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**EDUCATION 4.0 – AN INNOVATIVE CONCEPT OF
CONTEMPORARY CULTURE**

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ABSTRACT

This paper analyses the emergence of the Education 4.0 paradigm within the context of the transformations brought about by the Fourth Industrial Revolution and the accelerated integration of artificial intelligence into higher education. Starting from the historical evolution of the educational models, the study highlights the structural changes regarding the teacher's and student's roles, the personalization of learning, the development of transferable skills, and the use of advanced digital technologies. It discusses both the opportunities provided by intelligent systems and the risks associated with excessive digitisation, including social fragmentation and technological reductionism. Within this framework, the paper argues for the need for an anthropological and theological basis for Education 4.0. The concept of imago Dei is proposed as a critical benchmark for distinguishing between the legitimate use of technology and its absolutization, reaffirming the relational, moral, and transcendent nature of the human being. The development of a coherent vision on Education 4.0 requires moving beyond an exclusively technical approach and recognizing the essential role of general education, including the social sciences and humanities, in the development of critical thinking and ethical judgment. Within this context, the dialogue between educational sciences, research in artificial intelligence, and theological reflection becomes relevant for shaping an educational model in which the technological progress is linked to the responsibility and holistic formation of the person.

Keywords: Digital; Education 4.0; artificial intelligence; theological anthropology; Imago Dei;

INTRODUCTION

From an etymological point of view, the term “education” originates from the Latin *educō*–*educare*, meaning to nourish or grow/breed, particularly plants and animals. A similar meaning is also found in French, where, in the 16th century, the word *éducation* appeared, which was later adopted by the Romanian term “*educație*.” Furthermore, the concept can also be associated with the Latin *educō*–*educere*, which means to lead or guide. In general, both etymological directions are considered valid (Cucuș, 1996, p. 26). Thus,



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beyond its original meanings, education refers not only to the idea of growth and formation, but also to that of guidance and taking a path. Within this context, life offers us various contexts and situations, like open doors before us. The choice of the path we follow, however, belongs to each of us, and with this choice comes, naturally, the responsibility for its consequences (Brânzei, 2011, pp. 201, 237).

Access to education is internationally recognized as a fundamental right of every human being. Everyone, without discrimination based on race, gender, nationality, social background, religion, or political views, should have access to free and equitable education. In reality, however, millions of children are deprived of this opportunity. It is estimated that over 72 million children between the ages of 6 and 12 do not attend school. Although many countries formally guarantee equal access for girls and boys, there are still regions where the right to education is limited, particularly for girls, as is the case in Afghanistan. To highlight the importance of education in promoting peace and sustainable development, the United Nations designated January 24 as International Education Day in 2018, reiterating its commitment to inclusive and quality learning (TWINKL).

Whether they are called “digital natives,” “the Internet generation,” or “homo zappiens,” those who grew up in an ecosystem dominated by the media and digital technologies—roughly young people between the ages of 11 and 31—differ significantly from the people who embraced technology as adults. This distinction goes beyond mere familiarity with digital tools; it reflects deeper changes in the way they relate to information, in the dynamics of attention, in communication styles, and in forms of socialization, shaping a cognitive and cultural identity shaped by continuous exposure to the digital environment (Trilling & Fadel, 2009, p. 27).

1. EDUCATION 4.0 WITHIN THE CONTEXT OF THE DIGITAL REVOLUTION: TRANSFORMATIONS, PARADIGMS, AND CHALLENGES

Education 4.0 stems from the observation that the traditional education system no longer adequately meets current demands, given the transformations brought about by the Fourth Industrial Revolution I4.0. Technological changes have profoundly influenced the way people work, think, and interact, which requires the development of skills such as creativity, critical thinking, and collaboration. The “Education 4.0” initiative focuses on the future of learning by integrating I4.0-specific concepts, technologies, and applications into the educational process, both at the theoretical and practical levels. At the same time, it outlines a set of characteristics meant to support quality lifelong learning and respond to current challenges. From this perspective, Education 4.0 goes beyond mere instruction, shaping a training process adapted to the new culture of innovation and continuous development.

