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Artificial Intelligence and Access to University Education for Persons with Disabilities in Venezuela

Inteligencia artificial y acceso a la educación universitaria de las personas con discapacidad en Venezuela

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ABSTRACT

The admission and continued enrollment of persons with disabilities in Venezuelan universities depend on accommodations that artificial intelligence can make cheaper or more costly, since the same tool that transcribes a lecture may exclude those who cannot access it. The study therefore set out to analyze the right of persons with disabilities to university education in Venezuela through the use of artificial intelligence as assistive technology. A qualitative, documentary and legal-hermeneutic approach was applied to twenty-one sources, comprising four legal instruments and seventeen peer-reviewed articles. The results show that the Venezuelan legal system recognizes the right but does not regulate university digital accessibility or the use of artificial intelligence as a reasonable accommodation. The study concludes that this technology only realizes the right when it is embedded in an institutional policy with funding, training and data.

Descriptors: rights of the disabled; artificial intelligence; higher education; access to education; inclusive education. (Source: UNESCO Thesaurus).

RESUMEN

El ingreso y la permanencia de las personas con discapacidad en la universidad venezolana dependen de ajustes que la inteligencia artificial puede abaratar o encarecer, por cuanto la misma herramienta que transcribe una clase puede excluir a quien no accede a ella. Es así que el estudio se planteó como objetivo analizar el derecho de las personas con discapacidad a la educación universitaria en Venezuela a partir del uso de la inteligencia artificial como tecnología de apoyo. En este sentido se empleó un enfoque cualitativo, documental y hermenéutico-jurídico sobre veintiuna fuentes, cuatro normas y diecisiete artículos arbitrados. Entre los resultados se obtuvo que el ordenamiento venezolano reconoce el derecho, pero no regula la accesibilidad digital universitaria ni el uso de la inteligencia artificial como ajuste razonable. Entre las conclusiones se estableció que esa tecnología solo realiza el derecho cuando se integra a una política institucional con financiamiento, formación y datos.

Descriptores: derechos de los impedidos; inteligencia artificial; enseñanza superior; acceso a la educación; educación inclusiva. (Fuente: Tesauro UNESCO).

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Research Articles Section

INTRODUCTION

Venezuelan universities face a question that a decade ago seemed the stuff of science fiction, namely whether a program capable of reading aloud, summarizing a text or transcribing a lecture in real time can become the accommodation that allows a blind, deaf or dyslexic student to pursue a degree on equal terms; hence the topic requires a legal and not only a pedagogical examination, because the Asamblea Nacional Constituyente (1999) recognized in Article 81 the right of every person with a disability to the full and autonomous exercise of their abilities, together with the right of deaf persons to communicate in Venezuelan sign language, and established in Article 103 that everyone has the right to a comprehensive, quality education, “on equal terms and with equal opportunities”, with equal attention to those who have special needs or disabilities.

At the international level, the United Nations (2006) adopted the Convention on the Rights of Persons with Disabilities, whose Article 24 obliges States Parties to ensure general access to higher education without discrimination and to provide reasonable accommodation to that end, while Article 9 extends accessibility to information and communications, including the technologies that support them. On its scope, Damiani Pellegrini (2023) recalls that the Convention and its Optional Protocol were adopted in resolution 61/106 of December 13, 2006 and have been in force since May 3, 2008, and presents it as the first international protection instrument that classifies discrimination on the basis of disability as a human rights violation, on the understanding that disability is “essentially a social construction”; Villarroel Aramayo (2024) takes this idea to the operational level by linking substantive equality with reasonable accommodation. What does this mean for a university? That a lecture platform without subtitles or a repository that does not support screen readers constitutes a legal breach, and not a simple lack of resources.

Domestic law followed a parallel path, since the Law for Persons with Disabilities, published in Official Gazette 38.598 of January 5, 2007 (Asamblea Nacional, 2007), and the Organic Law of Education of August 2009, which recognizes special education as a modality of the system (Asamblea Nacional, 2009), predate by several years the arrival of generative artificial intelligence in classrooms. On this point, Romero Chico and Pascucci Stelluto (2019), comparing the Venezuelan

regime in force since January 5, 2007 with Ecuador's Organic Law on Disabilities, note the need to improve the determination of degrees of disability and to base public policies on updated data, an observation that remains valid when the problem is transferred to the university classroom and its digital tools.

But what does artificial intelligence contribute to this regulatory picture? The two broadest reviews in the corpus answer with figures, since Dumitru et al. (2025) analyzed twenty-seven works published between 2020 and 2024, grouped into themes ranging from personalized learning to institutional barriers, and Dang (2026), with forty-seven studies screened from 1,847 records under the PRISMA-ScR protocol, counted fourteen on large language models, eleven on speech processing and nine on intelligent tutoring, although he also found algorithmic bias, cost gaps, institutional policy gaps and students with disabilities excluded from the design of the tools.

