



Restructuring Education in the Age of Artificial Intelligence from the Perspective of Humanistic Scientific Methodology

Nguyễn Văn Khương

Department of Philosophy, Cuu Long University, Vinh Long Province, Vietnam

Article DOI: 10.55677/SSHRB/2026-3050-1008

DOI URL: <https://doi.org/10.55677/SSHRB/2026-3050-1008>

KEYWORDS: humanistic scientific methodology, education, scientific knowledge, practical competence, artificial intelligence.

ABSTRACT: The development of the education market, academic credentials, digital data, and artificial intelligence is widening the gap between knowledge and actual competence, as well as between technical efficiency and human development. This study aims to clarify the humanistic foundation of education, analyze the mechanism of the instrumentalization of knowledge, and establish principles for restructuring education in the context of digital technology. Humanistic scientific methodology is employed in conjunction with the operations of analysis and synthesis, logic and history, abstraction and concretization, criticism and construction. The conceptual material of this study comprises the concepts of life, needs, capabilities, creativity, scientific knowledge, norms, power, the market, qualifications, actual competence, and artificial intelligence. The analysis reveals that education loses its humanistic function when norms, profit, academic credentials, or algorithms occupy the position of the end. Education attains legitimacy when it develops cognitive, creative, self-learning, reflective, and responsible capacities. The study concludes that human beings must retain their position as subjects, while science, the market, and technology must remain means serving life.

Corresponding Author

Nguyễn Văn Khương

Published: October 26, 2026

License: This is an open access article under the CC BY 4.0 license:

<https://creativecommons.org/licenses/by/4.0/>

1. INTRODUCTION

Contemporary education is under pressure from commercialization, competition for academic credentials, information saturation, and the development of artificial intelligence. Many educational institutions prioritize indicators, certifications, reputation, and responsiveness to market demands, while judgment, creativity, self-directed learning, and professional responsibility remain disproportionately underdeveloped. Knowledge is reduced to data that can be transmitted, tested, and priced; learners are reduced to achievement profiles; and teachers are confined to the role of implementing curricula. The gap between academic credentials and actual competence, between theory and action, and between technological innovation and human development is becoming increasingly evident (Vinson, 2026). Technology expands access to information but also increases the risk of dependence on algorithms and the erosion of the capacity to challenge them. This pressing condition necessitates education to be re-established. Humanistic scientific methodology takes the actual human being as its point of departure, point of reference, and criterion of evaluation. Education needs to be understood as a process of developing the capacity to understand, choose, create, and assume responsibility; science, the market, academic credentials, and artificial intelligence play the role of means (Santhosh & Witt, 2026). The relationship between knowledge and power therefore needs to be investigated.

2. OVERVIEW OF THE RESEARCH SITUATION

Research on modern education has concentrated on three major directions. The anthropocentric paradigm conceptualizes education as a process of developing individual autonomy, creativity, and responsibility (Baird, 2026). The critical approach analyses the relationship between education and power, norms, social stratification, commercialization, and mechanisms for legitimizing social position through academic credentials (De Graaf, 2026). The technological approach examines the impact of digital transformation,

big data, and artificial intelligence on teaching methods, knowledge management, competency assessment, and occupational structures (Dong et al., 2026).

These approaches have clarified many manifestations of the crisis in education: the gap between qualifications and actual competence, the separation of theory from action, the tendency to evaluate knowledge according to economic criteria, the risk of dependence on algorithms, and the marginalization of learners as subjects. Many studies have also proposed lifelong learning, liberal education, the development of digital competencies, and stronger technological ethics. The current gap lies in the fragmentation among these approaches. The relationship among the concrete human being, scientific knowledge, norms, the market, education, and artificial intelligence has not yet been organized into a unified explanatory structure. The mechanism through which education is transformed from a means of development into a force of control has not been adequately identified through the relationships between ends and means, subjects and products, and freedom and responsibility.

This article focuses on clarifying the humanistic foundation of education, analysing the process of instrumentalizing knowledge, establishing standards for evaluating practical competence, and proposing principles for restructuring education in order to protect self-determination under conditions of digital technology.

3. RESEARCH METHODOLOGY

The study employs humanistic scientific methodology, taking the actual human being as its point of departure, point of reference, criterion of verification, and purpose of cognition. The principle of concrete humanism is combined with critique, interdisciplinary, dialectical analysis, and the dialectical unity of theory and practice. The operations of analysis and synthesis clarify the structure and reconstruct the totality of education; logic and history identify the origins, functions, and processes of transformation of norms; abstraction and concretization establish the intension, extension, and domain of application of concepts; and criticism and construction examine inversion between ends and means, subjects and products, and freedom and responsibility.

The subject matter of this research consists of the concepts, relationships, and phenomena developed in the discussion section, including life, needs, capabilities, creativity, scientific knowledge, education, norms, power, the market, qualifications, actual competence, technology, and artificial intelligence. These materials are organized into a chain of arguments aimed at identifying the mechanisms of knowledge instrumentalization, the commercialization of education, and dependence on technical products. Being fundamentally theoretical and conceptual-analytical, this study eschews empirical survey data and statistical modelling. Its conclusions are limited to the explanatory capacity of the conceptual framework and are examined through their implications for freedom, creativity, responsibility, and self-mastery.

