

REVIEW ARTICLE

Transhumanism as a tool of the new social era: research foresight

El transhumanismo como herramienta de la nueva era social: perspectiva de investigación

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Abstract Transhumanism is a tool for humanizing the digital age that explores how science and technology can expand the limits of human capabilities. In the academic field, this movement invites reflection on the role of universities as engines of innovation and platforms for the evolution of knowledge. This approach approaches transhumanism through a qualitative systematic-narrative review, aiming to offer a broad overview of related studies and highlighting its relevance as an indicator of progress. Transhumanism emphasizes the enhancement of human capabilities through technological integration. It recognizes the importance of developing research competencies in teachers and students to strengthen scientific production and address the challenges of the knowledge society. This movement, which has its roots in enlightened modernity, connects reason and the scientific method with the development of innovations to overcome human limitations, such as aging or restricted intellectual capacities. In this context, universities must lead the way in building a strong research profile and promoting innovative pedagogy that fosters competencies for knowledge creation, interdisciplinary collaboration, and social transformation toward a sustainable and ethical posthuman era.

Keywords transhumanism, digital age, science, technology, innovation.

Resumen El transhumanismo es una herramienta en la humanización de la era digital que explora cómo la ciencia y la tecnología pueden expandir los límites de las capacidades humanas. En el ámbito académico, esta corriente invita a reflexionar sobre el papel de las universidades como motores de innovación y plataformas para la evolución del conocimiento. Este enfoque aborda el transhumanismo desde una revisión sistemática-narrativa cualitativa, con el objetivo de ofrecer una visión amplia de los estudios relacionados y resaltar su relevancia como indicador de progreso. El transhumanismo enfatiza la mejora de las capacidades humanas a través de la integración tecnológica y reconoce la importancia de formar competencias investigativas en docentes y estudiantes para fortalecer la producción científica y abordar los retos de la sociedad del conocimiento. Este movimiento, que hunde sus raíces en la modernidad ilustrada, conecta la razón y el método científico con el desarrollo de innovaciones destinadas a superar las limitaciones humanas, como el envejecimiento o las capacidades intelectuales restringidas. En este contexto, las universidades deben liderar la construcción de un perfil investigador sólido, promoviendo una pedagogía innovadora que fomente competencias para la creación de conocimiento, la colaboración interdisciplinaria y la transformación social hacia una era posthumana sostenible y ética.

Palabras clave transhumanismo, era digital, ciencia, tecnología, innovación.

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Introduction

Transhumanism, as a tool of the new social era, has been known as a movement that exposes the use of technology favorably to extend the limits of normal human capacities. It is an intellectual movement that exposes the development of the natural terms of humanity through technological use and, eventually, the separation of the mind from the human body. While it is true that the term has been historically and circumstantially sectarian, its approach has expanded to various sectors of society. In this sense, this extensive present aims to reveal through an interpretive analysis how transhumanism can be a tool of the new social era from a critical and investigative position.

This leads to visualizing the intended human transformation brought about by transhumanism, which would produce more suitable individuals based on their capabilities. The article aims to present some research on transhumanism, from a perception of change and improvement in university contexts, to construct a research profile and enhance teaching performance. The analyzed texts resulted from a qualitative systematic narrative review that provides a general overview of transhumanism.

As can be seen, the relevance of the researcher's training in the academic field allows for the innovation of knowledge based on learning objects as a tool for pedagogical improvement, combined with the investigative skills built in the actors of the educational task by generating research interest.

Transhumanism

Inevitably, humanity will not be transformed by the technology that proposes to project onto a human the increase of his intelligence by artificial means, modulating his psychological state. The biologist Huxley (1927) introduced the term transhumanist, which refers to the overcoming of humanity under technology. For their part, Cardozo and Gutierrez (2017) argue that for transhumanists, new technologies would have a greater probability of expanding mental and physical capacities, promoting personal growth beyond biological limitations. In addition, it is considered that there are essential motivations to sustain human capacities (Villaruel, 2015). On the other hand, Bostrom (2005) argues that transhumanism is an intellectual and cultural movement that wishes to improve human capacities, which are expressed by incorporating scientific and technological knowledge to create, modify, or validate.

