The Role of Artificial Intelligence in Promoting Accessibility for Students with Disabilities:

The Landscape of Inclusion in Vocational and Higher Education

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The Challenge of Inclusion

Despite institutional advances,
barriers related to communication, pedagogy, and technology persist

➪ compromising access, retention, and academic success for students with disabilities.

Dropout rates in Portuguese and Brazilian higher education **exceed the general average**, largely due to limited digital accessibility and insufficient pedagogical support.

Physical Barriers

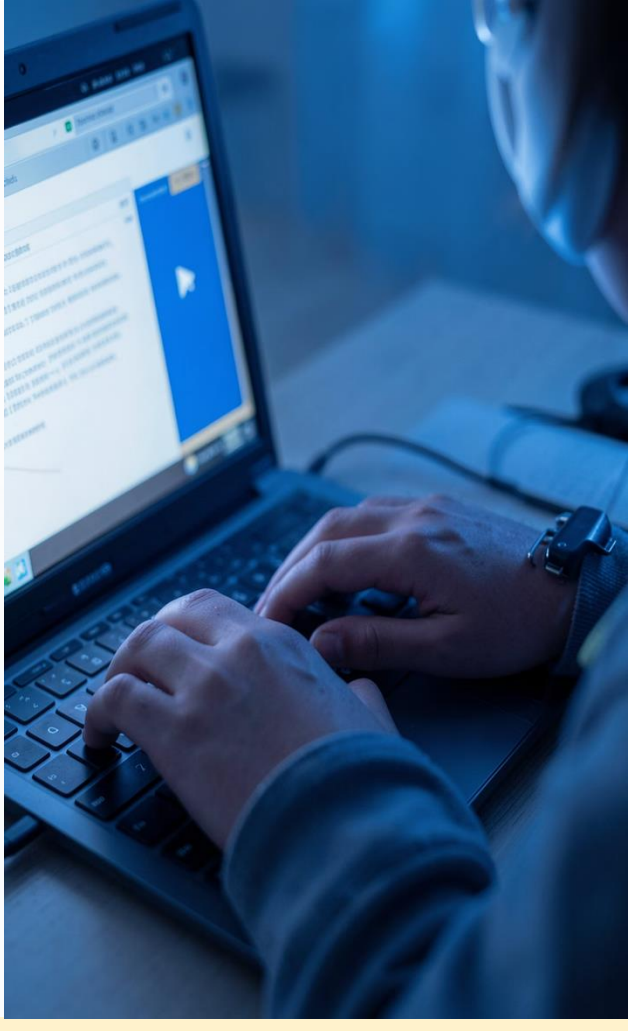
Infrastructure and access limitations

Communication Gaps

Pedagogical and linguistic challenges

Technology Divide

Low adoption of assistive digital tools



Three Phases of AI in Education

AI has evolved from **passive** content consumption to **active**, large-scale knowledge production — but **pedagogy must guide AI use**, not the other way around.

1

Reactive AI (2021–23)

Chatbots as conversational search engines; focus on academic integrity

2

Contextual GenAI (2024–25)

RAG enables verified, institution-grounded responses; reduces hallucinations

3

Agentic AI (2026–Present)

AI agents autonomously plan curricula and monitor student progress in real-time

PEDAGOGICAL FRAMEWORK

From TPACK to I-TPACK

Traditional TPACK focused on the intersection of content and technology.
I-TPACK (Intelligent-TPACK) adds a critical new dimension: ethical knowledge and algorithmic literacy.

Algorithmic Discernment

Educators must audit automated logic, not just consume AI tools

Digital Plastic

AI content is malleable - teachers act as critical curators, transforming raw output into reliable material

Responsible AI: Global Frameworks

EU European Union

AI Act + Ethical Guidelines: risk-based regulation, transparency, fairness, and human-centered AI

PT Portugal

AI Portugal 2030: digital literacy, inclusion, and lifelong learning from basic to higher education