The contemporary industrial revolution has redefined economic processes by integrating cyber-physical systems, automation, and real-time data analysis. It is within this context that the “smart factory” is emerging—a production environment fully equipped with sensors, actuators, and autonomous systems, in which digitized models of products and processes—brought together under the concept of the digital factory—are interconnected through ubiquitous computing technologies, enabling the coordination and self-regulation of operations (Lucke *et al*, 2008, pp. 115–118). This structural transformation of the industrial environment is also generating changes in the field of education, leading to the emergence of the Education 4.0 paradigm. Adapted to a deeply digitized society, it promotes the development of analytical, creative, and collaborative skills, reconceptualizing the school as a digital ecosystem of learning, in which technology supports personalized processes, and the student becomes an active participant in his or her own development. The emergence of Industry 4.0 changes the role of human labor, shifting it toward a support role in the production process and requiring new digital, technical, interdisciplinary, collaborative, and communication skills. Consequently, educational establishments must create innovative activities and teaching materials to meet these emerging requirements.

Within this context, this paper proposes an Educational Framework designed to support teaching staff in developing learning activities and resources adapted to Industry 4.0. The model differs from other approaches by integrating an iterative problem-solving method with the principle of authentic task design, which constitute its central elements (Christiansen *et al*, 2022, p. 1).



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Throughout the four industrial paradigms, *education* and *training* have evolved in close connection with the transformations of production. During the first industrial revolution, the focus was on workshop production and authentic tasks, dominated by manual techniques, with a craft-based organization and *direct communication*, promoting a deep understanding of processes but difficult to scale up. The second paradigm brought mass production, mechanical techniques, and a structure oriented toward individual tasks, based on *written instructions*, but with a limited connection between training and work. In the third stage, information technologies were integrated, work became more collaborative, and *the correlation between training and practice improved*. In the 4.0 paradigm, *training is flexible, interdisciplinary, and supported by digital technologies, simulations, and intelligent systems*, integrating learning with the current needs of industry (Christiansen *et al*, 2022, p. 5).

Contrary to the broad historical perspectives on the evolution of education, Fernando Almeida (2019, p. 122) places the emergence of the Education 4.0 paradigm within the context of the rapid transformations of the past two decades. Within this framework, Education 1.0 reflects a traditional model, focused on expository teaching and written or oral assessments. The Education 2.0 paradigm highlights the importance of collaboratively developed projects, using open technologies integrated into activities carried out at the institutional and classroom levels. Education 3.0 marks the expansion of learning beyond the formal setting, with social networks becoming essential infrastructures for stimulating creativity and active student participation. Education 4.0 is emerging as a new paradigm, defined by personalization, flexibility, and real-time adaptability, facilitated by artificial intelligence, big data, cloud computing, the Internet of Things (IoT), and immersive technologies. The teacher's and student's roles are undergoing a profound transformation: the teacher becomes a facilitator supported by educational analytics, while the student gains greater autonomy.

The relationship between learning and skills, within the context of Education 4.0, reflects a structural interdependence between the educational process and its formative outcomes. Global citizenship skills, technological skills, interpersonal skills, as well as innovation and creativity skills are linked to a learning model centred on personalization, accessibility, collaboration, and continuity. Self-paced learning promotes autonomy, inclusive learning supports equity, and a collaborative approach contributes to the development of social skills. The dimension of lifelong learning strengthens adaptability and the ability to integrate new knowledge. Within this framework, skills are a direct expression of how the learning process is structured (Fig. 1).



Fig. 1. The eight characteristics of “Education 4.0”

Source: Adapted from WEF, 2020, p. 7

Bruno Wurtz (1992, pp. 221–224) outlined the principles of a new pedagogical paradigm, anticipating the foundations of Education 4.0. The emphasis shifts from the static accumulation of information toward the development of the capacity for continuous learning, knowledge being understood as an open and evolving process. An egalitarian and flexible framework is promoted, in which the teacher–student relationship is one of reciprocity, and the pace and paths of learning are adapted to individual characteristics. Inner experience, creativity, and pushing one’s own limits are valued, by combining



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theoretical reflection with experimentation and practical application. Learning extends beyond the classroom and extends to the entire life, integrating varied contexts and authentic interactions. At the same time, technology is used as a support tool, without replacing the human dimension of the educational process, which is grounded in dialogue, cooperation, and the holistic development of the individual.