In addition to the use of technology to enhance research skills in university spaces, in terms of pedagogical improvement about this statement, Gutierrez (2017), within his ideas,

realizes that what in turn affects the adequate use of technologies that do not violate human nature so that it does not cease to be precisely human. On the other hand, reflection is enhanced from the vision of the transhumanist researcher (Bostrom, 2011), knowing how to prioritize their capacities and competencies as a basis for productivity, fundamental for the future of scientific activity and achieving the goals in higher education. For Quesada (2018), transhumanism is aware that technologies can be dangerous despite the benefits; therefore, ethics plays a relevant role in guiding the application of technology in human beings. The authors agree on the presence of technology as an "improvement" in higher education contexts where these issues begin to be discussed.

In this essay, technology will be associated with "knowledge." Thus, the motivation for interdisciplinary work as part of a cultural process in the field of research fosters balance in the dimensions of being and affects the quality of support for students while developing research competence to build proposals and innovations in the knowledge society. While it is true, on the one hand, that the university constitutes the appropriate context for meetings and exchange of knowledge, together with the action of the teacher in the field of research, it is the time to generate new knowledge in students and therefore develop research competencies that enable scientific production for the benefit of society. On the other hand, it can be said that students can establish theoretical and practical relationships when knowledge is produced during the research process. It is precisely at this moment that the role of the research teacher plays an essential role by worrying about the meaning that research practice represents in the educational context, the epistemology, the methods, and the commitment to the university to accompany the students in the research process aimed at benefiting the society in which they are immersed.

Empirical evidence from the perspective of authors

Scientific studies on teaching performance, its process in acquiring knowledge for pedagogical optimization, and the transfer of teacher development programs in improving the quality of learning of university students (Feixas et al., 2015) propose models to evaluate teaching performance. The results maintain that teaching is an institutional project aimed at raising the quality of education.

For their part, Campos and Chinchilla (2009) reflected on the importance of rethinking and redefining the systematic training of competencies for research to assume this process

as a key and articulate element in the development of academic programs in higher education. On the other hand, Díaz et al. (2012) investigated the use of ICT in university spaces, the result of which allowed them to sustain that students acquire competencies, become aware of what they have learned, develop skills, and reflect on their learning based on psycho-pedagogical and technological advice.

On the other hand, Tutivén (2018) conducted a study to strengthen the knowledge of socio-formation, teaching, and evaluation strategies in teachers to promote the change from an educational model focused on teaching to an educational model focused on comprehensive training under the challenges of the knowledge society. The research was based on tutoring, which contributes to the comprehensive training of the student. The research developed by Rodríguez et al. (2015) on problem-solving skills, using the Social Problem-Solving Inventory-Revised as a measuring instrument, showed that students increase their acquisition of skills throughout their career with the teacher's support.

The pedagogical model of training in generic competencies, carried out by Montagud and Gandía (2015), shows that when methodological changes are introduced in the teaching guides, and the pedagogical model is assumed, the results indicate that the realization of a more significant number of formative activities affects the learning results of the students. Hernández-Mosqueda et al. (2016) researched the teacher evaluation policies' guidelines to reassign a true meaning through a proposal, which allows continuous teacher development. The results contribute to constructing consensus for decision-making, transcending the consolidation of the educational communities, autonomous work, and teacher professionalization.

For their part, Cancino and Márquez (2015) analyze the academic performance evaluation system, considering that it is relevant and necessary to achieve greater effectiveness and efficiency at an institutional level. In this sense, empirical research processes are implemented to determine the impact of socio-formative rubrics in the performance evaluation to transcend the focus on objectives and content so that education responds to the challenges posed by the knowledge society.

The result reveals that rubrics allow for evaluating performance in executing processes and constitute an opportunity for improving educational practices. For their part, Flores et al. (2016) investigated the evolution and transition of the different instruments associated with evaluating teacher performance, concluding that the evaluation of teacher performance is one of the pillars that can support the quality of the

educational system.

Jara and Díaz-López (2017) base their research on identifying the guidelines of teacher evaluation policies in order to reassign a true meaning through a proposal that allows for continuous teacher development, exalting collegiality, autonomous work, and teacher professionalization. The theoretical foundations presented by the authors allow research to be considered a methodological teaching tool in higher education contexts, a topic that is yet to be debated. With this background, the teacher, in his process of self-constructing knowledge to develop and enhance research competencies in his professional training, should assume his research role to put it into practice in the educational context. Therefore, the change will be observed to the extent that students motivated by research develop competencies during their training process as researchers to construct knowledge.

