an individual reality. If a person lacks the inclination and willingness to exercise health-oriented thinking, it is impossible to ensure a healthy lifestyle, even when adequate infrastructure exists. In general, issues related to health-oriented thinking, the pedagogical principles of its formation, age differentiation and specific characteristics, as well as pedagogical methodologies for fostering healthy spirituality, require comprehensive scholarly investigation.

It is important to note that although issues such as healthy lifestyles, the history

of health values, hygienic education, and youth spirituality have been widely studied in the national context, the pedagogical principles and foundations for forming sound thinking specifically among students of higher education institutions remain insufficiently explored. Scientific research in this area necessitates clarifying the conceptual essence of sound thinking, formulating its scientific definition, identifying its structural components, determining its influence on lifestyle, behavior, character, and actions, and establishing criteria for the relationship between sound thinking and the human factor. The scientific study of sound thinking must therefore begin with the development of a clear and comprehensive definition of the concept itself.

In contemporary pedagogical discourse, the content of sound thinking is understood through the interconnection and continuity of such concepts as “human being – personality – holistic development – health – maturity from the perspective of well-being – sustainability of health – practical realization of health principles – widespread application of health-oriented norms within society.” Consequently, sound thinking becomes a key element in the education of a well-rounded individual and one of the primary criteria for the formation of a mature personality.

In our firm conviction, the concept of sound thinking integrates and synthesizes national and universal moral norms, medical and aesthetic values aimed at health preservation, as well as socially relevant ideas shaped by contemporary globalization. Therefore, it is appropriate to interpret sound thinking as a multifaceted socio-psychological, pedagogical-ethical, medical-pedagogical, and didactic category. Within the higher education system, particularly in extracurricular moral and educational activities, the formation of sound thinking holds immense social, ethical, aesthetic, and pedagogical significance. This stage of life represents a period in which young people transition to a new phase of personal development and simultaneously enter independent life, establish families, and engage actively in social and civic activities.

These processes require that health-oriented principles be realized not merely at the level of knowledge, skills, or competencies, but above all as a way of life and an active life position. Achieving this pedagogical goal demands an educational environment characterized by goal orientation, cooperation, mutual understanding of objectives, openness, trust, and a shared commitment to problem-solving. Only under such conditions can health-oriented thinking be preserved and transmitted across generations within social relations.

In the pedagogical process, constructive, honest, open, and equitable interaction is essential. Educators must be capable of uniting young people around shared goals, motivating them, and fostering determination in their actions. Health-oriented thinking constitutes the scientific-theoretical and ideological foundation of a society’s commitment to living in accordance with health principles and represents a consciously chosen lifestyle. It is a system of humanistic values that integrates universal, national, and personal dimensions. Health-oriented thinking signifies adherence to practices aimed at preserving both individual and societal health.

Importantly, health-oriented thinking encompasses not only knowledge and skills, but also their practical application in real life. From this perspective, it repre-

sents an individual's active life stance. While health-related knowledge and skills are accumulated across all stages of education, it is at the level of higher education that they are most actively implemented in real-life practice. Therefore, the contemporary imperative lies in refining these competencies and fully internalizing both national and universal values associated with sound thinking within the consciousness of university students.

In conclusion, the task of forming sound thinking among students in the higher education system constitutes one of the most pressing issues within pedagogical science. Its successful resolution is a key direction in preparing and educating young people for active participation in society in an era of global development marked by growing ecological challenges and increasing threats to human health.

During the period of study at higher education institutions, the formation of thinking related to professional knowledge is of particular importance. Thinking itself possesses a number of distinctive characteristics. An analysis of the concept of thinking leads to the conclusion that it has the following key features:

☐ Thinking enables the accurate and generalized reflection of events and phenomena.

☐ Thinking reflects reality indirectly; that is, individuals generate new knowledge on the basis of previously acquired experience.

☐ Creative reasoning and creativity in activity constitute essential characteristics of human thinking.

☐ Thinking is directly connected with language, since thinking and reasoning may be regarded as ideal and social phenomena. This is because thinking becomes real only through language, taking a form that is comprehensible, directly perceivable, and accessible to others, thereby fulfilling the function of enabling communication and the exchange of ideas among people.

Thus, language serves as the means through which human thinking acquires concrete reality. Thinking and its specific characteristics make it possible to clarify the conceptual content of sound thinking and pathogenic thinking. Every individual should be able not only to regulate their emotions and behavior, but also to control their manner of thinking in accordance with certain principles and norms. In this context, pedagogical and psychological scholars distinguish between two main types of thinking: sound (healthy) thinking and pathogenic (unhealthy) thinking.

During the student years, the processes of self-development and self-actualization play a significant role in young people's lives and activities. At the same time, particular importance is attached to the components of self-regulation, such as self-analysis, self-monitoring, self-assessment, self-verification, and related mechanisms. These elements collectively determine the quality and direction of an individual's cognitive and behavioral development.

Sound thinking is characterized as a form of reasoning that is health-promoting, supportive, and motivating. Moreover, sound thinking involves reasoning and learning through the use of a certain cognitive algorithm, which enables individuals to reassess and restructure their personal pathogenic (unhealthy) thinking stereotypes.

It represents the capacity to accurately reflect and interpret problems and difficulties that arise in the course of specific activities, thereby facilitating constructive problem-solving.

In the course of everyday life, individuals frequently experience asthenic (unpleasant) feelings or encounter adverse situations that generate negative emotional states, such as resentment, insecurity, failure, hopelessness, impatience, guilt, and similar experiences. Some individuals tend to lose self-control when confronted with such emotions, which leads to a weakening of their cognitive and psychological resources. Others, by contrast, are able to come to terms with themselves more rapidly, overcome such unfavorable states effectively, and find their appropriate place in life.