4. DISCUSSION AND RESULTS

4.1. The actual Human Being, Creativity, and the Humanistic Function of Education

Humanistic scientific methodology establishes the actual human being as the starting point, point of reference, and purpose of cognition. The concept of the actual human being refers to an individual who lives through a finite body, emotions, memories, needs, capabilities, labor, relationships, freedom, and responsibility within a particular context. This positioning precludes the reduction of human beings to an abstract entity, a social function, or a unit of measurement. Nature, knowledge, institutions, and social products possess humanistic value to the extent that they participate in sustaining life, expanding the capacity for action, and protecting individual self-determination. Human beings occupy the position of ends in themselves; forms created by human beings serve as means to an end.

Human life constitutes a process of exchanging matter, energy, information, and meaning among individuals, nature, and the community (Achella, 2026). Biological existence constitutes a foundation but does not encompass the entire content of human life. Needs indicate deficiencies or requirements that must be satisfied in order to maintain and develop life. Capabilities refer to existing or potential capacities that enable individuals to choose objects, means, and ways of satisfying their needs. Needs orient activity; capabilities determine the actual scope of activity; and the results of activity continue to transform both needs and capabilities. The transformative relationship between these two categories constitutes the historical character of life and purely biological self-preservation.

Nature provides the material, energy, and ecological limits for existence (Ashford, 2026). Human beings receive objective conditions through cognition, labour, and cooperation and then transform them into an organized living environment. Creativity is a process in which the subject anticipates an outcome, selects means, produces a product, and assumes responsibility for the consequences that arise. Creativity differs from mere adaptive reaction through the capacity to organize causal relationships according to a consciously recognized purpose. The value of a product is tested by its ability to satisfy legitimate needs, expand the capacity to live, and maintain common conditions of existence. A product that undermines the body, consumes lived time, restricts freedom of choice, or degrades the environment fails to meet the humanistic standard, regardless of its technical efficiency or market price.

The scarcity of resources promotes the division of labour and specialization; creative activity gradually becomes organized into professions, institutions, and systems of knowledge (Andersson et al., 2026). Education emerges as a mode of reproducing human capacities through language, knowledge, experience, self-discipline, and responsibility. In the present analysis, education refers to the process of organizing conditions that enable individuals to recognize their needs, develop their capabilities, examine their

judgments, and participate in constructing common life. The transmission of information constitutes a technical component. Its fundamental function lies in transforming knowledge into the capacity to understand, choose, act, and evaluate oneself. Teachers organize cognitive conditions; learners participate as subjects possessing experience, asking questions, and capable of criticism. An educational relationship acquires a humanistic character when both subjects share responsibility for the quality of knowledge and the consequences of using that knowledge (Sejdiu & Ramadani, 2026).

Education develops together with the individual and changes in life conditions. At the stage when individuals have not yet fully recognized their own capabilities, education opens access to the language, methods, and experiences necessary for self-understanding. The capacity for judgment is formed, and the focus shifts toward self-directed learning, dialogue, cooperation, and knowledge sharing. Self-directed learning does not signify separation from the community; rather, it signifies the capacity to identify problems proactively, select sources, examine evidence, revise one's understanding, and take responsibility for conclusions. Education in the humanistic sense has an open structure; its objective is to form subjects capable of continuing to learn without remaining permanently dependent on the authority of those who transmit knowledge.

Scientific knowledge plays a foundational role in developing the capacity for judgment (Børte & Zeivots, 2026). Science apprehends the structure, laws, conditions, and limits of an object through concepts, evidence, and verification. Education organizes the reception, evaluation, and application of knowledge to activities of life. Science separated from education can easily become specialized knowledge detached from individual needs. Education separated from science can easily turn into the dissemination of beliefs, prejudices, or unsubstantiated cognitive schemas. The organic relationship between the two fields enables knowledge to retain its objectivity, practical competence, and humanistic responsibility.

Education can reverse its direction, changing from a means of development into a mechanism of constraint (Brown, 2026). Educational norms constitute a system of criteria established to organize learning, evaluate outcomes, and regulate relationships among subjects. Norms that are compatible with the capacity to live help individuals recognize limits, correct errors, and coordinate action. Norms separated from concrete objects can easily become imposed patterns. Learning shifts from the development of capabilities to compliance with criteria; learners are positioned as products that must meet standards; teachers become implementers of procedures; and knowledge is reduced to content that can be tested and certified.

The instrumentalization of education manifests an inversion in the relationship between means and ends, subordinating the development of subjects to external objectives such as profit, status, conformity, or the need to preserve institutions. The logic of commodification intensifies when knowledge is packaged as a product, education is organized primarily as a service, and learning outcomes are converted into competitive advantages (Fawns et al., 2026). Actual competence loses its priority, while qualifications, rankings, and purchasing power become criteria of classification. The relationship between teachers and learners is narrowed into a service transaction, diminishing cognitive responsibility and the capacity to co-create knowledge.