And Venezuelan universities? From the doctoral program in education at the Universidad Central de Venezuela, Rodríguez et al. (2024) examined sixteen peer-reviewed articles in five categories, including intelligent tutoring systems and ethics in information searching, and warned about plagiarism and non-authentic content, while Vera and Velasco (2024), in the same special issue of Areté, argue that collaboration between human and artificial intelligence is essential to achieve inclusive educational solutions. Neither of the two works addresses students with disabilities, a gap that justifies the present study, since the incorporation of artificial intelligence into Venezuelan universities is advancing without a framework that connects it with accessibility and reasonable accommodation obligations.

Based on the above, the research aims to analyze the right of persons with disabilities to university education in Venezuela through the use of artificial intelligence as assistive technology.

METHOD

The methodology used is qualitative, with a documentary design and a legal-hermeneutic approach, applying systematic interpretation to contrast the obligations that the legal system imposes on universities with the functions and risks that the literature attributes to artificial intelligence as assistive technology. Accordingly, a

corpus of twenty-one sources was assembled, with the units of analysis being four legal instruments, namely the 1999 Constitution, the Convention on the Rights of Persons with Disabilities, the Law for Persons with Disabilities and the Organic Law of Education, together with seventeen articles published in peer-reviewed journals between 2019 and 2026. The inclusion criteria were relevance to the right to education of persons with disabilities, to artificial intelligence in universities or to the Venezuelan context, peer-reviewed publication and verification of the DOI in the Crossref registry, excluding gray literature.

The technique was content analysis, organized into four axes defined before reading the corpus (rights framework, evidence on artificial intelligence as support, institutional barriers and Venezuelan university context), which made it possible to scrutinize each source with the same recording matrix, identifying in each axis the legal obligation, the available evidence and the gap detected. Table 1 presents the distribution of the corpus; the model in Figure 1 constitutes an interpretive proposal by the author based on the findings.

Table 1. Distribution of the corpus by axis and type of source.

Axis of analysis	Legal instruments	Articles	Total	Sources
Rights framework	4	4	8	Asamblea Nacional Constituyente (1999); United Nations (2006); Asamblea Nacional (2007, 2009); Damiani Pellegrini (2023); Villarroel Aramayo (2024); Álvarez Robles (2023); Romero Chico and Pascucci Stelluto (2019)
Artificial intelligence as support	0	6	6	Dumitru et al. (2025); Dang (2026); Papadopoulos et al. (2024); Aguilar Trejo and Jácome Ávila (2026); Borba Franco et al. (2025); Sánchez Mendiola and Carbajal Degante (2023)
Institutional barriers	0	4	4	Ndibalema and Kambona (2025); Pérez-Castro (2021); Arellano Cárdenas and Herrera Fernández (2024); González Garrido (2024)
Venezuelan and regional university context	0	3	3	Rodríguez et al. (2024); Vera and Velasco (2024); López Regalado et al. (2024)
Total	4	17	21	

Note. Each source was assigned to its predominant axis. Developed in-house based on the corpus (2006-2026).

ANALYSIS OF RESULTS

A systematic reading of the rights framework shows that the Venezuelan legal system unambiguously recognizes the right of persons with disabilities to education

on equal terms, although it formulates it in general terms that do not descend to the university level or the digital environment. The Constitution guarantees equal opportunities and attention to persons with disabilities (Asamblea Nacional Constituyente, 1999), the 2007 special law develops the integration of this population (Asamblea Nacional, 2007) and the education law places specialized attention within a modality of the system (Asamblea Nacional, 2009); it is the Convention that specifies access to higher education and the obligation of reasonable accommodation (United Nations, 2006), and Álvarez Robles (2023) shows, from the Spanish experience, that even with abundant regulations, effectiveness in universities requires reforming their internal rules and training their staff. This indicates that in Venezuela the gap lies not in the recognition of the right but in its regulatory translation to the university sphere.

Artificial intelligence as assistive technology

What can artificial intelligence do for this right? Table 2 relates each legal obligation to the support functions documented in the literature and to the risk those functions introduce, because the same tool can serve as a reasonable accommodation or as a new barrier depending on how it is incorporated.

Table 2. Correspondence between legal obligations, artificial intelligence functions and risks.

