الذكاء الاصطناعي والذكاء البشري: تكامل وليس تنافس "رؤية تربوية في ضوء التعليم العالي"

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الملخص :

مع تنامي حضور الذكاء الاصطناعي (AI) في مختلف مناحي الحياة، تصاعد الجدل وبرزت عدة تساؤلات حول طبيعة علاقته بالذكاء البشري، بين من يرى فيه تهديدًا للقدرات البشرية ومن يراه شريكًا معرفيًا يُعزز من الفاعلية وفرصة التكامل. من هنا فإن الهدف من هذه الورقة هو مناقشة فرضية مفادها أن العلاقة بين الذكاء الاصطناعي والبشري يجب أن تُبنى على التكامل لا على التنافس، وذلك عبر تحليل الفروقات الجوهرية بين النوعين، وتسليط الضوء على نماذج تعاونية ناجحة جمعت بين الإنسان والآلة في مجالات عديدة، من بينها مجال التعليم العالي موضوع هذه الدراسة.

اعتمدت الدراسة الحالية على المنهج الوصفي التحليلي، من خلال مراجعة الأدبيات الحديثة التي تناولت الإمكانات التكاملية بين الذكاءيْن، والتحديات الأخلاقية والوظيفية التي تعترض هذا التعاون. وقد بيّنت النتائج أن الذكاء الاصطناعي لا يمكنه بطبيعته الخوارزمية، أن يحل محل الإنسان في مجالات الحكم الأخلاقي، الإبداع، والحدس، لكنه يُعد أداة فعّالة لتوسيع قدرات البشر وتحسين أدائهم، وأن فعالية الذكاء الاصطناعي في التعليم العالي تعتمد بدرجة كبيرة على التوجيه البشري، والتكامل مع الخبرة التربوية، وليس على الاستبدال الكامل.

وتوصي هذه الدراسة بتبني إطار تعاوني تشاركي مستدام تحت ما يسمى بـــ (الذكاء التشاركي(Collaborative Intelligence ، والذي يُعزز التفاعل الإيجابي بين الإنسان والآلة، ضمن إطار أخلاقي وتنظيمي واضح، أيضًا فهو يُعزز من كفاءة الممارسات الأكاديمية مع الحفاظ على الدور المحوري للعقل البشري في قيادة العملية التعليمية.

الكلمات المفتاحية: الذكاء الاصطناعي، الذكاء البشري، التعليم العالي، الذكاء التشاركي التعاوني، التعلم التكيفي.

Artificial Intelligence and Human Intelligence: Complementarity, Not Competition

"A Pedagogical Perspective in Light of Higher Education"

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Abstract

With the growing presence of artificial intelligence (AI) in various aspects of life, controversy has escalated and several questions have emerged about the nature of its relationship with human intelligence, between those who see it as a threat to human capabilities and those who see it as a cognitive partner that enhances effectiveness and the opportunity for integration. Hence, the aim of this paper is to discuss the hypothesis that the relationship between artificial intelligence and humans should be built on complementarity rather than competition. This is achieved by analyzing the fundamental differences between the two types and highlighting successful collaborative models that have brought together humans and machines in various fields, including higher education, the subject of this study. The current study relied on the descriptive analytical approach, through a review of recent literature that addressed the complementary potential between the two intelligences, and the ethical and functional challenges that hinder this cooperation. This study recommends adopting a sustainable collaborative framework called "Collaborative Intelligence," which promotes positive interaction between humans and machines within a clear ethical and regulatory framework. It also enhances the efficiency of academic practices

while preserving the pivotal role of the human mind in leading the educational process.

Keywords: Artificial Intelligence, Human Intelligence, Higher Education, Collaborative Intelligence, Adaptive Learning.