Economic exchange does not in itself negate the humanistic function of education. Financial resources ensure infrastructure, professional labour, and access to knowledge. Risk emerges when economic criteria take the place of criteria for human development. Price reflects supply-and-demand relations within a particular sphere, but it does not fully express the value of knowledge for freedom, creativity, and responsibility (Bourassa, 2026). Identifying price with value makes education serve purchasing power, intensifies stratification, and transforms opportunities for development into objects of possession.

The humanistic standard of education is determined through its effects on the subject. Learning content must be appropriate to its object and capable of verification; methods must expand the capacity for self-directed learning and reflection; educational relationships must respect the body, voice, and right to challenge; and outcomes must be transformed into the capacities to live, create, cooperate, and assume responsibility. The unity of science and education restores the proper relationship between knowledge and life, between means and ends, and between products and their creative subjects.

The actual (concrete) human being is present as the subject who constructs education, rather than occupying the status of a passive product shaped by institutions. Education fulfils its humanistic function when it helps individuals understand the conditions of life, develop their capabilities, select means, control products, and participate in constructing common relationships. The subject-product relationship is thereby restored, knowledge returns to its position as a means of creativity, while human life retains its position as the criterion of evaluation and the ultimate purpose of education (Roberts, 2026).

4.2. Normative Power, the Market, and the Alienation of Education

Education does not operate as a neutral system for transmitting knowledge. Every educational institution is formed within a particular social order and receives its objectives, resources, evaluative standards, and limits of action from subjects who possess the power to organize common life. Knowledge is selected, arranged, and disseminated through curricula, methods, examinations, qualifications, and recognition mechanisms. Educational activity always contains power relations because power determines what content is legitimized as knowledge and, at the same time, has the capacity to orient how individuals understand themselves, their communities, and the world.

In this context, educational power denotes the capacity of a subject or institution to establish the content, norms, positions, and developmental opportunities of learners. Religion, the state, the market, and professional organizations have historically participated in constructing educational systems with different objectives. This relationship expresses the intertwining of knowledge production

and politics (Shchytsova & Korablyova, 2024, p. 15). Loyalty, service, discipline, success, or productivity may be incorporated into curricula as values that guide behaviour. Conflicts of interest in social life are transformed into conflicts among normative systems, between the requirements of individual development and the need of institutions to preserve social order.

The distinction between scientific knowledge and social norms serves a methodological function. Scientific knowledge aims at correspondence between cognition and its object and is based on concepts, evidence, verifiability, and revisability. Social norms prescribe forms of action that are accepted within a historical community. Norms organize communication and define rights, obligations, and responsibilities; they are not identical with scientific truth. Identifying the two domains causes historical rules to assume the form of objective laws, while the opinions of dominant subjects acquire the appearance of necessary knowledge (Alwali, 2026).

Standardized education refers to an educational model in which conformity with established patterns becomes the central criterion. Learners are evaluated according to the extent to which they receive prescribed content, reproduce established interpretations, and comply with predetermined behaviours. The ability to ask questions, examine premises, and challenge conclusions may be regarded as a sign of deviation from the norm. Learning activity shifts from understanding an object to adapting to institutional requirements. Individuals gradually internalize external standards as inner needs and evaluate themselves through grades, titles, and levels of recognition (Bubikova-Moan et al., 2026).

A mechanism of control emerges when norms exceed their coordinating function and begin to dictate the valuation of subjects. Educational control is not limited to direct commands. Rigid curricula, examinations heavily oriented toward reproduction, reward mechanisms, credential pressure, and the authority to distribute opportunities produce compliant behavior without requiring continuous coercion. Learners are relegated to records of outcomes; teachers are positioned as implementers of curricula; and knowledge is equated with content serving assessment.

The relationship between subject and means is reversed when educational products return to classify, evaluate, and condition their creators. The professionalization of education expands the capacity to organize knowledge, train personnel, and allocate resources (Alamaa et al., 2026). At the same time, professionalization brings education into economic relations. Teaching labor must be supported by material resources; educational institutions require operating costs; learners need time, tools, and conditions for access. Economic factors function as means. Commercialization emerges when profit, market share, reputation, and purchasing power take the place of standards of human development.

Knowledge in the market is packaged into courses, programs, certificates, and services. Price expresses relations of exchange but does not fully express cognitive value or the value of the capacity to live. Using price as the central measure creates stratification in access (Karamizadeh et al., 2026). Subjects possessing resources can purchase programs, credentials, and advantageous networks; subjects lacking resources face limitations on opportunities even when they possess comparable capabilities. Education thereby changes from a means of expanding freedom into a mechanism for distributing privilege.

Academic credentials perform the function of certifying a training process within a defined professional domain. Their legitimate function is reversed when qualifications are used as substitutes for actual competence. Individuals study to obtain certification; educational institutions sell the possibility of recognition; and employers use credentials to reduce the costs of evaluation (Rachevski & Gal, 2026). Administrative convenience creates a gap between competence, titles, and professional responsibility. The value of workers is reduced to formal markers, while experience, creativity, and problem-solving abilities are pushed outside official standards.