Legal obligation	Documented support function	Associated risk	Source
Accessibility of information and communications (CRPD, Art. 9)	Speech-to-text conversion, screen reading and image description	Transcription errors and dependence on connectivity	Dang (2026); Papadopoulos et al. (2024)
Reasonable accommodation in higher education (CRPD, Art. 24)	Adaptive tutoring and personalization of study pace	Generic accommodation that does not respond to the specific need	Dumitru et al. (2025)
Equal opportunities (CRBV, Art. 103)	Use of generative artificial intelligence to overcome academic barriers	Sporadic and unequal use among students	Aguilar Trejo and Jácome Ávila (2026)
Communication in sign language (CRBV, Art. 81)	Speech and language processing	Tools not trained in Venezuelan sign language	Dang (2026)
Participation of persons with disabilities	Design of tools with the users themselves	Exclusion from design and algorithmic bias	Dang (2026)

Note. CRPD: Convention on the Rights of Persons with Disabilities; CRBV: Constitution of the Bolivarian Republic of Venezuela. The relationship with Venezuelan sign language is the author's inference. Developed in-house.

Empirical evidence supports the central column of the table, albeit with relevant nuances. Papadopoulos et al. (2024) interviewed forty-two university students with

visual, hearing and motor disabilities and specific learning difficulties in Germany, Greece, Italy and Spain, and identified the assistive technologies they know, use or want both at university and at home; in Mexico, Aguilar Trejo and Jácome Ávila (2026) studied all the students with disabilities in a bachelor's program at the Universidad Veracruzana and found an apparently sporadic use of generative artificial intelligence, although some of them use it precisely to mitigate existing barriers. In Uruguay, the survey by Borba Franco et al. (2025) of 150 primary and secondary school teachers showed a three-to-one contrast, since 60% of those who used artificial intelligence frequently perceived improvements in inclusion compared with 20% of those who did not use it ($\chi^2 = 25.34$; $p = .001$), although these are teachers' perceptions and not learning outcomes.

Is this evidence enough to make decisions in Venezuela? Sánchez Mendiola and Carbajal Degante (2023), in the special issue of Perfiles Educativos devoted to the topic, observe that no innovation had spread as quickly as ChatGPT and that formal research on its use is just beginning, and López Regalado et al. (2024) started from 917 publications indexed in Scopus, WoS and PubMed between 2019 and 2023 to retain 59, with a predominance of China, Spain and the United States. Consequently, the evidence available to guide decisions in Venezuela comes from contexts with different material conditions, and its transfer requires caution.

Institutional barriers

Table 3 brings together the barriers documented in the literature and their projection onto Venezuelan universities, a projection presented as the author's reading and not as measured data.

Table 3. Documented institutional barriers and their projection in the Venezuelan context.

Barrier	Evidence	Projection in Venezuela	Source
Insufficient funding	Limited access to assistive technologies and low institutional capacity	Dependence on free tools and on the student's connectivity	Ndibalema and Kambona (2025)
Insufficient training	Few training opportunities for teachers and students	Use without pedagogical guidance	Ndibalema and Kambona (2025)
Inaccessible information	Reduced learning opportunities and support during the pandemic	Remote education without accommodations as an immediate precedent	Pérez-Castro (2021)

Barrier	Evidence	Projection in Venezuela	Source
Lack of data	Lack of data to systematize the progress of inclusion	Impossibility of assessing the effect of artificial intelligence	Arellano Cárdenas and Herrera Fernández (2024); Romero Chico and Pascucci Stelluto (2019)
Absence of specific university regulations	Need for ad hoc regulations, universal design for learning and reasonable accommodation	University regulations without provisions on digital accessibility	González Garrido (2024)

Note. The projection column corresponds to the author's interpretation. Developed in-house based on the sources cited.

Ndibalema and Kambona (2025), in a review of twenty-three empirical studies, concluded that the access of students with disabilities to assistive technologies is limited by insufficient funding, poor training of teachers and students and stigmatization arising from community ignorance, factors that together reduce institutional response capacity. In parallel, Pérez-Castro (2021) contributes by arguing that the pandemic aggravated the lack of accessible information and the scarcity of support and accommodations for university students with disabilities, while Arellano Cárdenas and Herrera Fernández (2024), after interviewing heads of inclusion units and twelve students with disabilities from three universities in Santiago de Chile, observed tensions between policy discourse and student experience, as well as a lack of data that prevents measuring progress. For the Peruvian case, González Garrido (2024) supports this conclusion by recalling that in that country only 11% of persons with disabilities over the age of 15 pursue higher education, and by identifying in eleven university experiences the need for specific regulations, universal design for learning and a favorable attitude toward inclusion.

Figure 1 integrates these findings into a model that the author calls algorithmic reasonable accommodation, in which the artificial intelligence tool only realizes the right when it rests on four successive institutional conditions.