Introduction

Higher education has undergone radical transformations in the last two decades due to rapid developments in digital technology, most notably artificial intelligence (AI). AI tools have become an essential element in designing adaptive learning systems, supporting academic decision-making, and analyzing learner data in a way that allows for personalized learning and improved outcomes (Zawacki-Richter, Marín, & Bond, 2020). In light of these transformations, extensive scientific and philosophical debates have emerged about the future of the relationship between AI and human intelligence, raising serious questions about the possibility of replacing teachers or reducing their role in a digitally augmented learning environment. But what some overlook is that the human brain is one of the most advanced and efficient systems. While AI is able to process massive amounts of data and identify patterns, it lacks the nuanced understanding that humans naturally possess. It lacks emotions, and humans do not make decisions based on reason and logic alone, but human emotional intelligence is capable of successfully handling a complex transaction or leading a team through a crisis (TRENDS, 2025).The mainstream approach that views AI as a competitor to the human mind ignores the true potential of human-machine partnership, made possible by what is known as "collaborative intelligence," a model that combines the algorithmic computational capabilities of machines with the cognitive and creative abilities of humans (Wilson & Daugherty, 2018), so human intelligence, with its mental flexibility, ethical awareness, and contextual expertise, remains an indispensable element in guiding AI, which so far lacks the understanding of complex human contexts, so human capabilities are more expansive.

Unlike AI capabilities that only respond to available data, humans have the ability to imagine, anticipate, feel and judge changing situations, allowing them to shift from short-term to long-term concerns. These abilities are

unique to humans and do not require a constant flow of externally provided data to function as is the case with AI .

Although AI seems to be at odds with human intelligence, they are also complementary. In the context of organizations, both types of intelligence offer a set of specific talents, which are activated as required capabilities to meet performance requirements - needed to achieve optimal performance. It is first and foremost important to emphasize that "talent can win games, but it often won't win championships" the meaning here is clear, which is why we believe that combining the talents inherent in both AI and human intelligence, working in tandem, is what will create the future of smart working. It will create the kind of intelligence that will allow organizations to be more efficient and accurate, and at the same time more creative and proactive. This type of intelligence resulting from the integration of the two intelligences is called augmented intelligence or collaborative intelligence (De Cremer & Kasparov, 2021).

The integration of human and artificial intelligence has become a necessity for countries and individuals, and what we must do is focus on the strengths of these technologies and develop them wisely, while adhering to ethical standards that ensure everyone benefits. AI complements human capabilities with its speed and accuracy in processing and analyzing data, contributing to more rational decision-making. However, human intelligence remains essential in guiding these modern technologies towards humanitarian goals. Through this harmonious cooperation and integration between AI and human intelligence, we can look forward to a prosperous and sustainable future for all, where advanced technologies and human creativity cooperate to achieve achievements that were not possible before, and improve the quality of life comprehensively and profoundly. It is an ambitious vision for the future that deserves to be realized with all our effort and creativity. We also need to invest heavily in education and training to develop human skills in keeping pace with technological changes, and to ensure that AI is an empowering tool that enhances our capabilities and not a substitute for us; innovation, creativity, and human critical thinking are

elements that cannot be replaced by any machine, no matter how sophisticated it is (Muthanna. A, 2024).

Human intelligence represents the innate and mental abilities of humans, which include thinking, analyzing, innovating, remembering, learning, and adapting to different circumstances. Since ancient times, human intelligence has been the main driver of all developments and innovations in various scientific and intellectual fields, and only humans are capable of thinking about complex issues, understanding emotional and social contexts, and making decisions based on their experiences and self-awareness, which allowed humanity to reach the advanced stages of civilization that we witness today, in other words, human intelligence is capable of empathy, critical thinking, understanding moral values, and emotional communication with others, these abilities make humans unique, as it is difficult for machines to possess them, even with the development of artificial intelligence techniques. Humans also have a unique ability to solve issues in unexpected circumstances, as they rely on their personal experience and innovative thinking, which is a limited ability for AI that relies on programming and analyzing data according to specific patterns, so the relationship between AI and human intelligence requires a careful balance to ensure that society benefits from modern technology without harming human aspects and social values.