The alienation of education manifests as a process wherein educational products, norms, and institutions become separated from their function of developing subjects and then return to govern those subjects. Learners do not control knowledge but submit to content provided by authorized institutions; teachers do not organize cognition but protect their professional positions; educational institutions do not serve the development of competence but maintain reputation and revenue (Heltai et al., 2026). Theoretical knowledge becomes detached from practice, producing the ability to use concepts without the capacity to recognize circumstances, evaluate consequences, and assume responsibility for action.

Criticism of alienation does not entail rejecting norms, professions, markets, or academic credentials. Each form retains value within the limits of its defined function. Norms need to be examined against the right to live and the capacity for human development. Markets need to be constrained by fairness of access and social responsibility. Credentials need to reflect competence that has been verified (Braeken & van Laar, 2026). Institutions need to make their objectives, mechanisms for distributing benefits, and consequences of their decisions transparent.

Restoring the humanistic function of education requires re-establishing the relationship among knowledge, norms, and life. Scientific knowledge provides the basis for cognition; norms organize action within historical limits; and ethics guides responsibility toward those affected by action. Education attains legitimacy when it develops the capacity for understanding, creativity, criticism, and self-responsibility. Human beings retain their position as subjects of knowledge, while institutions, markets, norms, and credentials return to their position as means serving life (Bengtson & Nielsen, 2026).

4.3. Scientific Knowledge, Actual Competence, and the Restructuring of Education in the Age of Artificial Intelligence

According to humanistic scientific methodology, scientific knowledge is not identical with information that is stored, transmitted, or reproduced. Scientific knowledge is the result of cognition concerning the structure, relationships, mechanisms of operation, and limits of an object, established through concepts, evidence, verification, and refutation. The value of knowledge lies in its ability to guide action, expand creative capacity, and enable human beings to assume responsibility for consequences. Unanalysed information merely provides material; knowledge emerges through the activity of selecting, interpreting, examining, and applying that material according to an established cognitive purpose (Azevedo, 2026).

Actual competence is the capacity to transform knowledge into judgments, decisions, actions, and products appropriate to particular circumstances. Actual competence includes specialized knowledge, practical skills, problem-solving ability, the capacity to recognize errors and adjust behaviour. Education acquires humanistic value when it helps individuals move from receiving information to mastering methods of cognition. Learners must understand the origins of concepts, the conditions under which they can be applied, the limits of their explanatory power, and the responsibilities arising from the use of knowledge.

The requirement to transform knowledge into actual competence is concretized in the orientation toward “strengthening application-oriented financial education focused on corporate debt financing and capital market instruments” (Kovalova et al., 2026, p. 15). The instrumentalization of education attenuates the nexus between scientific knowledge and practical competence. Curricula are organized to fulfil targets; learning activities are directed toward grades, certificates, and occupational positions; and educational institutions use formal achievements to enhance their reputation. Individuals capable of reproducing assessed content are valued more highly than those capable of posing problems, examining premises, and creating alternatives. The consequence is a dearth of autonomous critical thought in environments that produce large numbers of learners who meet standardized requirements.

The scarcity of creative competence produces a paradox of value. Institutions tend to standardize procedures in order to manage efficiency, yet excessive standardization eliminates the cognitive differences necessary for creativity. Individuals with critical thinking become scarce resources, while educational mechanisms continue to encourage standardized compliance. Institutional reputation is constructed through indicators, rankings, publications, and employment rates, which may become detached from the quality of human development.

Educational products may take a formally valid form while lacking the capacity to solve practical problems, thereby revealing a separation between social recognition and the capacity to live (Kennedy & Michelfelder, 2026). Degrees and certificates retain the function of confirming a training process within a defined professional field. This confirming function becomes distorted when formal markers replace the assessment of competence. Credentials become instruments for identification, the distribution of opportunities, and the legitimation of income. Learners extend their educational trajectories in order to accumulate certificates; employers use credentials as screening tools; and educational institutions expand programs in response to the demand for recognition. Lived time, individual resources, and social resources are consumed when educational processes fail to produce corresponding competence (Bazine et al., 2026).

Criticism of artificial forms of education does not lead to the rejection of education, markets, or professional activity. The market provides resources, promotes competition, and expands the range of service choices. The humanistic boundary is violated when profit determines objectives, content, and evaluative standards. Reform must restore the proper order between ends and means: human development must remain the end, while finance, technology, academic credentials, and governance structures must remain means.

The role of the teacher needs to be defined through the function of organizing cognition. Teachers should not merely transmit content but identify problems, guide methods, examine evidence, create conditions for criticism, and assess the capacity for application. Educational quality depends significantly on the professional competence, professional responsibility, and reflective capacity of teaching staff. Teachers lacking competence can turn textbooks into sources of authority; teachers motivated by vested interests can use their professional positions to safeguard their privileges. Professional responsibility requires the unity of knowledge, ethics, and the obligation to be accountable to learners (Flannery et al., 2026).

The relationship between theory and practice constitutes a cycle of movement of knowledge. Theory generalizes the structure, mechanisms, and relationships of an object. Practice introduces concepts into concrete circumstances, verifies their empirical validity, and reveals their limitations. Results from practice are recorded in order to adjust theory. Separating these two dimensions turns theory into a self-referential structure and practice into an operation lacking direction. Educational curricula must organize the process of transformation among explanation, experimentation, evaluation, and adjustment (ParkerMcLeod, 2026).