Presence of transhumanism in research

Technology linked to research shows new statistical methods to support research (Torro, 2016). However, humanity seeks to be better humans, capable of recognizing the importance of the role in society linked to technological development (Warwick, 2016). Therefore, the link between technology and humanity is the opportunity to use objects of knowledge in the formation of the investigative capacities of the teacher to influence the learning of students, enhancing the development of competencies. The self-transformation of scientific and technological advances is recognized in the search for human improvement. Diéguez (2017) explains that technology allows for the transcending of certain limits inherent to the human condition to optimize investigative competencies.

Transhumanism from a philosophical position

Human beings transcend the natural, conceiving situations, promoting ideas, and studying phenomena that open scenarios for humanity. These manifest themselves in a geo-technical form where the subjectivity of man as a researcher is violently imposed.

This is why when we question technology today, it is vital to do so by reflecting broadly on the human being and the sociocultural relationship with the existing artificial. This movement is intertwined with transhumanism since its main characteristic is the study of technology's possibilities to overcome the current evolutionary state and move towards an improved or completely posthuman one.

This leads to transhumanism gaining relevance today

through the positions and statements of enthusiastic and techno-futuristic people, while those who develop transhumanist ideas based on scientific theories or philosophical conceptions generally tend to disseminate their research studies.

In this sense, this position intends to show the transhumanist perspectives from their philosophical contributions. Transhumanism (also known as Humanity) is a relatively new theoretical-scientific and philosophical position. However, its assumptions have matured from the literary sources that have given life to philosophy for many years.

In the case of philosophy, in ancient Greece, with Prometheus or Daedalus, and even medieval thinkers searching for eternal youth or the creation of homunculi) they believed that technical means could improve or enhance humanity in some aspects.

In the Renaissance, we find a paradigmatic example in the philosopher Pico (2019), who already in one of his best-known works, told us:

I have not given you, Adam, a specific form or function. Therefore, you will have whatever form and function you wish. The nature of other creatures I have given according to my desire. But you will have no limits. You will define your own limitations according to your free will. I will place you at the center of the universe, so that it will be easier for you to dominate your surroundings. I have not made you mortal, nor immortal; neither of the earth, nor of the sky. So that you can transform yourself into whatever you wish. You can descend to the lowest form of existence as if you were a beast, or you can, instead, be reborn beyond the judgment of your own soul. (p. 5)

Through these philosophical antecedents, humanism can be illustrated from a rational investigative position, reflecting the important aspect of transhumanism: man's concern to investigate and modify scenarios to give answers, which allows him to transcend exponentially, as well as the importance of science to get out of the intellectual minority.

This reference is transcendental because it is common to associate transhumanism with postmodernity (perhaps because it is confused with posthumanism) since this philosophical current mentions the fall of metanarratives and the loss of a unitary subject that gives meaning to reality. However, transhumanism is not based on any of these assumptions. On the contrary, it sinks its roots in modernity (specifically in late modernity), emphasizing individual freedoms (especially what they call morphological freedom), as well as in the classical humanism of that time.

In addition to emphasizing the desirability of progress

through science and technology, it stresses the great possibility of improving human beings' futures through reason and the scientific method (including technology). In this sense, transhumanism is an extension of enlightened humanism.

In the future, humanity will be radically and constantly changed by technology. We predict the viability of redesigning the human condition, including the inevitability of aging, the limitations of human and artificial intellects, undesirable psychology, suffering, and our confinement to planet Earth. Each of these schemes goes hand in hand with a research process. Therefore, universities are the platform to promote such research without castrating the researcher, respecting individual positions without seeking to limit them from leaving their comfort zone. All research is uncertain; however, it is loaded with a transformative transhumanist vision.

Transhumanism as a new era of research

Gutierrez (2017) alludes that humanity has never lived in a society characterized by scientific and technological development. This is almost obvious. However, what is an investigative advent within the actions and decisions of today, so decisive in the future of our descendants and even our species?

One of the promises of transhumanism within a research perspective of the new was that it refers to superintelligence through supercomputers and, fortuitously, in interface with a human mind. From this, a vast Artificial Intelligence program emerges to strengthen research. Diéguez (2017) explains that what has originated is even setting specific dates for the advent of certain milestones in this process. This fact may be due to an unlimited faith in research linked to technology, clearly the product of an unsatisfied desire of man to transcend, to go beyond, in search of overcoming fear, suffering, and death.