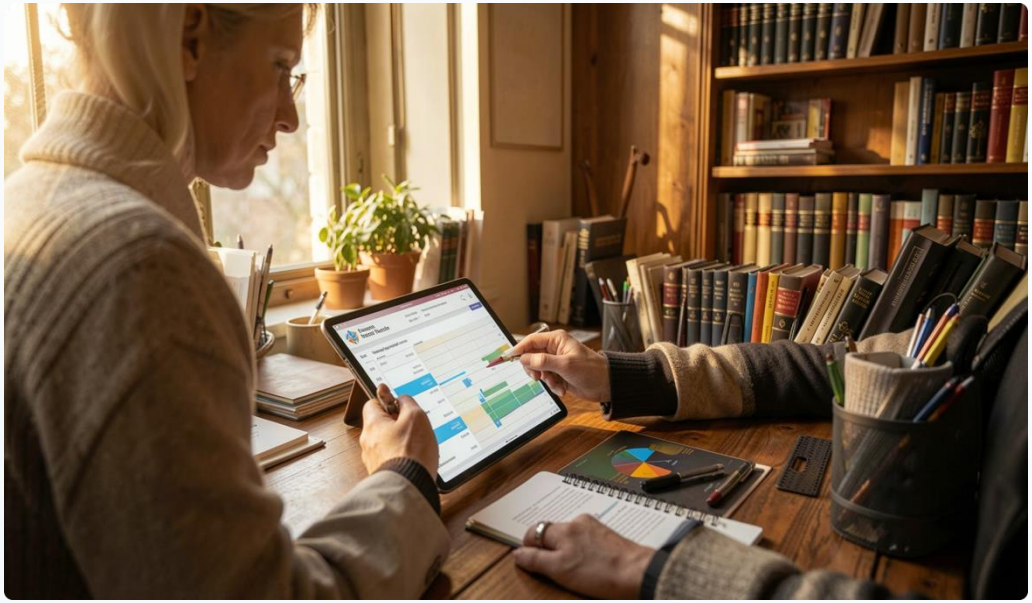
BR Brazil

MEC Framework: equity, privacy, accessibility, and continuous teacher training; warns against "metacognitive laziness"

All three converge on three core principles:

transparency, process documentation, and critical reflection

Research Methodology



Approach

Mixed-methods (quantitative + qualitative), exploratory-descriptive

Population at UFSM

~800 students with disabilities (physical, visual, hearing, intellectual, ASD, giftedness, fibromyalgia)

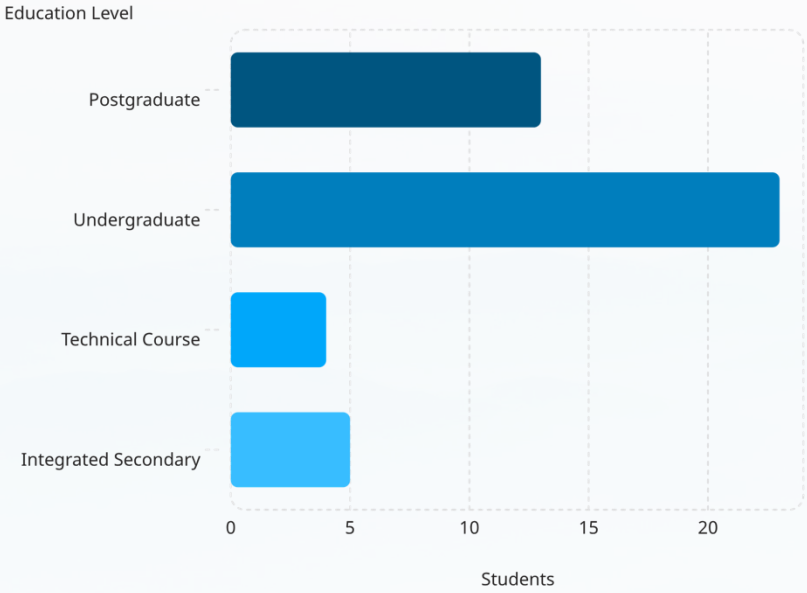
Participants

45 students surveyed (Nov–Dec 2025), convenience sampling

Instrument

Digital questionnaire on AI awareness, tool usage, and ethical concerns

Who Participated?



Participant Breakdown

Of 45 participants: **51.1%** undergraduates, **28.9%** postgraduates, **11.1%** integrated secondary, and **8.9%** technical course students.

Participants were finishing classes near the Christmas and Summer holidays, which may have affected response rates.

Key Findings: AI Awareness & Use

100% = 45 students

95.6%
43 students
Heard of AI

73.3%
33 students
Used AI Tools

57.8%
26 students
Basic Knowledge
Only 4.4% advanced

66.7%+
30 students
Unaware of Accessibility AI Tools
Across all specialized categories

Most-used tools: **Gemini** (chatbots), **Perplexity** (literature), **Canva/Gamma AI** (visuals). Only **5 students** use dedicated accessibility tools (e.g., Be My Eyes). Yet **53.3%** believe AI can offer greater autonomy to people with disabilities.

Discussion: Promise & Concern

Untapped Potential

Students use AI for general productivity, not as tailored assistive resources — a significant implementation gap

Ethical Fears

Hallucinations, "outsourcing of critical thinking", and amplified programmer biases — especially concerning for students with ASD

Institutional Role

Universities must move beyond providing tools to **fostering a culture of critical, creative AI use** — aligning with SDGs 4 and 10

Conclusions & Recommendations

AI's potential for accessibility at UFSM is **promising but incipient**. Bridging the gap requires intentional action.

1 Targeted Training

Programs for students and teachers on specialized AI accessibility tools

2 Ethical Framework Adoption

Use Brazil's MEC Framework to guide policy and mitigate bias and "metacognitive laziness"

3 Inclusive Development

Ensure people with disabilities co-design AI tools and training to avoid amplifying prejudices

Next step: A training seminar on AI tools for students with disabilities and a training unit for UFSM Accessibility Center professionals. Other workshops and training courses are also being offered…

Thank you

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