On the other hand, AI is a set of technologies and systems designed to emulate some aspects of human intelligence, such as the ability to learn, recognize patterns and make decisions based on the analysis of big data. AI relies on techniques such as machine learning, deep neural networks and natural language processing, which aim to make machines understand and behave in ways similar to humans. Although AI does not have the ability to think consciously or feel human, it surpasses humans in some fields, especially those that require processing huge amounts of information in a short time, or performing complex calculations, the relationship between AI and human intelligence is complex, as AI is a technical development that arose due to human intelligence, and it is designed to serve humans and facilitate their daily and professional lives, as it is used to improve work

efficiency in multiple fields, including higher education, Accordingly, (Roll & Wylie, 2016) believe that the most important technological transformation in education has been the use of artificial intelligence, not to solve problems for humans, but rather to help them think about them in a more organized and innovative way. Artificial intelligence is a powerful tool in the hands of man, capable of achieving great achievements and providing innovative solutions to the major issues facing humanity, but at the same time, we must remember that artificial intelligence remains a product of the human intelligence that developed and guided it, and human intelligence remains the origin, and possesses a special value stemming from its complexity and ability to sense, create, and determine values. is a product of the human intelligence that developed and directed it, and human intelligence remains the original, and possesses a special value stemming from its complexity and its ability to sense, create, and define values, and this complex relationship between the two intelligences requires a conscious and responsible interaction from society to ensure the maximum benefit from modern technology while preserving the value of the human being.

According to (Kambhampati, 2019), human-AI collaboration is the practice of combining human expertise with the computational resources of AI to solve complex issues. It is an emerging field that could shape future science, business, and policy approaches, so AI should not ideally replace the human workforce, for example, an AI machine can recognize human emotions that do not utilize their full potential in social awareness, self-assessment, self-management, etc. due to their limited cognitive skills that limit their performance in intelligence and decision-making. (Al-Essi, 2022) also discusses the issue that humans will remain the ultimate decision-maker in the educational environment, regardless of the advancement of algorithms, because educational value depends on human understanding, not just digital analysis.

In higher education specifically, the goal is not to replace teachers or academic administration, but to enhance and optimize their efficiency through learning analytics tools, intelligent recommendation systems, and data-driven adaptive learning (Holmes, Bialik, & Fadel, 2021). However,

realizing this integration requires a thorough understanding of the nature of the relationship between the two intelligences and identifying the ethical and pedagogical norms that govern this partnership.

Therefore, it is important that humans work to develop AI within ethical and human rights limits, as scientists and researchers seek to establish laws and controls that govern the use of AI and prevent its exploitation in a way that threatens human rights or harms society. In addition, emphasis should be placed on education and enhancing human skills in areas that are difficult for AI to imitate, to ensure that AI complements rather than replaces human intelligence, and the organizations that will succeed in the future will be those that use AI wisely while still valuing human employees. AI is not here to replace humans - it is here to help them. The future of work will depend on how well organizations and their employees are able to adapt and use AI as a tool for success. By embracing AI as a complement rather than a replacement, organizations will be able to create a more dynamic and agile workforce. In other words, to ensure a balanced approach, educational institutions should strive to provide proper training, update curricula to include AI fundamentals, and create policies that protect workers while fostering innovation. As AI becomes more integrated into society, human adaptability will be the key to long-term success (Edward, 2025).

In conclusion, we cannot treat AI as a threat to humanity, but rather we must use it as an opportunity to make breakthroughs in various fields of life, especially in the field of higher education; by balancing the power of analysis and accuracy provided by AI with human wisdom and creativity, we can build a better world for all. This is the historical responsibility that falls on all of us, to ensure that technological developments remain at the service of humanity. Therefore, based on the above, this paper aims to provide a modern analytical reading of the relationship between AI and human intelligence in higher education, from an integrative rather than competitive perspective. The paper reviews the theoretical framework, integrative educational models, and future challenges, supporting the transition towards more personalized and effective education.

1. General Framework of the Study

1.1 Study Problem

Despite rapid progress in the use of AI technologies in higher education settings, the relationship between AI and human intelligence remains a subject of widespread epistemological and educational debate. While these technologies promise unprecedented capabilities for data analysis and personalized learning paths, concerns are growing that the role of the academic human will be diminished, transforming the educational process into automated models devoid of human interaction and educational meaning.

