

Eureka Journal of Humanities and Social Research (EJHSR)

ISSN 2760-4934 (Online) Volume 2, Issue 5, May 2026



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THE ROLE OF ANCIENT PHILOSOPHY IN DEVELOPING CRITICAL THINKING IN STUDENTS

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Abstract

The article analyzes the importance of ancient Greek philosophy - the teachings of Socrates, Plato and Aristotle - in the modern education system in developing critical thinking skills in students. The role of the Socratic method (elenchos and maieutics), Platonic dialectics and Aristotelian logic in modern pedagogy is highlighted. Today, in the age of artificial intelligence, educational models built on the basis of ancient methods (Socratic AI, Socratic chatbot) are also considered. The ancient philosophical heritage and its role in the formation of critical thinking in the context of the digitalization of higher education in Uzbekistan are assessed.

Keywords : Ancient philosophy, critical thinking, Socratic method, elenchos, maieutics, Plato's dialectics, Aristotle's logic, higher education, artificial intelligence, digital pedagogy.

Introduction

Growth of information flows, the development of digital technologies, and the widespread spread of disinformation, the issue of developing students' critical thinking skills has become an urgent problem. Critical thinking has been recognized by UNESCO as a key component of the 21st century skills in the 2030 Sustainable Development Goals. As noted in the study by S. Lee et al., critical

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thinking plays an important role in the lifelong development of students and is one of the key competencies in education for sustainable development ¹. In this regard, there is a need to turn to the historical roots of critical thinking. Modern researchers (JYF Lau, S. Ibaguner) see the historical roots of the concept of critical thinking in ancient Greek philosophy, in particular, in the teachings of Socrates, Plato and Aristotle. The methods developed by ancient philosophers - dialectics, elenchos, syllogistics - still serve as the basis of critical pedagogy today. This article analyzes the role of ancient philosophy in the development of critical thinking in students on the basis of modern research.

1. The concept of critical thinking and its historical roots

Critical thinking is the ability to analyze, evaluate, draw informed conclusions, and make decisions based on available information. There are different views on the formation of this concept in the scientific literature. According to JYF Lau's study published in the journal *Educational Philosophy and Theory* in 2024, there are two common views on the origin of critical thinking: the first is that the concept of critical thinking began with Socrates and his method of asking questions; the second is that the term "critical thinking" was first introduced by John Dewey in 1910 in his book *How We Think* ². This author criticizes both views and shows that the concept has deeper roots. Nevertheless, most researchers continue to consider the Socratic method as the direct basis of critical thinking pedagogy.

S. Ibaguner's study published in November 2024 emphasizes that the teachings of Socrates, Plato, and Aristotle continue to play a key role in shaping educational theory and practice today; their approaches laid the foundation for critical

¹Li S., Tang S., Geng X., Liu Q. Constructing a critical thinking evaluation framework for college students majoring in the humanities // *Frontiers in Psychology*. — 2022. — Vol. 13: 1017885. DOI: 10.3389/fpsyg.2022.1017885.

²Lau JYF Revisiting the origin of critical thinking // *Educational Philosophy and Theory*. — 2024. — Vol. 56, Issue 8. — P. 724–733. DOI: 10.1080/00131857.2024.2320199.

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pedagogy through dialectics, elenchos, and inductive logic³. Thus, the ancient philosophical heritage is an integral part of the modern education system.

2. The Socratic method is the basis for the formation of critical thinking

2.1. Elenchos and maieutics

Socrates' (c. 470–399 BC) greatest contribution to the pedagogy of critical thinking is the method of dialogical questioning. This method consists of two interconnected parts : elenchos (Greek: ἔλεγχος — to refute, to test) — a critical examination of the interlocutor's views through questions and answers and the disclosure of their internal contradictions; maieutics (Greek: μαιευτική — the art of giving birth) — the spontaneous emergence of knowledge hidden in the student through questions. L. Favero and co-authors, in their paper presented at the ECAI'24 conference in Santiago de Compostela in 2024, argue that the Socratic method develops critical thinking by forcing students to question their assumptions, explain their thoughts, and reevaluate their concepts⁴.

is used in various forms, such as the Socratic Circle, the Socratic Seminar, and Philosophy for Children (P4C) . These methods develop the skills of open discussion among students, defending their own views, and critically approaching the views of others .