From this perspective, the principles of the new pedagogical paradigm can also be understood in relation to the teleological dimension of education. Any educational endeavour involves an orientation toward an ideal of human development, toward a certain personality profile to be shaped. Education is not a neutral sequence of activities, but a directed action, supported by intentions and value choices consciously embraced by the actors involved. Its goals are not arbitrary but are shaped by the historical, social, and cultural context, as well as by the particularities of those involved in the process. From this perspective, Education 4.0 does not aim merely at the efficiency of adapting to technological transformations, but at the development of a personality capable of critically and responsibly integrating these changes, in accordance with an explicit axiological horizon (Cucuș, 1996, p. 42).

Throughout history, the course of civilization has been inextricably linked to humanity's ability to acquire knowledge, adapt to change, and constantly strive for improvement. Education and culture have served as essential milestones in this evolution, providing the framework through which the individual has developed his or her thinking, value system, and ability to shape the surrounding reality. Today, society is characterized by an unprecedented dynamism of innovation and an increasingly pronounced interconnection of fields of knowledge. Technology has become deeply integrated into the structure of contemporary culture, reshaping the ways we interact, work, and learn. A new stage of social evolution is thus emerging, marked by digitization and extensive connectivity on a global scale.

The learning process requires an educational framework that supports the exploration, development, and refinement of the technical and professional skills of students and professionals. As a result of analyses regarding: the set of skills needed to address current challenges, the updating of curricula in post-secondary and higher education, and the conclusions of research in the specialized literature, these directions were brought together in a comprehensive initiative entitled "ISE 4.0 Education" (Fig. 2). The project is structured around five major pillars: curriculum, cultural and social skills, applied laboratory activities, participation in academic clubs, and the acquisition of professional experience. The theoretical component focuses on the assimilation of information through courses, bibliographic resources, and digital media, while experiential learning emphasizes practical application, reflection, and the continuous development of skills (Treviño-Elizondoa *et al*, 2023, p. 877).



Fig. 2. ISE 4.0 Education

Source: Adapted from Treviño-Elizondoa *et al*, 2023, p. 877

Education 4.0 has taken shape within the context of the transformations brought about by the current technological revolution, characterized by automation, artificial intelligence, and global interconnectivity. It proposes a flexible educational model, supported by digital tools, in which the teacher becomes a mentor and facilitator, and the student takes on an active role in his or her own development. The emphasis is placed on



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transferable skills, the ability to analyse and adapt, as well as on collaboration and solving complex problems. However, in a climate where technology tends to redefine the very understanding of intelligence, it becomes necessary to reassert the human specificity. While algorithmic processes can replicate certain cognitive functions, they cannot substitute for the consciousness, affectivity, and relationality that define the person. In this sense, meta-learning aims not only at the effective integration of technology but also at the development of ethical judgment, so that digital tools remain subordinate to the dignity and relational vocation of the human being (Herzfeld, 2002, pp. 311–313).

From a complementary perspective, Charles Fadel *et al* (2015, pp. 28–64) view this paradigm as a holistic, integrating approach that transcends the artificial dichotomies between knowledge and skills, and between process and outcome. The curriculum must be rethought so that it combines traditional disciplines with emerging fields, cultivates both depth and interdisciplinary openness, and values character, metacognition, and mind–body balance. Education thus becomes a dynamic framework, oriented simultaneously toward personal fulfilment and social responsibility, integrating global perspectives without ignoring local specificities and promoting systemic thinking capable of capturing the complex interdependencies of the contemporary world.

In line with the integrative perspective proposed by Charles Fadel, there is a need to reconceptualize education from a holistic approach that transcends the traditional divisions between the cognitive, emotional, and ethical dimensions. Recent trends in educational assessment reflect this orientation by expanding the analytical framework beyond strict academic performance to include socio-emotional, cultural, and artistic development. However, the operationalization and rigorous measurement of these dimensions remain problematic, especially in global comparative contexts. This tension highlights the need for a curriculum model capable of integrating the complexity of human development without reducing it to quantifiable indicators (UNESCO, 2015, p. 39).