Many AI-based applications also lack adequate ethical and educational context, raising questions about fairness, privacy, and algorithmic bias. This coincides with regulatory challenges represented by the lack of clear policies for integrating AI into university systems in a comprehensive and safe manner.

Based on this problematic, the study's problem revolves around: "How can we achieve effective integration between artificial intelligence and human intelligence in higher education, enhancing the quality of academic practices without compromising the human and ethical role of the educational process"?

1.1.1 Study Questions:

This study begins with a central question:

How can we achieve effective integration between artificial intelligence and human intelligence in higher education, contributing to improving the quality of the educational process and addressing the ethical and regulatory challenges associated with such integration?

This main question gives rise to a set of sub-questions:

1. What are the fundamental differences between human intelligence and artificial intelligence in terms of their characteristics and capabilities in higher education?
2. How does educational literature view the philosophy of integrating intelligences? What is the contemporary concept of collaborative intelligence?

3. What are the most prominent successful applied models that embody the partnership between human intelligence and artificial intelligence in higher education?
4. What are the most important ethical and functional challenges facing higher education institutions when integrating AI technologies?
5. What are the future prospects for the human-machine relationship in the university context? What are the requirements for building a smart and sustainable education system؟

1.2 Study Objectives

The current study aims to achieve a number of objectives, including:

1. Clarify the fundamental differences between human intelligence and artificial intelligence in the educational context.
2. Explore the philosophy of "collaborative intelligence" as an integrative model for future university education.
3. Analyze successful applied models for the integration of the two intelligences in higher education.
4. Highlight the ethical and functional challenges that hinder this integration.
5. Present a future vision that enhances the integration of artificial intelligence with human capabilities in university environments.

1.3 Importance of the Study

The importance of this study stems from the topic's relevance and sensitivity in a period of unprecedented digital transformation. The study's theoretical significance lies in its contribution to framing the relationship between human and artificial intelligence within a balanced, integrative model that transcends the dichotomy of "competition and substitution" toward "partnership and reinforcement".

The practical significance lies in providing educational and practical insights that can benefit decision-makers in higher education institutions, faculty members, and researchers interested in artificial intelligence technologies in building smart learning environments that preserve the human dimension, support

educational justice, and direct technologies toward lofty educational goals.

1.4 Study Delimitations

1. Objective Limits

   The study examines the relationship between artificial intelligence and human intelligence from an integrative perspective, focusing solely on higher education, without addressing other educational levels or the technical aspects of artificial intelligence.

2. Methodological Limits

   This study is a theoretical study that relied on a descriptive analytical approach, through analyzing relevant scientific literature and modern sources, without using field tools (such as questionnaires or interviews).

3. Timeline

   The study focused on scientific production and recent trends over the past five years (2016–2025), a period that witnessed a radical shift in the use of artificial intelligence in education.

4. Spatial Limits

   The study examined higher education environments globally and in the Arab world, focusing on experiments and models conducted at universities in developed countries and the Arab world.

1.5 Reasons for Choosing the Topic

1. The researcher's keen interest in this topic, given that "artificial intelligence" is a new topic, sought to delve into its details.
2. The researcher's desire to understand the relationship between artificial intelligence and human intelligence, and to leverage their integration to develop the higher education system, was also highlighted .
3. This was due to the recent surge in interest in its use and the use of its tools by some professors, students, and other groups.

1.6 Study Methodology

The current study relied on a descriptive-analytical approach, through a review of recent literature that addressed the nature of both

artificial intelligence and human intelligence, as well as the complementary potential between these two intelligences, and the ethical and functional challenges that hinder this cooperation.

1.7 Study Terminology

- Artificial Intelligence

  Artificial intelligence is defined as "the ability of machines to perform tasks that normally require human intelligence, such as learning, reasoning, problem solving, and decision making" (Abdul Razzaq, 2024).

  (Gignac, & Szodorai, 2024) also define it as "the maximum capacity to successfully complete new goals through computational operations".

  In addition, (Aqoun, 2024) stated in his book "Artificial Intelligence and Its Advanced Applications" that artificial intelligence "is the ability of a machine to simulate the human mind and its functions, such as its ability to think, discover, and benefit from previous experiences".