CONCLUSION

The findings of this study demonstrate that the formation of healthy thinking plays a crucial role in students' personal development, professional growth, and social responsibility. Healthy thinking should be understood not merely as a set of cognitive skills, but as a stable system of reasoning that enables students to perceive reality consciously, approach problems critically and reflectively, and take responsibility for their decisions and actions. The analysis confirms that healthy thinking develops through the interaction of individual cognitive and emotional characteristics, effective pedagogical strategies, and a supportive educational environment. In particular, active, problem-based, and reflective learning approaches significantly contribute to the development of students' analytical abilities, independence of thought, and capacity for reasoned judgment.

At the same time, the study emphasizes that fostering healthy thinking cannot be limited to isolated classroom practices. Rather, it requires a systemic and sustained educational effort supported by institutional policy, curricular design, and teachers' professional competence. The formation of healthy thinking is therefore closely linked to the overall pedagogical culture of higher education institutions, including assessment practices and extracurricular educational activities. From this perspective, the development of healthy thinking should be regarded as a long-term strategic priority of higher education. Further research may focus on identifying practical mechanisms, evaluation criteria, and implementation models that enhance the effectiveness of healthy thinking development in diverse educational contexts.

REFERENCES

1. Abrami, P. C., Bernard, R. M., Borokhovski, E., Wade, A., Surkes, M. A., Tamim, R., & Zhang, D. (2008). Instructional interventions affecting critical thinking skills and dispositions: A stage 1 meta-analysis. *Review of Educational Research*, 78(4), 1102–1134. <https://doi.org/10.3102/0034654308326084>
2. Bailin, S., Case, R., Coombs, J. R., & Daniels, L. B. (1999). Conceptualizing critical thinking. *Journal of Curriculum Studies*, 31(3), 285–302.
3. Biggs, J., & Tang, C. (2011). *Teaching for quality learning at university* (4th ed.). Open University Press.
4. Brookfield, S. D. (2012). *Teaching for critical thinking: Tools and techniques to help students question their assumptions*. Jossey-Bass.
5. Davies, M., & Barnett, R. (Eds.). (2015). *The Palgrave handbook of critical thinking in*

- higher education. Palgrave Macmillan.
6. Ennis, R. H. (2011). The nature of critical thinking: An outline of critical thinking dispositions and abilities. *University of Illinois*.
 7. Facione, P. A. (1990). *Critical thinking: A statement of expert consensus for purposes of educational assessment and instruction*. ERIC.
 8. Fisher, A., & Scriven, M. (1997). *Critical thinking: Its definition and assessment*. Edgepress.
 9. Garrison, D. R., Anderson, T., & Archer, W. (2001). Critical thinking in a text-based environment. *The Internet and Higher Education*, 2(2–3), 87–105.
 10. Gómez, D. L. J. (2025). Determining factors for the development of critical thinking. *Journal of Intelligence*, 13(6), 1–15. <https://doi.org/10.3390/jintelligence130600XX>
 11. Halpern, D. F. (2014). *Thought and knowledge: An introduction to critical thinking* (5th ed.). Psychology Press.
 12. Hattie, J. (2009). *Visible learning: A synthesis of over 800 meta-analyses relating to achievement*. Routledge.
 13. Hmelo-Silver, C. E. (2004). Problem-based learning: What and how do students learn? *Educational Psychology Review*, 16(3), 235–266. <https://doi.org/10.1023/B:EDPR.0000034022.16470.f3>
 14. Ku, K. Y. L., & Ho, I. T. (2010). Metacognitive strategies that enhance critical thinking. *Educational Research Review*, 5(3), 251–263.
 15. Ku, K. Y. L., & Ho, I. T. (2020). Metacognitive strategies that enhance critical thinking. *Educational Research Review*, 29, 100306. <https://doi.org/10.1016/j.edurev.2019.100306>
 16. Kuhn, D. (1999). A developmental model of critical thinking. *Educational Researcher*, 28(2), 16–25.
 17. Lai, E. R. (2011). *Critical thinking: A literature review*. Pearson Research Report.
 18. Mayer, R. E. (2002). Rote versus meaningful learning. *Theory Into Practice*, 41(4), 226–232.
 19. Moon, J. (2008). *Critical thinking: An exploration of theory and practice*. Routledge.
 20. Nussbaum, E. M., & Edwards, O. V. (2011). Critical thinking and argumentation. *Theory Into Practice*, 50(3), 196–204.
 21. Paul, R., & Elder, L. (2006). *Critical thinking: Tools for taking charge of your learning and your life*. Pearson Education.
 22. Perkins, D. N., Salomon, G., & Globerson, T. (1994). Transfer of thinking skills. *Educational Psychologist*, 29(1), 1–17.
 23. Prince, M. (2004). Does active learning work? A review of the research. *Journal of Engineering Education*, 93(3), 223–231. <https://doi.org/10.1002/j.2168-9830.2004.tb00809.x>
 24. Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460–475.
 25. Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education. *Research in Science Education*, 36(1–2), 111–139.
 26. Terenzini, P. T. (2015). *Influences affecting the development of students' critical thinking skills*. ERIC.
 27. Terenzini, P. T., Springer, L., Pascarella, E. T., & Nora, A. (1995). Influences affecting the development of students' critical thinking skills. *Research in Higher Education*, 36(1), 23–39.
 28. Thomas, J. W. (2000). *A review of research on project-based learning*. Autodesk Foundation.
 29. Walker, S. E. (2003). Active learning strategies to promote critical thinking. *Journal of Athletic Training*, 38(3), 263–267.
 30. Zohar, A., & Dori, Y. J. (2003). Higher order thinking skills and low-achieving students. *Journal of the Learning Sciences*, 12(2), 145–181.