ANCIENT METHODS OF CRITICAL THINKING IN TEACHER EDUCATION: FROM PAIDEIA TO EPISTEMIC VIRTUES

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Summary

The aim of the article is to substantiate the pedagogical potential of ancient philosophical methods in developing critical thinking among future educators in the information age. The research methodology includes historical-philosophical analysis of the concept of paideia and epistemic virtues, comparative method for juxtaposing ancient sophistry with contemporary disinformation practices, hermeneutic approach to interpreting primary sources (Plato, Aristotle), theoretical generalization to identify transhistorical pedagogical principles. The scientific novelty lies in conceptualizing critical thinking as an epistemic virtue through synthesizing Socratic maieutics, Aristotelian logic, and contemporary challenges of the digital age; in systematizing ancient methods of critiquing sophistic rhetoric as tools for developing media literacy; in substantiating Socratic dialogue as a pedagogical paradigm that cultivates epistemic humility and intellectual honesty. The research findings demonstrate that ancient pedagogical principles – paideia as holistic personal development, Socratic elenchus as a method of deconstructing pseudo-knowledge, Aristotelian dianoetic virtues as the foundation of rational agency – retain methodological productivity in the context of teacher education. The structural similarity between ancient sophistry and contemporary fake news is proven, enabling the adaptation of Platonic critique of manipulative rhetoric and Aristotelian taxonomy of fallacies for analyzing disinformation. Conclusions: integrating ancient methods of critical thinking into teacher education enables the formation of epistemic virtues (intellectual honesty, open-mindedness, curiosity, epistemic humility) necessary for navigating the information environment and countering manipulative practices.

Key words: critical thinking, epistemic virtues, paideia, Socratic method, Aristotelian logic, teacher education, philosophy of education, virtue epistemology.

1. Introduction

Modern information society generates unprecedented challenges for education. Researchers emphasize that the necessity of mastering critical thinking is dictated by the

multidimensionality of the information society and the dominant position of the mediocre individual within it. In the context of digital transformation, hybrid threats, and information wars, critical thinking has transformed from an abstract philosophical category into a vital competence, especially for educators who shape the intellectual potential of future generations.

European experience demonstrates systematic attention to the development of critical thinking. Critical thinking and educational processes built upon its principles have, over recent decades, become the foundation of educational reforms in leading European countries. OECD studies confirm that educators require not merely instructional techniques for teaching critical thinking, but a deep understanding of its philosophical foundations and historical development *(Vincent-Lancrin, 2023)*.

Teacher education in the humanities acquires particular significance, since humanities educators are carriers and transmitters of the cultural tradition of critical thinking. As S. Hanaba rightly notes, "education focuses on the development of the child, the unfolding of creative potential, and the cultivation of skills of independent critical reflection on problems" *(Hanaba, 2022)*. However, contemporary teacher education programs often remain limited to a technocratic approach, ignoring the rich historical-philosophical experience accumulated by humanity over millennia.

The paradox of the situation lies in the fact that, despite the long history of the development of the concept of critical thinking and its enduring relevance, rooted in centuries-old philosophical reflections on reasoning and the pursuit of true knowledge, its historical origins remain insufficiently represented in pedagogical practice *(Kozachenko, 2021)*. At the same time, recent studies confirm the continued significance of ancient philosophical heritage.

The scientific novelty of the study lies in the fact that, for the first time, a comprehensive analysis of the historical-pedagogical potential of ancient philosophy is conducted in the context of developing information-critical analysis skills among future humanities educators; universal pedagogical principles of ancient philosophical traditions relevant to the formation of professional competence of contemporary educators are identified and systematized; and the relevance of ancient methods (Socratic dialogue, paideia, dialectics) for modern pedagogical practice is substantiated in the context of digital transformation of education.