  Artificial intelligence is a field of computer science and its systems capable of performing specific tasks that mimic human intelligence and behavior. It has multiple applications in various fields. Its applications can be employed to help researchers reach more accurate and rapid results, while relying on ethical standards that suit researchers in the educational field in Arab and Islamic societies (Al-Makkawi, 2023).

  Artificial intelligence is defined in this study: The use of smart applications in higher education for the purposes of supporting the educational process, improving academic performance, and analyzing learners' behaviors based on big data.

- Human Intelligence

  Human intelligence is defined as "the human ability to learn, think, understand ideas and concepts, and use knowledge and skills to solve problems and make decisions" (Maaid, 2022)

Human intelligence is defined as "the intellectual prowess of humans, characterized by complex cognitive functions and high levels of motivation and self-awareness" (Hashemi, R., and Meliani, A., 2024).

It can be said that "human intelligence is, in general, the mental quality that consists of the ability to learn from experience, adapt to new situations, understand and handle abstract concepts, and use knowledge to control the environment." (Robert, 2025).

The researcher defines human intelligence procedurally as: The pedagogical abilities and academic expertise possessed by faculty members that enable them to guide, interact, and make ethical and pedagogical decisions within the higher education environment.

- Collaborative Intelligence

Collaborative Intelligence (CI) is a concept where humans and artificial intelligence (AI) work together to solve problems, innovate, and make decisions. It leverages diverse perspectives and skills to achieve synergistic outcomes that surpass what either humans or AI could achieve independently. CI emphasizes creating an ecosystem where human expertise and AI capabilities are combined effectively(Askarov,2024).

"Collaborative intelligence is a model of human-machine partnership, where the efficiency of each party is enhanced through continuous collaboration, with the machine taking over the precise computational tasks, while the human retains the ability to judge and interpret" (Wilson & Daugherty, 2018).

The researcher defines it as follows: The distribution of roles between human intelligence and artificial intelligence within higher education institutions, so that the strengths of each party are integrated to enhance the quality of the educational process and achieve advanced adaptive education.

- Higher Education

Higher education is defined in the document of the General Conference of UNESCO at its twenty-seventh session as programs

of study or research training at the post-secondary level, provided by universities or other educational institutions recognized as institutions of higher education by the competent authorities of a State (Saleh, 2024).

It is also known as: the pinnacle of the educational pyramid through which the human capital necessary to serve society and achieve its progress is prepared (Daly & El Morsy, 2023).

(Al-Balout, 2024) identified him as: the highest level of education, and it is the advanced educational efforts and programs that take place at the level of universities, colleges, institutes, and associated centers.

Higher education from the researcher's point of view: The academic environment that includes university programs, scientific research, and interaction between faculty and students, which is used as an applied framework to study the integration of the two intelligences.

- Adaptive learning

Adaptive learning is a methodology for teaching and learning that strives to personalize lessons, readings, practice activities, and assessments for individual students based on their current skills and performance (McGuire, 2021)

Adaptive learning is an educational approach that uses computers as interactive learning devices to organize, allocate, and distribute human resources according to the individual needs of each learner. Computers adapt the way educational material is presented to suit the learning needs of students, as evidenced by their responses to questions, tasks, and experiences. The technology incorporates aspects drawn from various fields of study, including computer science, education, psychology, and brain science (El-Maghawry, 2017)

Adaptive learning, from the researcher's perspective, an innovative teaching method that addresses individual student needs. Content and activities are tailored to each learner's abilities and interests,

enhancing learner support systems and achieving optimal educational outcomes.

2. The Theoretical Framework of the Study

Axis One: Human Intelligence and Artificial Intelligence – A Theoretical Comparison in the Context of Higher Education

Human intelligence and artificial intelligence (AI) represent a unique cognitive system with distinct characteristics, and understanding the relationship between them has become an urgent necessity in light of the increasing overlap in teaching and learning tasks within higher education institutions. Human intelligence is characterized by cognitive flexibility, reflection, social interaction, and non-linear creativity, which are closely related to the learner's experience and dynamic learning contexts (Gardner, 1983). AI, on the other hand, relies on its enormous computational power and data learning algorithms, making it effective in performing repetitive tasks and analyzing large patterns with a precision that surpasses human capabilities.