Curricular flexibility does not mean following short-term fluctuations in the labour market. Curricula need to update specialized knowledge, technology, and occupational requirements while simultaneously protecting capabilities of long-term value: conceptual thinking, evidence-based analysis, communication, creativity, self-directed learning, and responsibility. Each content component should be evaluated according to its capacity to participate in the overall structure of competence. Outdated, repetitive, or functionally unnecessary content should be streamlined in order to protect learners’ lived time (Wang et al., 2026).

Artificial intelligence and digital transformation are changing the conditions under which information is produced, stored, and accessed. Machines can rapidly perform many operations of searching, synthesizing, classifying, and generating texts. The role of education is therefore shifting toward developing the capacity to ask questions, verify sources, identify bias, explain results, and

assume responsibility for decisions made when using technology. Individuals who merely process data according to predetermined patterns can easily become dependent on technical systems. Individuals who understand the mechanisms, limitations, and consequences of technology are better able to retain initiative in cognitive activity (Hasanein & Al-Romeedy, 2026). Restructuring education in the age of artificial intelligence must combine scientific knowledge, technological competence, and a humanistic foundation. Technology should reduce repetitive labour, expand access, and support the personalization of learning. The authority to determine objectives, values, and responsibility must not be transferred entirely to algorithms.

Education fulfils its function when it develops in subjects the capacity to recognize truth, create means, protect freedom, and assume responsibility toward those affected by their actions. Through an appropriate educational structure, scientific knowledge becomes the capacity to live, professional competence, and the capacity to participate in constructing a common future (Ergunova et al., 2026).

4.4. Scientific Knowledge, Real Freedom, and the Right to master Artificial Intelligence

According to humanistic scientific methodology, scientific knowledge is a means through which human beings understand the conditions of life, organize action, and examine consequences. Knowledge does not stand outside life in the form of a set of autonomous propositions. Each scientific concept emerges from the relationship between subject and object and is determined by evidence, verification, scope of application, and the limits of explanation. Knowledge becomes a form of life when understanding participates directly in choosing ends, means, and modes of conduct toward human beings, nature, and social products.

The relationship between understanding and action provides the foundation for conscious life. Understanding without the capacity to act can easily become a self-referential theoretical structure (Slonim et al., 2023). Action without knowledge can easily be guided by habit, prejudice, or power. The unity of cognition, will, and responsibility enables individuals to anticipate outcomes, evaluate means, and adjust behaviour according to actual consequences.

Effectiveness possesses humanistic value only when the result achieved does not destroy the body, freedom, lived time, or developmental conditions of those affected. The epistemic and ethical categories of right/wrong and good/evil continue to perform their guiding functions, but value does not arise from the inherent authority of a norm. Right and wrong need to be examined according to the degree of correspondence between cognition and its object. Good and evil need to be evaluated according to purposes, means, circumstances, and consequences for life (Ballesteros, 2025). Norms separated from lived experience can easily become instruments of imposition. Norms connected with evidence, human rights, and social responsibility have the capacity to organize communication, limit violence, and protect common conditions of life.

The actual human being exists as an integrated whole of body, emotions, memories, needs, capabilities, relationships, and projections. Differences among individuals are not deviations that need to be eliminated; they also constitute resources for the division of labour, cooperation, and creativity. Each individual has distinct limitations, a distinct pace of development, and a distinct structure of capabilities. Education and technology acquire a humanistic character when they support individuals in recognizing, developing, and using their capabilities without turning differences into grounds for classifying human worth (Aylward et al., 2026). Population growth increases the diversity of experiences, skills, and problem-solving approaches. The number of human beings does not automatically generate development. Value arises from the capacity to organize conditions in which different capabilities can participate in common life. Data science and artificial intelligence support the identification of trends, the analysis of needs, and the design of appropriate learning environments. The analysis of human beings through data must be subject to limitations imposed by privacy, the right to challenge, transparency, and accountability. A digital profile cannot replace the concrete life of an individual (Alexander & Sudeall, 2026).

Actual freedom denotes the capacity to recognize conditions, choose ends, organize means, and assume responsibility for outcomes. Freedom does not mean escaping all limitations. Knowledge enables individuals to distinguish natural limits from social oppression, identify possibilities for transforming circumstances, and evaluate the costs of different choices. Science expands the domain of freedom by clarifying the mechanisms of disease, labour, the environment, information, and power. The scope of actual freedom also depends on access to knowledge and resources and on the right to participate in decision making.

Scientific development does not by itself guarantee an equitable distribution of the conditions of life (Amaral et al., 2026). Knowledge concentrated within particular institutions may become a privilege. Technology owned and operated according to local or sectional interests may increase dependence. Freedom grounded in knowledge requires mechanisms of access, foundational education, and the right to control technical products that directly affect life. Individuals who lack the capacity to understand systems may still bear the consequences of automated decisions even though they have not participated in designing or selecting the criteria. Ethics, law, and customs need to be considered as historical products serving to organize social relations. The value of each form depends on its capacity to protect life, self-determination, and responsibility (Aimen, 2025). Norms that legitimize violence, deception, or discrimination have deviated from their humanistic function. Criticism of norms does not mean eliminating all restrictions on behaviour. Critical activity identifies origins, interests, mechanisms of operation, and consequences, thereby enabling rules that are no longer compatible with real human beings to be revised.