The aim of the study is to identify and scientifically substantiate the historical-pedagogical potential of ancient philosophy in forming skills of critical analysis of information among future humanities educators. This aim determined the implementation of the following research objectives: to analyze the genesis of critical thinking within ancient philosophical traditions, identifying their common and distinctive features; to investigate the pedagogical principles of ancient paideia and substantiate their relevance for modern education; to examine the Socratic method as a tool for developing critical thinking and determine possibilities for its adaptation within teacher education; to substantiate practical recommendations for using the historical-pedagogical potential of ancient philosophy in the contemporary educational process.

The research methodology is based on a comprehensive application of methods of historical-philosophical and pedagogical analysis. The comparative method is applied to identify structural similarities between ancient sophistry and contemporary disinformation practices, as well as to compare Socratic dialogue with modern pedagogical methods (inquiry-based learning, collaborative learning). The method of theoretical generalization is used to identify transhistorical pedagogical principles and adapt them to professional teacher education. The methodological foundation of the study consists of the principles of historicism, objectivity, systematicity, and interdisciplinarity, enabling the integration of historical-philosophical, epistemological, and pedagogical perspectives.

The logic of presentation follows the principle of moving from the general to the particular, from conceptual foundations to practical implications. First, paideia is examined as a holistic system of personal formation through the unity of kalokagathia and epistemic virtues, constituting a prototype of critical thinking (2). Next, the Socratic method is analyzed as a specific pedagogical paradigm of critical inquiry, including a detailed examination of the structure of elenchus, typologies of questioning, and Aristotle's taxonomy of dianoetic virtues (3). Finally, the application of ancient methods of critiquing sophistic rhetoric to the analysis of contemporary disinformation practices is considered, and their relevance for the development of media literacy and critical rationality is substantiated within the context of European educational policy and digital transformation (4). This structure ensures a consistent transition from historical-philosophical foundations to contemporary pedagogical applications of ancient heritage in teacher education.

2. Paideia as a Prototype of Critical Thinking: From Kalokagathia to Epistemic Virtues

Ancient paideia (παιδεία) constitutes not merely a historical phenomenon of education, but a conceptual matrix that defined the intellectual identity of European culture. In contrast to the modern utilitarian reduction of education to the transmission of skills, paideia articulated education as an ontological transformation of the individual through the unity of physical excellence (gymnastics), intellectual culture (philosophy and sciences), aesthetic sensitivity (music and poetry), and moral perfection (virtue formation). The foundation of classical ancient education was a paradigm of purposeful influence on the formation of a harmoniously developed personality encompassing physical, intellectual, ethical, and aesthetic dimensions.

The epistemological core of paideia was the ideal of kalokagathia (καλοκἀγαθία)–the inseparable unity of the beautiful (kalos) and the good (agathos). This concept implied a fundamental principle: genuine knowledge cannot be separated from moral excellence, and intellectual development is impossible without ethical reflection. In contemporary terms of virtue epistemology, kalokagathia presupposes that critical thinking is not merely a cognitive procedure, but also an ethical disposition–readiness to subordinate one's own interests to the demands of truth, intellectual courage to defend unpopular yet justified positions, and epistemic humility in recognizing the limits of one's competence.

The philosophical foundation of ancient pedagogy, represented by the ideas of Socrates, Plato, and Aristotle, constituted a methodological framework that transformed education into a critical practice. Contemporary studies of the pedagogical potential of ancient philosophy confirm that engagement with Greek thought cultivates critical thinking skills through the formation of rational argumentation, identification of hidden assumptions, and systematic verification of claims *(Sieh et al., 2025)*. Extrapolating this conclusion to paideia as a whole, it may be argued that antiquity offers not archaic methods, but transhistorical principles for the formation of an epistemically responsible subject.

The Delphic imperative "Know thyself" (γνῶθι σεαυτόν) articulated education not as external accumulation of information, but as an internal process of self-knowledge and actualization of potential. This interpretation differs radically from behaviorist pedagogy dominant in the twentieth century, where learning was understood as behavior modification through external stimuli. Instead, the ancient approach presupposed maieutics–the midwifery of thought–where the educator does not implant ready-made knowledge, but creates conditions for its autonomous emergence in the learner's consciousness.