In theory, human intelligence is based on the interaction between genetics and the environment, and includes multiple modes as in Gardner's theory of multiple intelligences, such as linguistic, social, logical, and others. In contrast, AI is built on mathematical and statistical foundations, where machine learning systems rely on data and repetition to improve performance without awareness of context (Russell & Norvig, 2021).

In higher education, these differences are even more pronounced. While AI can deliver personalized content and analyze student behaviors through Intelligent Tutoring Systems, human intelligence remains the critical element in interpreting results, making ethical and pedagogical decisions, and enhancing the human dimension of learning (Zawacki-Richter O. , Marín, Bond , & Gouverneur , 2019).

Despite its sophistication, AI still lacks concepts such as intuition, values, and intentions, which are inseparable from conscious pedagogical practice. Studies indicate that real effectiveness is achieved when AI is used as a supportive tool for the human mind rather than a substitute for it, within

flexible complementary models that take into account the characteristics of both parties (Holmes et al., 2021).

The comparison between the two intelligences is not an end in itself, but rather a prelude to a better understanding of how roles are distributed in a hybrid learning environment that integrates machine precision and human flexibility, with the aim of improving learning outcomes and achieving more personalized, equitable, and effective learning.

Axis Two: The Philosophy of Integrating Intelligences – From Competition to Cooperation in Higher Education

Recently, educational and technical studies have tended to reconsider the role of artificial intelligence, shifting attention from focusing on its potential risks to highlighting its potential as an effective partner in supporting and enhancing human efforts, especially in the field of higher education. This shift is based on the philosophy of "Collaborative Intelligence", which calls for constructive interaction between humans and machines, rather than exclusion or replacement (Wilson & Daugherty, 2018).

In the context of higher education, the integration of the two intelligences has become one of the most important contemporary cognitive and practical challenges. A university teacher cannot be replaced by an algorithm, as he or she carries emotional, educational, and cultural dimensions that are beyond the ability of AI. However, AI systems can be used to provide real-time feedback, track student performance, and optimize learning patterns (Holmes et al., 2021).

(Al-Essi, 2022) argues that AI in the education environment should not be used as a substitute for the human element, but as a knowledge partner that enhances the quality of the educational process, especially in analyzing data and making evidence-based decisions. (Al-Dulaimi, 2021) argues that effective integration between the two parties requires an educational vision that goes beyond superficial technical uses to strategies that integrate AI into course design, classroom management, and scientific research guidance.

The philosophy of integration is based on the distribution of roles: AI performs tasks that require precision and processing speed, while human

intelligence retains its tasks related to moral judgment, contextual appreciation, and pedagogical solutions. In this way, a balance is achieved between technical efficiency and human wisdom, producing an advanced learning environment that does not exclude either party, but rather builds on their combined strengths.

This philosophical conceptualization - supported by international and Arab experiences - reflects a recent trend towards redefining the relationship between man and machine, leading to a university environment based on intelligent cooperation, not artificial conflict .

Axis Three: Successful collaborative applications between artificial intelligence and human intelligence in higher education

The contemporary reality of higher education reflects a remarkable development in integrating artificial intelligence (AI) technologies into educational practices, but the real value lies not in mere technical use, but in achieving true integration between machine and man, through applied models that enhance the efficiency and effectiveness of the educational process.

Adaptive Learning Systems, which use AI algorithms to analyze student learning data and provide personalized content that is appropriate for the student's level and speed of comprehension. In this model, the role of the human teacher remains pivotal, supervising the results and guiding the educational process according to educational and humanitarian standards (Holmes et al., 2021).

Predictive Learning Analytics, which employs artificial intelligence to predict students' future paths based on performance patterns, has also emerged, enabling faculty members to intervene early and provide appropriate support. A recent study by (Zawacki-Richter et al. ,2019) indicated that this integration contributes to reducing dropout rates and improving learning outcomes.