2.2. Aporia and intellectual humility

An important stage of the Socratic method is the state of aporia , that is, the student's realization that his knowledge is insufficient and falling into a state of bewilderment. In a study published in 2025 in the journal “The International Journal of the Platonic Tradition” by G. Stamatellos, the state of aporia is considered a fundamental condition for the development of critical thinking: only

³Ibaguner S. Philosophical Perspectives of Socrates, Plato, Aristotle, Rousseau, Dewey, and Freire on Education: A Historical and Conceptual Analysis. — ResearchGate Preprint, November 2024. — P. 4–7.

⁴Favero L., Pérez-Ortiz JA, Käser T., Oliver N. Enhancing Critical Thinking in Education by Means of a Socratic Chatbot // ECAI'24: International Workshop on AI in Education and Educational Research. — Santiago de Compostela, Spain, October 2024. — P. 2-5.

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a student who understands the limits of his knowledge is ready to search for truth⁵. This author emphasizes that in today's environment of disinformation, the Socratic method is not only a moral but also an epistemological necessity - it gives students the ability to distinguish false information from truth.

3. Plato's dialectics and dialogic teaching

Plato (427–347 BC) developed the method of his mentor Socrates and proclaimed dialectic as the highest form of knowledge. According to a 2024 study by GE Adeboye, for Plato, education is a process of discovering the hidden knowledge within a person, which is carried out through dialogue and questions; therefore, Plato's educational methodology is aimed at arousing intellectual curiosity and developing the skills of critical self-reflection in the student⁶.

Plato's Academy was the first higher education institution in the West, where education was conducted in the form of dialogue, not lectures. Plato's famous "allegory of the cave" in his work "Gosudarstvo" is still one of the main metaphors of critical thinking pedagogy today: it shows students the limitations of their own views, and the need to go beyond the "shadows" in order to search for truth. S. Ibaguner emphasizes that this allegory of Plato also formed the basis of modern reflexive education theory.

4. Aristotelian logic and the empirical method

Aristotle (c. 384–322 BC) made two important contributions to the development of critical thinking: first, he created a system of formal logic and syllogistic reasoning; and second, he recognized empirical observation and experience as the basis of scientific knowledge. Aristotle established the rules of deductive

⁵Stamatellos G. Socratic Methodologies and Artificial Intelligence against Disinformation: A Philosophical Approach // The International Journal of the Platonic Tradition. — 2025. — Vol. 19, Issue 1. — P. 95–102. DOI: 10.1163/18725473-12341567.

⁶Adeboye GE Plato's Pursuit of Truth and Ideal Forms in Teaching and Learning. — ResearchGate, 2024. — P. 12–18.

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reasoning in his work "Analytics", which still form the basis of logic and critical thinking lessons today.

According to S. Ibaguner's analysis, if Plato considered the world of ideas to be the primary source of knowledge, Aristotle recognized sensory experience as a valid source of knowledge - therefore he is considered the founder of disciplinary sciences (logic, physics, ethics, rhetoric). The practical significance of Aristotelian logic for students is that it provides the ability to distinguish between correct and incorrect forms of thinking, identify logical errors (logical fallacies), and assess the strength of arguments. Almost all modern critical thinking training programs (for example, the model of R. Paul and L. Elder) are based on Aristotelian logic.

5. Application of ancient methods in modern higher education

5.1. In a traditional classroom setting

In modern higher education institutions, the methods of ancient philosophy are used in various forms. The most common forms are: the Socratic seminar, the "case study" method in the Harvard system, the "tutorial" system in Oxford and Cambridge (this system has its roots directly in Plato's Academy), and the classical Socratic method in legal education (in US law schools). As S. Ibaguner's research has noted, today in legal and humanities education, Socratic seminars and critical thinking pedagogy, liberal arts curricula, and Plato-level programs (basic skills → specialization → integrative final stage) are widely used.