Artificial intelligence is a technical system integrating data, computational models, specialized knowledge, and the labour of multiple subjects. The concept of artificial intelligence does not designate an independent human subject. Technical systems process data

and generate outputs according to structures that are designed, trained, and operated (Amoore, 2023). Objectives, criteria, input data, and the use of outputs are all connected to decisions made by human beings and institutions. Responsibility cannot be transferred to the automated features of a tool.

The relationship between humanity and technology must be organized according to the order between ends and means. The human essence denotes the capacity of human beings in reality to feel, understand, create, choose, and assume responsibility. Technology expands the capacity to process information, reduces repetitive work, and supports prediction. Technology loses its liberating function when technical systems acquire decision-making power, evaluate individuals, or distribute opportunities without adequate accountability (Belsunces Gonçalves & Forlano, 2026).

Human beings lose self-mastery when their bodies, data, time, and behaviour are appropriated beyond informed consent. Technological stratification emerges between those who design, own, and control systems and those who merely receive their outputs. This differentiation has a social origin rather than being an inevitable law of technology. Education has the function of narrowing this gap through basic knowledge, interdisciplinary thinking, the capacity to verify sources, understanding of models, and evaluation of consequences. Learners need to develop the capacity to use artificial intelligence as a creative means while retaining the right to make decisions in response to suggestions generated by the system.

An environment characterized by information saturation makes the capacity to distinguish facts, interpretations, hypotheses, and biases a condition of cognitive freedom (Augenstein et al., 2024). Access to information does not imply the capacity to understand it. Individuals need to identify sources, verify evidence, recognize interests, compare explanations, and disclose the limits of conclusions. Cognitive responsibility arises when information is shared, used to make decisions, or transformed into actions affecting others.

Education under digital conditions must liberate individuals from dependence on the authority of information, algorithms, and evaluative patterns. Its objective is to develop subjects capable of self-directed learning, reflection, choice, and adjustment of decisions. Self-determination is strengthened when individuals understand how data are collected, how outputs are generated, and how power operates through technical infrastructures (Aflahah et al., 2026). Scientific knowledge, freedom, and responsibility constitute a foundation that enables human beings to use technology without being possessed by technical products. Human development cannot be measured solely by the speed of innovation, the capital accumulation of wealth, or the capacity for control. The criterion of evaluation lies in the capacity to expand life, protect difference, reduce compulsory labour, and maintain ecosystems. Human beings retain their position as subjects who construct purposes; science and artificial intelligence retain their position as means. This order enables technology to serve real freedom and enables each individual to participate responsibly in constructing a common future (Desmond et al., 2026).

5. CONCLUSION

The study establishes education as a process of developing the actual human being, grounded in scientific knowledge, creativity, freedom, and responsibility. Knowledge retains its value when it helps individuals understand the conditions of life, choose purposes, organize means, evaluate consequences, and adjust actions. Education loses its humanistic function when norms, credentials, markets, or algorithms occupy the position of the end, causing learners to be evaluated on the basis of formal markers.

The analysis clarifies the mechanism of inversion between subjects and products, ends and means, and actual competence and social recognition. Commercialization, standardization, and automation generate risks when profit, reputation, and efficiency overshadow the development of the capacity to live. Artificial intelligence needs to remain a tool supporting cognition, reducing repetitive labour, and expanding access, while continuing to be constrained by requirements of transparency, the right to challenge, privacy, and accountability.

The restructuring of education must restore the position of human beings as subjects.

REFERENCES

1. Achella, S. (2026). Networked humanity: An enactivist paradigm for aligning humans, nonhumans, and machines. *Topoi*. Advance online publication. <https://doi.org/10.1007/s11245-025-10354-6>
2. Aflahah, S., Nisa, K., Aldeia, A. M. S., Marannu, B., Ramli, M., Windyasari, V. S., & Ruhutama, T. S. (2026). AI, ethics, and Islamic higher education: Navigating the tensions between practical risk mitigation and religious normativity. *Jurnal Ilmiah Islam Futura*, 26(1), 1–24. <https://doi.org/10.22373/jiifv26.i1.32978>
3. Aimen, T. (2025). Cognitive freedom and legal accountability: Rethinking the EU AI Act's theoretical approach to manipulative AI as unacceptable risk. *Cambridge Forum on AI: Law and Governance*, 1, Article e20. <https://doi.org/10.1017/cfl.2025.4>
4. Alamaa, L., Hall, P., & Löfgren, K. (2026). Managers, professionals, or public servants? Organizational professionals in the public sector as hybrid professionals. *Public Administration*, 104(1), 90–100. <https://doi.org/10.1111/padm.70000>
5. Alexander, C. S., & Sudeall, L. (2026). People-first court data. *Annual Review of Law and Social Science*, 22. Advance online publication. <https://doi.org/10.1146/annurev-lawsocsci-042224-090838>