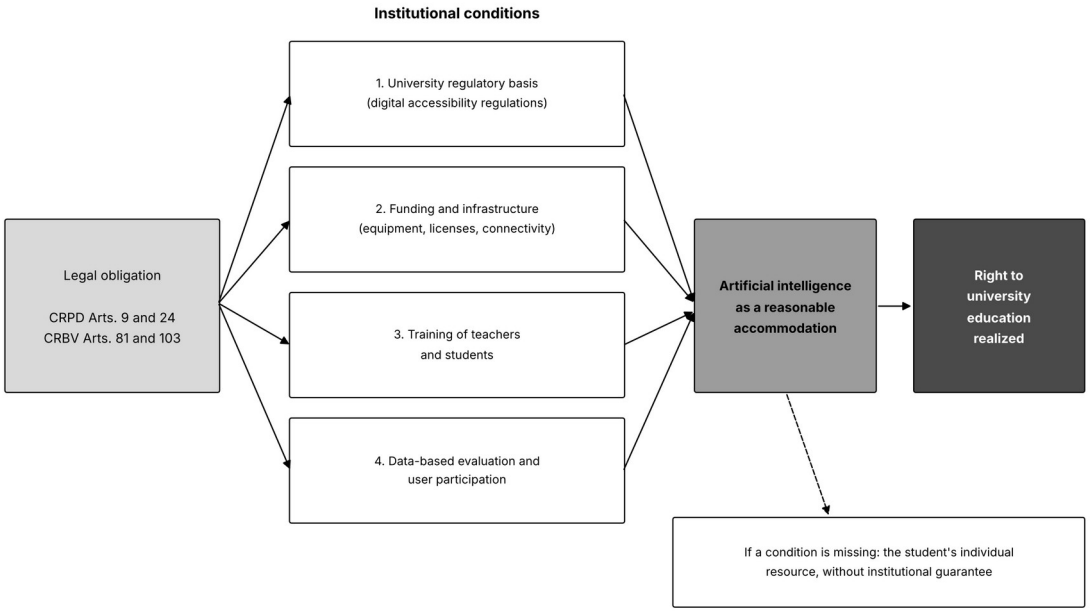


Figure 1. Model of algorithmic reasonable accommodation for Venezuelan universities.
Note. Interpretive proposal by the author based on Tables 2 and 3.

DISCUSSION

The results support the view that artificial intelligence reduces the cost of some reasonable accommodations, such as lecture transcription or text conversion, which previously required specialized staff or expensive equipment, and in that sense it can bring Venezuelan universities closer to compliance with Article 24 of the Convention. It is naive to think, however, that the availability of a tool is equivalent to an accommodation, because reasonable accommodation, as understood by Villarroel Aramayo (2024), is a response to the specific need of a person, whereas the tool is generic; Dang (2026) and Dumitru et al. (2025) agree that effectiveness depends on institutional adoption and on user participation in design.

Who is responsible when the tool fails? Article 24 of the Convention requires the State Party to ensure reasonable accommodation, so that if a university refers its students to free applications that depend on each student's phone and mobile data, the burden of the accommodation returns to the rights holder; therefore, in the author's view, each university should set out in its regulations which tools it offers, with what budget, with what training for its staff and with what mechanism errors or biases affecting a specific student are corrected.

The Venezuelan case presents a documentary peculiarity, since the two national works in the corpus, published in the 2024 special edition of Areté, discuss artificial intelligence without mentioning students with disabilities (Rodríguez et al., 2024; Vera and Velasco, 2024), and the comparative study by Romero Chico and Pascucci Stelluto (2019) already called for updated data for public policy on the matter. How can one know, without a register of students with disabilities and their support needs, whether a tool broadens or restricts access? That register precedes any technology acquisition.

CONCLUSIONS

Among the conclusions, Venezuela has broad normative recognition of the right, ranging from Articles 81 and 103 of the 1999 Constitution to the 2007 Law for Persons with Disabilities and the 2009 Organic Law of Education, complemented by Articles 9 and 24 of the 2006 Convention on accessibility and reasonable accommodation in higher education, although none of these texts addresses university digital accessibility or artificial intelligence.

It was likewise established that the international evidence on artificial intelligence as support, gathered in reviews of twenty-seven and forty-seven studies, combines benefits in personalization and format conversion with algorithmic bias, costs and policy gaps, barriers that Venezuelan universities would face without regulations that anticipate them.

Finally, it is concluded that the proposed algorithmic reasonable accommodation requires a regulatory basis, funding, training and data-based evaluation for the tool to operate as an institutional guarantee and not as a private resource of the student. It remains to gather empirical information in Venezuelan universities, where the corpus found no peer-reviewed studies on the topic.

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Non-monetary.

CONFLICT OF INTEREST

The author declares that he has no conflict of interest in relation to this research.

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