3. The Socratic Method as a Pedagogical Paradigm of Critical Questioning

Socratic maieutics represents an original articulation of critical thinking in the history of education. Comparative studies of the effectiveness of Socratic dialogue under conditions of artificial intelligence implementation demonstrate the sustained relevance of this method as a pedagogical strategy that stimulates independent thinking and intellectual curiosity *(Hoda et al., 2025).* In contrast to the traditional didactic model, where the educator functions as the source of knowledge and the student as a passive recipient, the Socratic method inverts pedagogical hierarchy: the educator demonstrates epistemic humility, while the student becomes an active agent of knowledge construction.

The structure of Socratic elenchus (ἔλεγχος) includes successive epistemic operations. The first stage is the formulation of a question concerning the essence of a concept (ti esti), which requires definitional precision. The second stage involves the interlocutor's proposal of a definition that appears self-evident. The third stage is Socratic irony (eironeia), where the philosopher simulates ignorance, provoking the interlocutor to explicate implicit assumptions. The fourth stage is systematic deconstruction through a series of questions that reveal internal contradictions in the claims (elenchus in the narrow sense). The fifth stage culminates in aporia (ἀπορία)–a state of productive intellectual impasse in which the interlocutor becomes aware of the inadequacy of prior beliefs.

The epistemological value of aporia lies in the destruction of pseudo-knowledge (doxa) as a prerequisite for authentic inquiry (episteme). In contemporary terms of cognitive psychology, aporia produces cognitive dissonance–a state of discomfort arising from contradictions between beliefs that motivates the revision of cognitive structures. Research confirms that the Socratic method encourages students to explore their own thoughts and beliefs and to critically analyze how these beliefs shape their assumptions about the subject under discussion *(The Socratic method, 2022).*

A fundamental distinction between Socratic dialogue and debate lies in its cooperative rather than agonistic nature. As contemporary scholars note, the Socratic seminar is not a debate; its purpose is the joint construction of meaning through collective inquiry. It is not a competition in eloquence aimed at defeating an opponent, but a shared intellectual journey toward truth. Participants in the dialogue function as epistemic partners rather than rhetorical adversaries. Such a structure creates a safe intellectual space in which error, doubt, and revision of one's position are permissible – elements critically important for the development of critical thinking, yet often blocked in traditional pedagogy by fear of negative evaluation.

The contemporary adaptation of the Socratic method is operationalized through the technique of "strong questioning" – the formulation of open-ended questions that do not have a single correct answer and require multilevel critical analysis. The typology of questions includes: (1) clarifying questions; (2) probing assumptions; (3) probing reasons and evidence; (4) questioning viewpoints and perspectives; (5) probing implications and consequences.

Pedagogical mastery in Socratic dialogue does not consist in neutral facilitation, but in strategic navigation: the educator occupies an expert position but does not impose it directively, instead creating intellectual conditions in which students autonomously construct justified conclusions. This requires sensitivity to kairos–attunement to the right moment for the right question, intuitive awareness of group dynamics, and readiness to abandon a pre-scripted lesson plan in favor of organic dialogical development *(Knezic et al., 2010: 1105).*

Aristotle's concept of dianoetic virtues in the Nicomachean Ethics (Book VI) offers a systematic taxonomy of epistemic excellences: sophia (wisdom), phronesis (practical wisdom),

episteme (scientific knowledge), techne (productive knowledge), and nous (intuitive intellect) *(Aristotle, 2009)*. Contemporary virtue epistemology reactivates the Aristotelian approach, asserting that knowledge without intellectual virtues or broader critical thinking skills is insufficient for an epistemically rational subject. Thus, critical thinking is not reducible to mastery of formal logical procedures, but presupposes the cultivation of stable intellectual dispositions: intellectual honesty, open-mindedness, curiosity, intellectual courage, and epistemic humility.