According to Miranda J. *et al*. (2021, pp. 3–4), Education 4.0 refers to the current phase in which higher education is reconfiguring its processes by integrating innovative pedagogical methods, emerging technologies, and a smart and sustainable infrastructure. The concept is not limited to digitisation, but involves the coherent articulation of four essential components: the development of students' critical skills, the adoption of modern learning strategies, the utilisation of information and communication technologies, and the consolidation of an institutional framework capable of supporting these transformations (Fig. 3). By combining these dimensions in the teaching–learning process, the aim is to optimize the generation and transfer of knowledge, as well as to prepare students for future professional contexts. Thus, Education 4.0 functions as a reference framework for designing educational innovation initiatives adapted to contemporary social and technological dynamics.

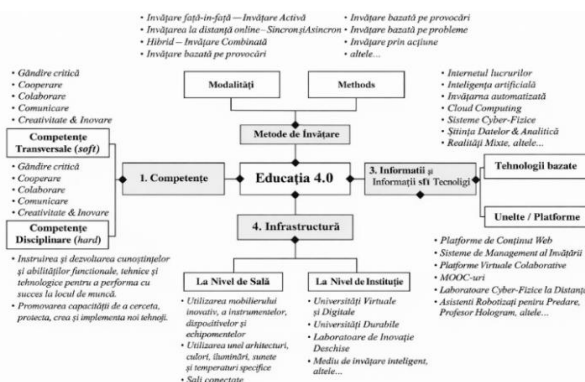


Fig. 3. Key components of Education 4.0 in higher education

Source: Adapted from Miranda J. *et al*, 2021, pp. 3–4)



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The traditional educational system has limitations when it comes to supporting personalized learning, as the teaching process is organized uniformly: students cover the same content at the same pace, completing identical tasks, typically based on a common textbook or course. Research in neuroscience highlights the unique functioning of each brain, which implies significant differences in learning styles and paces. Within this context, artificial intelligence offers considerable potential for the development of educational systems capable of supporting personalized learning. At the same time, online learning and education based on information and communication technologies (ICT), including vocational training, are becoming increasingly widespread. Specialized studies confirm that personalizing the educational process is one of the central directions of e-learning within Education 4.0 (Annuš, 2024, 405). Teaching staff plays an essential role in shaping future generations, which requires them to possess strong digital skills necessary for active participation in a deeply digitised society. The European Commission has developed a European benchmark that defines citizens' digital skills and is widely used for assessment, certification, and the design of training programs, including in the field of education. Educators must not only master these skills but also demonstrate a critical, responsible, and creative use of digital technologies. At the same time, the specific nature of the teaching profession requires advanced digital competencies focused on the design, implementation, and optimization of the educational process. In this regard, DigCompEdu defines the scope of digital skills specific to educators, providing a framework for the strategic integration of digital technologies to innovate and improve pedagogical practices (Redecker, 2017, pp. 8, 15).

However, according to the vision promoted by Priya Sharma (2019, p. 3651), inspired by the model implemented at the University of Paris, higher education is moving toward a deeply digitised, flexible, and decentralised format, with the educator's role being minimal or even non-existent. The traditional campus and the academic structure based on professors, textbooks, and formal courses tend to be replaced by open, permanently accessible learning environments, where students make progress by completing projects and acquiring skills. Assessment is progressive, and the educational journey becomes personalized and autonomous. This emerging trend signals a reversal of the logic of the traditional system: the focus shifts from teaching to applied performance, from academic authority to algorithmically guided self-learning.

During his speeches at the World Economic Forum, Klaus Schwab (2016) emphasizes that technology is not an exogenous force beyond human control, but rather the expression of collective choices that can steer the Fourth Industrial Revolution toward a future compatible with our shared values. However, he warns of the ambivalence of the current historical moment: the transformative potential of innovation is accompanied by profound risks, especially in the absence of strategic and ethical reflection. In his pessimistic scenario, the digital revolution could lead to a "robotization" of humanity, diminishing its moral and spiritual dimension. Such a perspective, however, requires a rethinking of the axiological foundations that structure contemporary culture, so that technological progress is integrated into a vision of humanity that transcends technological reductionism.