Such research studies are based on technological changes and exponential growth, which exhibits new scenarios in response to social phenomena. This will not only imply an increase in the logic of "more, faster, and better" but will also have a profound qualitative effect on Humanity.

Many of these improvements and enhancements promote quality of life, extend life expectancy, reduce pain, eradicate illness, improve human functionality, and enhance cognitive abilities such as memory or intelligence.

In my personal opinion, transhumanism, as an investigative advent of the new era, allows human beings to have the ability to design their own future in an autonomous way through self-regulating construction. Only a being lacking

the ability to go beyond becomes an incomplete, defective Being; only through enhanced research can time be transcended. To carry out this technical improvement of human beings, transhumanism relies on the advances of what has been known as NBIC: nanotechnology, biotechnology, information technology, and knowledge sciences. It also considers the development of neuroscience, cognitive sciences, and artificial intelligence.

Methodology

A “qualitative, narrative systematic review” was conducted to obtain an overview of research studies on “transhumanism” (Aguilera, 2014). This type of review was characterized by selecting information on the subject in a more or less exhaustive manner. Searches were made in Scielo, EBSCO, Springer, and other databases.

The procedure consisted of entering different databases in Spanish only, using the keywords “investigative competencies” and “transhumanism”, and choosing those found from 1984 to 2018.

It should be noted that some book chapters, despite being from the previous decade, were taken into account because they contained information on the emergence of transhumanism, and the most recent ones were selected because they were related to investigative skills, the central theme of the

research.

The articles and book chapters found were filtered, and only those linked to higher education institutions were retrieved. As this is a qualitative review, a statistical analysis is not presented; the evidence is presented in a descriptive form.

Results and discussion

Knowing that transhumanism requires a deep analysis of reflection and implementation in the field of research, some definitions are presented (Table 1) to reflect on the claims of transhumanism in the 21st century.

The above suggests certain difficulties that could be faced while developing research skills, in the desire to have professionals to transcend in the field of research, based on generating motivation for a research culture in students eager for knowledge to face the opportunities and threats of science. Therefore, it is necessary to have professionals committed and identified with the institutions to give their full potential when expressing their research skills to benefit the educational community and influence the context. Need to talk about research skills in Latin America, most higher education institutions are marginalized from educational globalization, using the products developed by international scientific communities (Bellei, 2013).

This limits the ability to interact creatively with research networks and generate knowledge relevant to science sin-

Table 1. Main contributions to the definition of transhumanism

Author	Concept
More (1992)	“spontaneous order” for the “open society” promotes the decentralization of power and responsibility.
Pearce (1992)	Ethics of hedonistic utilitarianism, a program to eliminate human and non-human animals' suffering through advanced neurotechnology. The idea is that human beings must improve themselves through science and technology, either from a genetic point of view or from an environmental and social point of view.
Huxley (1957)	Regulation of new technologies is needed to achieve security and ensure the benefits are available.
Hughes (2004)	An intellectual and cultural movement that affirms the possibility and desirability of fundamentally improving the human condition through applied reason, developing and making technologies.
Bostrom (2005)	Search for human improvement, physical, mental, moral, emotional, or otherwise, through technological procedures.
Dieguez (2017)	Transcending certain limits inherent to the human condition through technology to optimize investigative skills.
Gutierrez (2017)	Philosophical, ethical, and political reflection to avoid reducing the human
Quesada (2018)	being to an ideal of materialistic and mechanistic perfection.

Note: considering the research of Del Aguila and Solana (2015).

ce only training actions are organized for teacher development. Accelerated technological development and its impact on education are notorious. Therefore, it is necessary to use technology through new pedagogical paradigms and incorporate learning objects as elements of curricular planning, similar to the research of Tutivén (2018).

In this sense, creating spaces to promote significant experiences aimed at reflection, self-criticism, and solving relevant problems in the educational community, as well as collaborative work between the people involved, will not only contribute to the development of interpersonal research skills to transform reality by solving problems in the context but will also be fundamental at the beginning of a process of academic literacy to improve the quality of education. In this context, research skills (Table 2) allow us to reflect on the

exercise of pedagogical practice and delve into knowledge, seeking to improve teaching-learning processes to develop a research culture Feixas et al. (2015) and improve the quality of products in teaching practice.

Therefore, research in the university context promotes the production of knowledge, accreditation, and assurance of educational quality.