6. Alwali, A. (2026). Between bureaucracy and moral truth: Reclaiming ethical authenticity in contemporary institutional ethics, clinical and AI ethics as emblematic cases. *Journal of Information, Communication and Ethics in Society*, 1–18. <https://doi.org/10.1108/JICES-12-2025-0393>
7. Amaral, E., Naranjo-Zolotov, M., & Bação, F. (2026). Unequal AI readiness: Institutional and digital disparities in e-government across the European Union. *Telematics and Informatics*, 107, Article 102400. <https://doi.org/10.1016/j.tele.2026.102400>
8. Amooore, L. (2023). Machine learning political orders. *Review of International Studies*, 49(1), 20–36. <https://doi.org/10.1017/S0260210522000031>
9. Andersson, E., Enqvist, J., Tengö, M., & Aaltonen, V. A. (2026). Transforming the nature of cities: Stewardship and more-than-human agency. *Current Opinion in Environmental Sustainability*, 80, Article 101628. <https://doi.org/10.1016/j.cosust.2026.101628>
10. Ashford, S. J. (2026). Angles on agency: A research life betting on human initiative and potential. *Annual Review of Organizational Psychology and Organizational Behavior*, 13, 1–21. <https://doi.org/10.1146/annurev-orgpsych-020625-112038>
11. Augenstein, I., Baldwin, T., Cha, M., Chakraborty, T., Ciampaglia, G. L., Corney, D., DiResta, R., Ferrara, E., Hale, S., Halevy, A., Hovy, D., Ji, H., Menczer, F., Míguez, R., Nakov, P., Scheufele, D., Sharma, K., Surdeanu, M., & Zhang, A. (2024). Factuality challenges in the era of large language models and opportunities for fact-checking. *Nature Machine Intelligence*, 6, 852–863. <https://doi.org/10.1038/s42256-024-00881-z>
12. Aylward, A., Artiles, A. J., Kramarczuk Voulgarides, C., Tefera, A., Alvarado, S. L., & Noguera, P. (2026). Deepening the study of disproportionality in special education: A contextual analysis within suburban school districts. *Exceptional Children*, 92(4), 377–397. <https://doi.org/10.1177/00144029251408685>
13. Azevedo, R. (2026). Using real-time process data of domain-specific learning processes to provide adaptive support for learning and instruction: Challenges and opportunities. *Learning and Instruction*, 104, Article 102363. <https://doi.org/10.1016/j.learninstruc.2026.102363>
14. Baird, E. (2026). Caring for the artist as a human being: Suggestions for the contemporary college dance educator. *Dance Education in Practice*, 12(2), 9–14. <https://doi.org/10.1080/23734833.2025.2570057>
15. Ballesteros, V. (2025). Objectivity, standardization, and epistemic injustice in psychiatry. *Synthese*, 205, Article 172. <https://doi.org/10.1007/s11229-025-05016-4>
16. Bazine, N., Bernaud, J.-L., Guilbert, L., Saint-Germes, È., Pijoan, N., Ruii-Renard, L., & Pignault, A. (2026). Who is more likely to find a job? A person-centred approach to the study of employability profiles among older jobseekers. *Applied Psychology*, 75(4), Article e70119. <https://doi.org/10.1111/apps.70119>
17. Belsunces Gonçalves, A., & Forlano, L. (2026). World(coin) in the AI future: How sociotechnical fictions are instrumental to the cyberlibertarian transition. *AI & Society*, 41, 5411–5425. <https://doi.org/10.1007/s00146-026-02913-1>
18. Bengtson, A., & Nielsen, L. (2026). Having enough of a say. *Economics & Philosophy*, 42(1), 91–110. <https://doi.org/10.1017/S0266267125000124>
19. Bourassa, G. N. (2026). ‘If you love teaching so much ...’: Teaching against the injunctions of the capitalist state and refusing the weaponization of love. *Critical Studies in Education*, 67(2), 280–297. <https://doi.org/10.1080/17508487.2025.2470380>
20. Braeken, J., & van Laar, S. (2026). Reducing calibration bias for person fit assessment by mixture model expansion. *Educational and Psychological Measurement*, 86(1), 111–134. <https://doi.org/10.1177/00131644251364252>
21. Brown, C. A. M. (2026). Science education’s responses to misinformation: A scoping review. *Studies in Science Education*. Advance online publication. <https://doi.org/10.1080/03057267.2026.2654793>
22. Bubikova-Moan, J., Ferguson, L. E., & Andresen, A. (2026). The concept of critical thinking in teacher education: A systematic review. *Review of Educational Research*. Advance online publication. <https://doi.org/10.3102/00346543261438479>
23. Børte, K., & Zeivots, S. (2026). Active learning in higher education: Inheriting pasts and emerging futures. *Active Learning in Higher Education*, 27(2), 207–219. <https://doi.org/10.1177/14697874261426575>
24. De Graaf, J. (2026). The “Golden Age of Social Mobility” in postwar Europe: Class relations, educational expansion, and political stability in East and West. *Journal of Social History*, 59(3), 565–84. <https://doi.org/10.1093/jsh/shaf039>
25. Desmond, C., Nowaczyk, M., Currie, S., Watt, K. G., & Richter, L. (2026). A human development framework to maximize returns of early life investments in low-and-middle income countries. *Oxford Open Economics*, 5, Article odag003. <https://doi.org/10.1093/oec/odag003>
26. Dong, Y., Ma, H., Jing, B., Wang, Q., Zhu, N., & Cao, P. (2026). Effect of computational thinking professional development on in-service teachers’ teaching and their students’ learning. *Educational Technology and Society*, 29(4), 91–107. [https://doi.org/10.30191/ETS.202610_29\(4\).RP06](https://doi.org/10.30191/ETS.202610_29(4).RP06)