Educational robots and smart assistants are among the modern applications that support the teacher in responding to repeated student inquiries or performing administrative tasks, without replacing him or her in building educational relationships or providing human guidance. In this

context, (Al-Essi, 2022) study emphasizes that the use of these tools improves time efficiency and enhances the productivity of teaching staff without compromising the essence of the educational process.

AI Recommendation Engines, which are used to deliver personalized scholarly resources to each student based on their academic interests and educational history, are an effective tool in promoting learner autonomy, with human supervision to ensure proper ethical and cognitive guidance (Luckin, Holmes, Griffiths, & Forcier, 2016).

In the Arab world, (Al-Khalidi, 2021) refers to qualitative initiatives in some Gulf universities that combined the use of smart dashboards and predictive performance reports to support faculty members in making more informed and proactive decisions.

These examples, and there is no room for more, but they emphasize that when AI is integrated into a pedagogical context under conscious human guidance, it becomes an enhancement, not a threat, and a partner in improving the quality of higher education, not a substitute for humans in it.

Axis Four: Ethical and Functional Challenges of Integrating the Two Intelligences in higher Education

Despite significant advances in the utilization of AI in university settings, this shift raises a number of ethical and functional challenges that cannot be ignored. The increasing reliance on algorithms to make educational decisions may lead to issues of transparency, fairness, and privacy (Williamsona & Eynon, 2020).

❖Ethical Challenges

One of the most prominent ethical concerns associated with the use of AI in higher education is related to algorithmic bias. AI systems may inadvertently perpetuate patterns of discrimination between students based on their social backgrounds or patterns of digital behavior, especially if unbalanced training models are used (Binns, et al., 2018).

The educational literature also highlights the importance of preserving students' academic privacy, as many analytics systems rely on sensitive data, such as student performance, psychological state, and interactive engagement. (Floridi, et al., 2018) point to the need for clear ethical

frameworks governing how data is collected, who it is shared with, and why.

❖Functional and organizational challenges

Functionally, universities face a challenge related to the redistribution of roles between human and machine intelligence. As reliance on AI tools increases, concerns have arisen among faculty members about losing or diminishing the pedagogical role, especially in aspects related to analyzing performance or making pedagogical recommendations (Popenici & Kerr , 2017).

(Al-Otaibi, 2022) argues that integrating AI into the university system without effective training or clear administrative empowerment may produce a knowledge gap and internal resistance from some academics, weakening the chances of true integration between the two intelligences.

Axis 5: The Future of the Partnership between Human Intelligence and Artificial Intelligence in Higher Education

This theme highlights future trends, technological and pedagogical possibilities, and institutional concepts that outline the features of sustainable integration between man and machine in the university environment.

Talking about the future of higher education is no longer possible in isolation from artificial intelligence, nor from the expected relationship between it and human intelligence in the formulation of academic and administrative practices. Recent trends confirm that the integration between the two parties will represent the backbone of smart university systems that integrate advanced computing and human pedagogical expertise to achieve high-quality, inclusive, and sustainable education (Zawacki-Richter et al., 2019).

❖Collaborative Intelligence as a strategic path'

Leading universities around the world are adopting the "Collaborative Intelligence" model, which is based on the distribution of tasks between humans and machines according to their relative strengths. While AI is entrusted with repetitive, analytical tasks, humans retain the roles of

leadership, moral judgment, and complex context management (Wilson & Daugherty, 2018).

❖Building human capacity to use AI

Universities' investment in AI should not be limited to developing software and platforms, but should also include raising the competence of faculty and curriculum developers, so that they can use these technologies ethically and effectively. (Holmes et al. 2021) recommend integrating AI into university teacher preparation and continuing professional development programs.

❖Hybrid learning ecosystems

(Popenici & Kerr , 2017) suggest that the future of higher education is moving towards hybrid systems, where AI-powered automated learning environments are integrated with traditional and digital classroom models, creating a personalized and rich learning experience.

. ❖Policies and Legislation

Another key feature of the future is the need to develop flexible legislative and ethical policies that govern the use of AI in universities, especially with regard to predictive analytics, academic pathway recommendations, and automatic assessment. (Floridi, et al., 2018) suggest that academic communities are required to establish value frameworks and technical accountability to prevent the uncontrolled use of these tools.