For humanities educators, epistemic virtues have a dual significance: as personal professional qualities and as pedagogical goals for student formation. The educator must model these virtues in practice – publicly acknowledging errors, demonstrating openness to critique, and articulating the limits of one's expertise. Philosophical knowledge enables the overcoming of biases and stereotypes *(Hanaba, 2022: 2),* which is particularly critical in polarized societies where cognitive biases obstruct rational discourse.

4. Ancient Methods of Critiquing Sophistry as Tools of Media Literacy in the Age of Disinformation

The information age has produced a paradoxical situation: unprecedented access to knowledge is accompanied by a crisis of epistemic trust due to the large-scale spread of disinformation, conspiracy narratives, and propagandistic manipulation. Contemporary researchers note that the necessity of critical thinking is dictated by the multidimensionality of information society and a crisis of rationality *(Sabadukha, 2023)*. In this context, critical thinking transforms into a meta-competence of the educator–one that determines the effectiveness of all other professional competencies.

The role of the educator evolves from a transmitter of ready-made knowledge to a facilitator of critical reflection on information. This shift is particularly crucial for humanities educators, since the humanities traditionally bear responsibility for the formation of critical rationality and civic epistemic culture. The philosophical approach to critical thinking conceptualizes it as a set of means for discovering truth and focuses on teaching methods of rational inquiry *(Kozachenko, 2021: 251),* which presupposes not only technical procedures but also a stable orientation toward truth.

The historical parallel between ancient sophistry of the fifth and fourth centuries BCE and contemporary disinformation campaigns is structurally significant. The sophists, who taught the art of persuasion irrespective of truth (antilogic – the technique of arguing opposing theses), generated problems analogous to modern fake news and post-truth discourse. Protagorean relativism ("man is the measure of all things") legitimized epistemic anarchism, in which any position could be justified if rhetorically persuasive.

Plato's critique of sophistic rhetoric in Gorgias distinguishes between true rhetoric (alēthinē rhētorikē), grounded in knowledge of truth and ethical responsibility, and manipulative rhetoric (kolakeia), which employs emotional influence to achieve particular ends. Socrates asserts: "Rhetoric, then, seems to be a producer of persuasion, not of instruction" *(Plato, 1997)*. This distinction is methodologically crucial for the development of media literacy: critical analysis of information requires the ability to differentiate reasoned argumentation from rhetorical manipulation appealing to emotion (pathos) at the expense of logical proof (logos).

Aristotle's systematization of logical fallacies in Sophistical Refutations offers a taxonomy directly applicable to the analysis of contemporary disinformation *(Aristotle, 1984)*. Aristotle distinguishes fallacies dependent on language (in dictione) and those independent of language (extra dictione). Many contemporary fake narratives exploit these classical errors.

A significant portion of modern fake news relies on such fallacies as ad hominem, post hoc ergo propter hoc, false dilemma, appeal to emotion, and hasty generalization. An educator equipped with Aristotelian taxonomy is capable of systematically deconstructing disinformation narratives and demonstrating to students the mechanisms of logical manipulation.

The Socratic method of questioning is operationalized as a tool of critical information verification through systematic inquiry into sources, interests, alternative explanations, falsifiability, and logical implications. Regular application of such questioning cultivates a stable orientation toward epistemic vigilance.

European educational policy demonstrates systematic attention to critical thinking as a key competence. The EU Framework of Key Competences for Lifelong Learning *(Council of the EU, 2018)* identifies critical thinking as a transversal competence integrated across educational outcomes *(Vincent-Lancrin, 2023)*. At the same time, many contemporary "innovative" trends represent a return to the ancient foundations of European educational tradition.