27. Ergunova, O., Mukhanova, G., & Somov, A. (2026). AI-supported student skills profiling integrating AI and EdTech into inclusive and adaptive learning. *Social Sciences*, 15(3), Article 209. <https://doi.org/10.3390/socsci15030209>
28. Fawns, T., Boud, D., & Dawson, P. (2026). Identifying what our students have learned: A framework for practical assessment validation. *Assessment & Evaluation in Higher Education*. Advance online publication. <https://doi.org/10.1080/02602938.2026.2620053>
29. Flannery, S., Keaveney, K., Wesselink, R., & Murphy, F. (2026). From theory to practice: Using the exploratory sequential design to develop a continuous professional development framework. *Journal of Mixed Methods Research*. Advance online publication. <https://doi.org/10.1177/15586898261424023>
30. Hasanein, A. M., & Al-Romeedy, B. S. (2026). ChatGPT-assisted learning effectiveness and academic achievement: A mechanism-based model in higher education. *Information*, 17(3), Article 303. <https://doi.org/10.3390/info17030303>
31. Heltai, J. I., Jani-Demetriou, B., Schmidt, I., Szabó, G., & Tarsoly, E. (2026). Pathways to ethical subjectivity: Participant transformation in tripartite collaborative research. *Critical Inquiry in Language Studies*, 23(2), 97–114. <https://doi.org/10.1080/15427587.2025.2503708>
32. Karamizadeh, S., Shojae Chaeikar, S., & Salarian, H. (2026). Educational poverty and academic achievement: A meta-analysis exploring contextual moderators and policy implications. *Education Sciences*, 16(7), Article 1083. <https://doi.org/10.3390/educsci16071083>
33. Kennedy, J. V., & Michelfelder, D. P. (2026). Envisioning online learning spaces in higher education as spaces of radical openness: A philosophical scaffold for design. *Journal of Philosophy of Education*, 60(3), 503–521. <https://doi.org/10.1093/jopedu/qhaf066>
34. Kovalova, E., Durana, P., Zvarikova, K., & Trulikova, I. (2026). From theory to debt decisions: Evidence on financial literacy among university students. *Economies*, 14(3), Article 100. <https://doi.org/10.3390/economies14030100>
35. Parker-McLeod, J. (2026). Moving towards a professional police workforce: A scoping review of reflective, experiential and authentic learning in initial education. *Policing: A Journal of Policy and Practice*, 20, Article paag006. <https://doi.org/10.1093/polic/paag006>
36. Rachevski, I., & Gal, C. (2026). The educational foundations of entrepreneurial development: Comparing academic, certification and no formal entrepreneurship education pathways. *International Social Science Journal*. Advance online publication. <https://doi.org/10.1111/issj.70059>
37. Roberts, D. (2026). Epistemic injustice, neurodivergence, and inclusive pedagogy: Dyslexia and augmentative communication in higher education. *Disability & Society*, 41(7), 1788–1809. <https://doi.org/10.1080/09687599.2026.2659094>
38. Santhosh, L., & Witt, L. J. (2026). AI won't save us...yet: Reimagining AI's potential to prioritize people. *ATS Scholar*, 7(2), 103–106. <https://doi.org/10.1093/atsscholar/aapag009>
39. Sejdiu, S., & Ramadani, R. (2026). Catalytic communication in sustainability education: Bridging the knowledge–action gap through affective engagement and strategic praxis. *Education Sciences*, 16(3), Article 494. <https://doi.org/10.3390/educsci16030494>
40. Shchytsova, T., & Korablyova, V. (2024). Decolonizing knowledge production in Belarus and Ukraine. *Topos*, (2), 5–17. <https://doi.org/10.61095/815-0047-2024-2-5-17>
41. Slonim, D. A., Penedo, J. M. G., & Lutz, W. (2023). Leveraging novel technologies and artificial intelligence to advance practice-oriented research. *Administration and Policy in Mental Health and Mental Health Services Research*, 51, 1–12. <https://doi.org/10.1007/s10488-023-01309-3>
42. Vinson, B. (2026). Reflections on our times: Higher education in focus. *The American Historical Review*, 131(1), 1–26. <https://doi.org/10.1093/ahr/rhaf788>
43. Wang, S., Prestridge, S., Forbes, D., & Wang, Y. (2026). Beyond access alone: Distance education in an AI and open knowledge era. *Distance Education*, 47(2), 181–184. <https://doi.org/10.1080/01587919.2026.2681755>