5.2. Artificial intelligence and digital education

In the age of artificial intelligence (AI), ancient philosophical methods are finding new life. DE Pitorini, in his 2025 EADTU report, proposes a way to combine the classical Socratic method with large language models (LLMs) to develop critical

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thinking, metacognitive awareness, and deeper understanding ⁷. Such Socratic AI systems guide the student's thinking process by asking them flexible questions and helping them find the answers for themselves .

Similarly , a group of researchers led by L. Favero developed the Socratic Chatbot model and empirically proved its effectiveness in developing students' critical thinking. These studies show that the 2,500-year-old legacy of ancient philosophy has not lost its relevance in the age of artificial intelligence, but has found new meaning and practical application.

6. Using the heritage of ancient philosophy in higher education in Uzbekistan

In Uzbekistan, the Law “On Education” and the “Strategy of Actions for the Further Development of the Republic of Uzbekistan” identify the formation of independent and critical thinking skills in students as an important task. The textbook by S. Shermuhamedov, A. Ochildiev, and I. Rakhimov, published in 2023, notes the importance of the heritage of ancient philosophy in the Uzbek education system: the authors evaluate the Socratic method as one of the most effective methods for forming critical thinking for Uzbek students ⁸.

At the same time, it is necessary to note that in the Uzbek pedagogical tradition, the educational theories of such Eastern thinkers as Al-Farabi, Al-Biruni, Ibn Sina, and Alisher Navoi are ideologically close to ancient Greek philosophy. Al-Farabi's idea of achieving virtue through reason in his work "The Views of the Virtuous City" is directly related to Socratic intellectualism, and Ibn Sina's logic is directly related to Aristotelian syllogistic. Teaching by connecting these two cultural traditions can have a significant effect on the formation of critical thinking in Uzbek students.

⁷Pitorini DE Reviving the Socratic Method with AI: An Interdisciplinary Approach to Enhancing Critical Thinking in Distance Higher Education // EADTU Envisioning Report for Empowering Universities. — 2025. — No. 9. — P. 18–24. DOI: 10.5281/zenodo.15908735.

⁸Shermukhamedov S., Ochildiev A., Rakhimov I. Philosophy: Textbook for Higher Education Institutions. — New edition. — Tashkent: Publishing House of the National Society of Philosophers of Uzbekistan, 2023. — P. 112–125.

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In the context of adapting higher education in Uzbekistan to international standards, the methods of ancient philosophy - Socratic seminars, dialogical discussions, case studies, logical analysis exercises - should be widely introduced into the educational process. These methods transform the student from a passive listener into an active seeker, giving him the opportunity to make independent decisions, work with arguments, and justify his views.

Conclusion

Ancient Greek philosophy—the teachings of Socrates, Plato, and Aristotle—forms the historical and theoretical basis for the formation of critical thinking in students. The Socratic method (elenchos and maieutics) teaches students to understand the limits of their own knowledge and question their own views, while Platonic dialectics develops the desire for knowledge and the search for truth; Aristotelian logic provides the ability to distinguish correct forms of thinking and evaluate arguments.

Modern scientific research (JYF Lau 2024, S. Ibaguner 2024, L. Favero et al. 2024, G. Stamatellos 2025, DE Pitorini 2025) shows that ancient methods are not only a historical legacy, but also pedagogical tools that are relevant in the era of artificial intelligence and digital education. New teaching models such as Socratic AI and Socratic Chatbot are being created on their basis.

in Uzbekistan, connecting them with the traditions of the heritage of Eastern thinkers, is of great importance in forming critical, independent and creative thinking skills for students, developing the ability to critically evaluate information in conditions of disinformation, and educating them as competitive specialists who meet the requirements of modern society and market economy. Therefore, the study and application of the heritage of ancient philosophy should become an integral part of modern educational reforms.

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