The concept of Bildung in German philosophy of education, which significantly influenced European pedagogy, is a direct heir to ancient paideia. Both concepts emphasize holistic personal development, the unity of knowledge and moral virtues, and the priority of humanistic values over utilitarian approaches. Socratic dialogue, Platonic dialectics, and Aristotelian logic thus emerge not as archaic forms, but as methodologically productive tools for enriching contemporary pedagogical practice.

5. Conclusions

The conducted study confirmed the fundamental thesis that ancient philosophical methods retain methodological productivity in the development of critical thinking among future educators, functioning not as outdated historical artifacts, but as transhistorical pedagogical paradigms capable of responding to the challenges of the information age.

First, the conceptualization of paideia as holistic personal development through the unity of kalokagathia offers an alternative to the contemporary utilitarian reduction of education to skill transmission. The ancient understanding of education as an ontological transformation rather than external accumulation of information allows for a rethinking of the educator's role – from knowledge transmitter to facilitator of critical reflection. The epistemological core of paideia–the inseparability of knowledge and moral virtues – actualizes an understanding of critical thinking not only as a cognitive procedure, but also as an ethical disposition presupposing intellectual honesty, openness to alternative perspectives, and epistemic humility.

Second, Socratic maieutics as a pedagogical paradigm of critical questioning demonstrates stable effectiveness in forming skills of autonomous knowledge construction. The structure of Socratic elenchus – from the formulation of an essential question through the identification of contradictions to the attainment of aporia (awareness of ignorance) – cultivates epistemic vigilance and the capacity for systematic verification of claims. The adaptation of Socratic dialogue through the technique of strong questioning (clarifying questions, probing assumptions, questioning viewpoints) creates a safe intellectual space for critical reflection, in which students function as epistemic partners in the shared pursuit of truth rather than passive recipients of ready-made answers.

Third, the taxonomy of epistemic excellences (sophia, phronesis, episteme, techne, nous) underscores the multidimensionality of intellectual excellence, which cannot be reduced to formal logical competence. Aristotle's classification of sophisms proves directly applicable

to the deconstruction of contemporary disinformation narratives, as a significant portion of fake news exploits classical logical fallacies.

Fourth, the historical parallel between ancient sophistry and contemporary post-truth discourse constitutes not merely an analogy, but a structural similarity of epistemic crises. Plato's distinction between true rhetoric (alēthinē rhētorikē), grounded in knowledge of truth, and manipulative rhetoric (kolakeia), which relies on emotional influence, remains methodologically critical for information analysis in the age of digital manipulation. The Socratic method of questioning is operationalized as a tool for systematic critical verification of any informational message.

Fifth, the integration of ancient methods into professional teacher education enables the formation of a complex of epistemic virtues: intellectual honesty (willingness to acknowledge errors), openness (consideration of alternative viewpoints), curiosity (aspiration toward deep understanding), intellectual courage (defense of unpopular but justified positions), and epistemic humility (awareness of the limits of one's competence). These virtues are not supplementary "soft skills," but constitutive elements of critical thinking that distinguish it from technocratic application of logical procedures.

The conducted theoretical study opens several directions for further research. Empirical investigation is needed to assess the effectiveness of the proposed model of integrating historical-philosophical heritage into teacher education. Experimental validation may include the development of specialized courses for future educators focused on methodological foundations of teaching critical thinking or ancient methods within specific disciplines. Comparative research across national educational traditions (e.g., German Bildung, French éducation humaniste, British liberal education) is also promising. Finally, further research is warranted into the potential of digital technologies, including artificial intelligence, for implementing the Socratic method in distance and blended learning formats.

In the context of the challenges of information society, digital transformation, and the spread of disinformation, turning to the ancient origins of critical thinking constitutes a strategically significant innovation. The formation of educator-intellectuals who possess not only teaching techniques but also a deep culture of critical thinking rooted in the great philosophical tradition is a prerequisite for the quality of humanities education and the intellectual health of society.

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