Artificial intelligence surpasses conventional software applications through its ability to process massive volumes of data quickly and accurately, using advanced algorithms that support predictive analytics and automated decision-making. Given this potential, numerous educational institutions have launched pilot projects and strategies to integrate AI into academic and administrative processes. Its applicability covers both the design and delivery of educational content, as well as performance assessment, institutional management, and the optimization of educational services. The main stakeholders involved include teaching staff, students, management structures, and the broader academic community. This study analyses the ways in which AI-based solutions can address contemporary challenges and improve the quality of the educational experience in higher education (Sharma *et al.*, 2025, p. 749).

However, the accelerated integration of technology also entails systemic risks. The uncritical adoption of innovation can amplify the fragmentation of dialogue, erosion of trust, and exacerbation of social inequalities, including in access to quality education. In the absence of ethical guidelines and a collective vision, digital transformations can lead to marginalization, curricular irrelevance, and the deepening of existing gaps. Within this context, it becomes necessary to rethink education as the foundation of social renewal, capable of mobilizing knowledge, fostering cooperation, and supporting the development of skills



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for responsible citizenship. Education remains a strategic pillar of sustainable development, contributing to social equity, economic progress, and sustainability (UNESCO, 2021, pp. 9–10).

The German psychiatrist Manfred Spitzer (2020, p. 8) warns of the consequences of non-critical use of digital media, highlighting the alarming rise in video game and internet addiction—a phenomenon that has tripled over the past five years, affecting unemployed young people in particular. Based on his clinical experience at the University of Ulm, he reports cases in which excessive exposure to technology has led to severe deterioration in personal and social life. In the same vein, specialists in South Korea have identified memory, attention, and concentration disorders in young adults, accompanied by emotional flatness, designating this cluster of symptoms as “digital dementia,” a concept that goes beyond mere memory difficulties. The concept refers to a broader impairment of cognitive function, including diminished intellectual performance, weakened critical thinking skills, and difficulties in managing information flow.

2. TECHNOLOGY AS A CULTURAL PARADIGM AND THE NEED FOR THEOLOGICAL DISCERNMENT IN CONTEMPORARY EDUCATION

Discussions on Education 4.0 are largely focused on redefining professional skills and adapting the curriculum to the transformations brought about by Industry 4.0 and the rapid development of artificial intelligence. Some analyses, however, broaden this perspective, emphasizing that the changes affect not only the labor market but the very structure of educational processes, which tend to reflect the dynamics of new technological paradigms. Nevertheless, most approaches remain focused on vocational training, paying limited attention to general education. Within the context of contemporary societies, education is increasingly understood as a continuous process of learning that takes place throughout one’s life and is characterized by open forms of knowledge production, circulation, and reinterpretation. From this perspective, the development of a coherent vision of Education 4.0 cannot ignore the role of general education, from primary and secondary levels to the fields of social sciences and humanities, since it is precisely these educational spaces that enable the development of critical thinking, ethical discernment, and reflection on the anthropological implications of emerging technologies. To this end, the dialogue between educational sciences, research in artificial intelligence, and theological reflection becomes relevant for articulating an educational model in which technological progress is integrated into a broader horizon of responsibility and the integral formation of the individual (Huk, 2021, p. 37).

Faced with these tensions generated by digitisation and the redefinition of educational paradigms, purely technical or managerial solutions prove insufficient. Education 4.0 is not merely an operational phenomenon, but one that is profoundly axiological and anthropological. Therefore, a theological understanding of current transformations is necessary—one capable of providing an interpretive framework for the meaning, purpose, and responsibility of human formation in a technology-dominated context, re-anchoring education in its moral, relational, and transcendental dimensions.

Analysing the cultural transformations accompanying late modernity, the reflections of theologian Emil Brunner (1948, pp. 1–29) take on particular relevance. He observes that Western society is undergoing an unprecedented moment, as it is the first major civilization attempting to build itself deliberately in the absence of explicit religious foundations. While in other cultural contexts social order was underpinned by religious assumptions – whether of Islamic, Buddhist, Hindu, or Christian origin – in the contemporary Western context these reference points have largely faded. In their place, Brunner argues, technology has become the new organizing principle, coming to function as a veritable “metaphysics” of the twentieth century. Such a perspective offers a useful interpretive framework for understanding current shifts in education and culture.