Regarding research training, Buendía-Arias et al. (2017) argue that strength lies in applying theoretical knowledge to enhance teaching and learning processes through developing research projects. In this regard, Torro (2016) argues that competencies should be promoted in future professionals to achieve autonomy and responsibility in various contexts, with research competencies being part of them.

Table 2. Development of investigative competence from the transhumanism position

Researcher projection	Competencies
A harmonious relationship between the subjects involved. Interpersonal Ability to generate and disseminate. Sharpen your observation so that your perceptions are selective	Knowledge Communicative
Evaluate your actions, progress, and limitations. Proposes solutions to problems Detect, demonstrate, and put into action	Reflective Observational Propositive
Hierarchization gives meaning to qualitative data and develops categories of meaning.	Analytical procedures
Selects and manages data collection techniques, as well as the use of technological software. Understand, know, analyze, compare, and evaluate theories, trends, and methodologies linked to cognitive and intellectual processes.	Cognitive technology

Research in the field of teacher development models and the impact of training presents a range of empirical knowledge, as Cancino and Márquez (2015) argue, validated how training should be designed and what attention should be paid in order to discover the effectiveness and impact of that training. Learning objects are a tool for developing research since the value of information as a learning resource has created the need to have it available, share it, and reuse it. This is how Learning Objects meet characteristics that allow optimal use in the disciplinary field to build new knowledge (Quesada, 2018).

In practice, the teacher is expected to guide learning, have critical awareness, seek pertinent actions to improve educational reality, promote thinking groups to share scientific constructions, and put values into practice in their professional life. Thus, how to train and develop competencies in future professionals to carry out research that responds to local,

national, and international requirements Bostrom (2005); the contribution for researchers is that Learning Objects allow the articulation between research and pedagogical practice in developing a research culture to become aware of the role they must assume as self-critical teachers in developing skills and abilities in students, strengthening competencies to generate interest in research.

However, the lack of knowledge about the management or proper use of this tool by teachers and students will affect the process of building research skills and, therefore, the quality of research. Therefore, developing research skills allows judgments to be governed by a rationality that helps to abandon the unscientific attitude with predetermined interpretations, a process that, in turn, results in the questioning and modification of beliefs that usually bind human beings.

Therefore, rethinking the formation of education research

implies a break from the traditional way of conceiving science and the production of knowledge and adopting a political stance regarding the social function of knowledge. This allows for clarity regarding the role of research in social development and a deeper understanding, from a hermeneutic reflection, of the implications of the conceptual categories that account for transdisciplinarity in educational research.

Conclusions

The advent of transhumanism in university contexts enables the success of Higher Education Institutions in terms of the quality of their productions and projects that respond to social and cultural needs. However, research skills must be built continuously and systematically to strengthen the research profile of teachers and students motivated by this line of knowledge, considering the pedagogical scope in university spaces. In this digital world, the possibility of using learning objects opens opportunities for communication in teaching and learning. Therefore, there is a need to motivate empirical research processes from socio-formation that contribute to consolidating the methodology of socio-formative rubrics as a response to the formation of competent, comprehensive people with a solid ethical life project to face the challenges of the knowledge society. The following are considered relevant in the researcher's competencies: research capacity in terms of theoretical foundation, the practicality of a project, ability to disseminate research, training, and direct human resources in the field of research, and forming research groups to generate publications in intra- and inter-institutional, national and international collaborative actions. This is how research is incorporated into the academy, based on the construction and reconstruction of transformative research actions in social development from a scientific perspective. It is necessary to strengthen the student's ability to problematize, manage knowledge, value the relevance of research, and sustain well-founded ideas. Therefore, the knowledge society should allow for reflection on the development of competencies in constructing a research culture aimed at developing university academic processes.

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Conflicts of interest

The authors declare that they have no conflicts of interest.

Author contribution

Conceptualization: Abreu, J. R., Marín, C. M., & Verdu, D. E. **Data curation:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Formal analysis:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Research:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Methodology:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Supervision:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Validation:** Verdu, D. E. **Visualization:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Writing the original draft:** Abreu, J. R., Marín, C. M., & Verdu, D. E. **Writing, review and editing:** J. Abreu, J. R., Marín, C. M., & Verdu, D. E.

Data availability statement

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Statement on the use of AI

The authors acknowledge the use of generative AI and AI-assisted technologies to improve the readability and clarity of the article.

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