❖From technical empowerment to cognitive empowerment

Finally, the future of the two-intelligence partnership is not limited to the technological aspect, but extends to building a cognitive institutional culture that values algorithmic analysis without losing sight of human judgment, and develops the critical and digital thinking skills of students and faculty alike (Eynon & Young, 2021).

Study Results

1. Artificial intelligence and human intelligence are integrated in higher education through successful application models that include adaptive learning systems, predictive analytics, and intelligent

assistants, without eliminating the role of humans in education or leadership.

2. Artificial intelligence does not possess the capacity for moral judgment or contextual understanding, so human intervention remains necessary to ensure its use is directed safely and effectively.
3. Universities face challenges related to algorithmic bias, privacy, and the loss of human interaction, requiring the development of advanced ethical frameworks and technical accountability.
4. Future trends indicate that the success of higher education depends on the development of so-called collaborative intelligence, which blends technical capabilities with human wisdom.
5. There is a gap in faculty readiness to fully utilize AI, which calls for systematic training and awareness intervention.

Conclusion of Study

This paper highlights the interconnected relationship between artificial intelligence and human intelligence in the higher education environment, through a theoretical and applied analysis of the areas of convergence and integration between the two parties, The presentation demonstrated that artificial intelligence, despite its technical advancements and its ability to analyze data and customize educational paths, cannot be viewed as a direct competitor to human intelligence, but rather as a strategic partner that contributes to developing the educational process and enhancing its effectiveness.

The adoption of artificial intelligence in education does not diminish the role of humans, but rather reshapes it in light of contemporary changes, transforming the teacher from a transmitter of knowledge to a guide and designer of the educational experience. Furthermore, the university environment is now required to revisit its technical and educational structure to keep pace with this transformation and optimize its investment within balanced ethical and legislative frameworks.

Ultimately, we stand at a crossroads, and all we have to do is choose the path that achieves balance and integration between artificial intelligence

and human intelligence, ensuring a more prosperous and just future for all. This is the historic responsibility placed on all of us, to ensure that technological developments continue to serve humanity. In other words, the difference between human and artificial intelligence is fundamental; they are neither synonymous nor interchangeable. Even amid the intense internal debate over the definition of human and artificial intelligence, the differences between them are clear. Therefore, in conclusion, the competition between human intelligence and artificial intelligence is an unrealistic scenario and completely unacceptable fears. Human intelligence and artificial intelligence have different fields of application, and the main goal of artificial intelligence is to enhance human capabilities and help them achieve their goals and provide solutions to the complex challenges in this digital world. Human development enhances creative thinking and the fundamental human values that form the foundation of our development, while the development of artificial intelligence technologies adds the computational and analytical power needed to meet the challenges of our time.

Study Recommendations

Based on the results of this study, the researcher recommends several things, including:

1. Adopting the Collaborative Intelligence model as an institutional framework in universities ensures an integrated distribution of tasks between humans and machines.
2. Design specialized training programs for faculty members on how to employ AI technologies in an effective, educational, and safe manner.
3. Develop legislative and ethical policies that regulate the use of artificial intelligence in higher education, protect learner privacy, and ensure digital justice.
4. Integrating digital ethics education into university curricula to enable students to engage critically and consciously with smart devices.

5. Promote applied scientific research in the fields of intelligence integration, and support partnerships between universities and technology companies specializing in education solutions.

Suggestions

Through this harmonious collaboration and integration between artificial intelligence and human intelligence, we can look forward to a prosperous and sustainable future for all, where advanced technologies and human creativity collaborate to achieve previously unimaginable accomplishments and profoundly improve the quality of life. It's an ambitious vision for the future, one that deserves our full effort and creativity. We also need significant investment in education and training to develop human skills to keep pace with technological changes, and to ensure that artificial intelligence is an enabling tool that enhances our capabilities, not a substitute for us. Human innovation, creativity, and critical thinking are elements that no machine, no matter how advanced, can replace.

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