A telling reference for understanding the formative dimension of education from a theological perspective is found in Psalm 32:8, which states: “I will *instruct* you and teach you the way you should go; I will *guide* you and *watch over* you” (BVA). This statement highlights four essential elements that can be related to the demands of contemporary interactive education. First, instruction involves grounding the process in rigorous analysis and the clarification of content, with a view to developing theoretical and practical skills. Learning aims at the systematic transmission of the knowledge and skills necessary to assume



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concrete responsibility. Guidance involves continuous orientation and clarification of the path forward, while oversight expresses the dimension of responsibility and monitoring of progress in relation to a set of principles and an assumed vision. Together, these elements outline an educational model oriented toward purpose, coherence, and full development.

From a theological perspective, the concept of *imago Dei* designates not only a functional aspect of human rationality, but also a relational vocation and a constitutive openness toward transcendence and communion. In this context, the individual cannot be reduced to cognitive performance or processing capacity, since their identity is grounded in their relationship with God and with their neighbor. Therefore, the development of artificial intelligence requires critical discernment: the problem does not lie in technological innovation per se, but in the tendency to attribute to it an ontological status or normative authority. *Imago Dei* thus remains the theological criterion that distinguishes between the legitimate use of technology and its absolutization as a substitute for authentic otherness (Herzfeld, 2002, pp. 311–313).

CONCLUSION

The analysis highlights the fact that Education 4.0 cannot be reduced to a process of institutional digitisation, but must be understood as a paradigmatic restructuring of education in the context of the contemporary technological revolution. The integration of artificial intelligence and adaptive systems brings about significant changes in curriculum architecture, in the dynamics of teaching–learning–assessment, and in the definition of competencies relevant to the knowledge society. At the same time, the emergence of technology as an organizing principle of contemporary culture raises anthropological and axiological issues that transcend the strictly technical sphere. The associated risks of cognitive reductionism, digital dependency, relational fragility, and the transformation of algorithmic performance into a normative criterion point to the need for a critical interdisciplinary framework.

In this regard, the theological perspective offers a distinct contribution, not by opposing technology, but by reaffirming a relational anthropology in which human dignity is not derived from efficiency or information processing. The concept of *imago Dei* functions as a hermeneutical principle distinguishing between the legitimate use of artificial intelligence and its absolutization. Education 4.0 can realize its transformative potential only if technological progress is coupled with ethical responsibility, critical discernment, and an integrative vision of the person. The intersection of educational sciences, advanced technologies, and theological reflection is not an accidental overlap of fields, but a structural necessity for shaping an education capable of simultaneously meeting the demands of innovation and those of affirming human dignity.

In conclusion, reflection on Education 4.0 points to the need to move beyond an interpretation limited to the technological adaptation of training systems. The transformations brought about by artificial intelligence and digital ecosystems affect not only professional skills but also the way in which a person's intellectual and cultural development is understood. Therefore, strengthening general education and fostering critical thinking remain essential for the responsible guidance of technological progress. The interaction between educational sciences, research in advanced technologies, and theological reflection can provide an interpretive framework capable of maintaining a balance between innovation, responsibility, and the affirmation of human dignity.



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BIBLIOGRAPHY

- [1] Almeida, F. (2019). The Role of Serious Games, Gamification and Industry 4.0 Tools in the Education 4.0 Paradigm. *Contemporary Educational Technology* 10(2) 120-136 .
- [2] Annuš, N. (2024). Education in the Age of Artificial Intelligence, *TEM Journal*, 12(1) 404-413.
- [3] Brânzei, D. (2011). *Ghidul familiei creștine*. București: Publishing House Stephanus.
- [4] Brunner, E. (1948). *Christianity and Civilisation*. London: Nisbet & Co.
- [5] BVA – The Bible in the Updated Version
- [6] Christiansen, L., Hvidsten, T. E., Kristensen, J. H., Gebhardt, J., Mahmood, K., Otto, T., Lassen, A. H., Brunoe, T. D., Schou, C., & Laursen, E. S. (2022). A Framework for Developing Educational Industry 4.0 Activities and Study Materials. *Education Sciences*, 12(10), Article 659. source: <https://doi.org/10.3390/educsci12100659>.
- [7] Cucos, C. (1996). *Pedagogie*. Iași: Publishing House Polirom.
- [8] Fadel, C., Biallk M, Trilling B. (2015). *Four-Dimensional Education: The Competencies Learners Need to Succeed*. Boston, MA: The Center for Curriculum Redesign.
- [9] Herzfeld, N. (2003). Creating in Our Own Image: Artificial Intelligence and the Image of God. *Zygon: Journal of Religion and Science* 37(2): 303-316.
- [10] Huk, T. (2021). From Education 1.0 to Education 4.0 – Challenges for the Contemporary School. *The New Educational Review*, 36-46, source: <https://share.google/9CAxYP9KgHbeIPOeJ>
- [11] Lucke, D., Constantinescu, C., Westkämper, E. (2008). Smart factory-a step towards the next generation of manufacturing. In Mitsuishi, M., Ueda, K., Kimura, F. (eds.). *Manufacturing systems and technologies for the new frontier: the 41st CIRP Conference on Manufacturing Systems*, May 26-28, 2008, Tokyo, *Springer*, London: Springer-Verlag, source: <https://doi.org/10.1007/978-1-84800-267-8>
- [12] Miranda, J., Navarrete, C., Noguez, J., Molina-Espinosa, J.M., Ramírez-Montoya, M.S., Navarro-Tuch, S.A. (2021). The core components of education 4.0 in higher education: Three case studies in engineering education. *Computers and Electrical Engineering*, vol. 93, source: <https://doi.org/10.1016/j.compeleceng.2021.107278>
- [13] Redecker, C. (2017). European Framework for the Digital Competence of Educators: DigCompEdu. Yves Punic (ed). *Publications Office of the European Union*, Luxembourg: Publications Office of the European Union, source: <https://data.europa.eu/doi/10.2760/159770>
- [14] Schwab, K. (2016). The Fourth Industrial Revolution: What It Means and How to Respond. Geneva: World Economic Forum. source: <https://www.weforum.org/stories/2016/01/the-fourth-industrial-revolution-what-it-means-and-how-to-respond/>.
- [15] Sharma, P. (2019). Digital Revolution of Education 4.0. *International Journal of Engineering and Advanced Technology* (IJEAT), 9(2) 3558-3564. source: <https://share.google/xs3YQF0EMbyEGlo9W>
- [16] Sharma, S., Singh, G., Chawla, M. (2025). Personalized Learning: Artificial Intelligence Promises Way for Eeducation 4.0 at Global Level. *International Journal of Progressive Research in Engineering Management and Science*, 5(8) 748-755. source: <https://share.google/vLIeNRoRbnFe5Cybu>.
- [17] Spitzer, M. (2020). *Digital Dementia: How New Technologies Disrupt Our Minds*, translated in Romanian by Dana Verescu Bucharest: Humanitas.
- [18] Treviño-Elizondoa, B.L., García-Reyesa, H. (2023). What does Industry 4.0 mean to Industrial Engineering Education? in 4th International Conference on Industry 4.0 and Smart Manufacturing, *Procedia Computer Science Journal*, vol. 217, pp. 876–885, source: <https://doi.org/10.1016/j.procs.2022.12.284>
- [19] Trilling, B., Fadel, C.(2009). *21st Century Skills: Learning for Life in Our Times*. San Francisco, Jossey-Bass.
- [20] TWINKL, Ce este educația? source: <https://www.twinkl.ro/teaching-wiki/educatia>.
- [21] UNESCO, (2015). Rethinking Education: Towards a global common good? Paris: UNESCO, source: <https://doi.org/10.54675/MDZL5552>
- [22] UNESCO, (2021). Reimagining our Futures Together: A New Social Contract for Education. Paris: UNESCO. source: <https://unesdoc.unesco.org/ark:/48223/pf0000379707.locale=en>
- [23] WEF - World Economic Forum. (2020)“ Education 4.0: A Global Framework for Shifting Learning Content and Experiences Towards the Needs of the Future” in *Schools of the Future: Defining New Models of Education for the Fourth Industrial Revolution World Economic Forum*. sursa:https://www3.weforum.org/docs/WEF_Schools_of_the_Future_Report_2019.pdf
- [24] Wurtz, B. (1992). *New Age*. Timișoara: Editura de Vest.



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