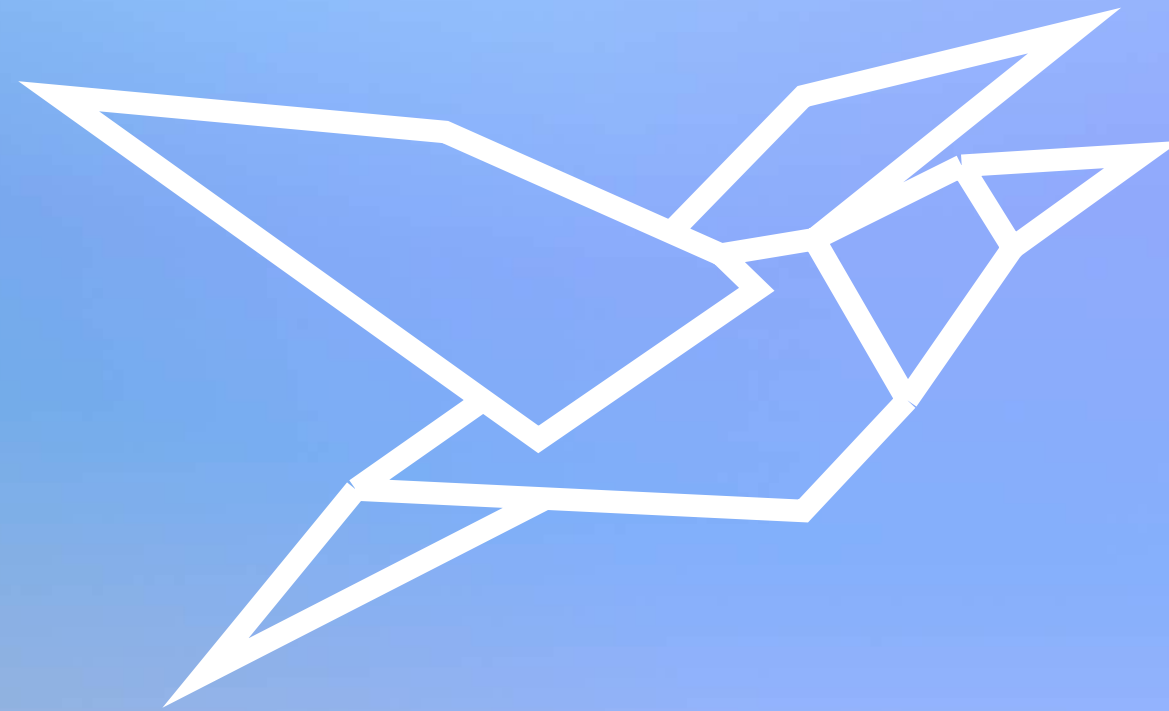


Philly CodeFest

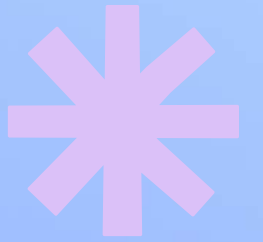


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Transforming Text into Immersive Learning Experiences

INTRODUCTION



Outdated textbooks and language barriers make learning a distant dream.



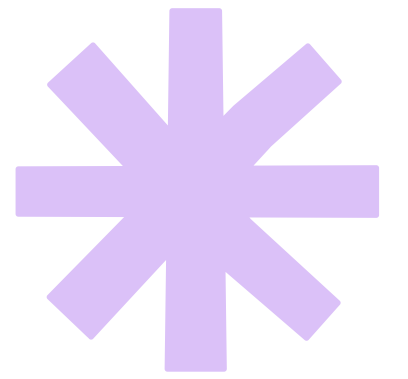
Long texts and static content lack engagement, making it hard to grasp abstract topics for people who are neurodivergent



CogniFly makes AI-generated videos with multiple language transcripts/captions with interactive experiences tailored to individual needs



Background Study



- **Global Education Gap:** According to the UN, 251M children remain out of school, with 33% in low-income countries vs. 3% in high-income countries.
- **Language Barriers:** 40% of children lack education in a language they understand, hindering learning.
- **Neurodivergent Challenges:** Over 1 in 4 U.S. adults (28.7%) have a disability, including 13.9% with cognitive impairments affecting concentration, memory, or decision-making.
- **Visualization:** Visuals enhance learning by up to 400% as the brain processes them faster and more holistically than text.



Problem Statement

How might we transform traditional learning into an inclusive, engaging, and visual experience that empowers students of all backgrounds and abilities? 💡

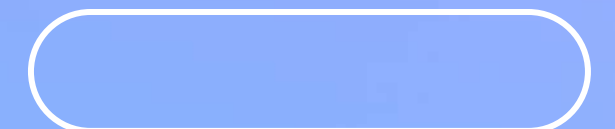


*Inspired by the United Nations' Sustainable Development Goals
#4 Quality Education - Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all*

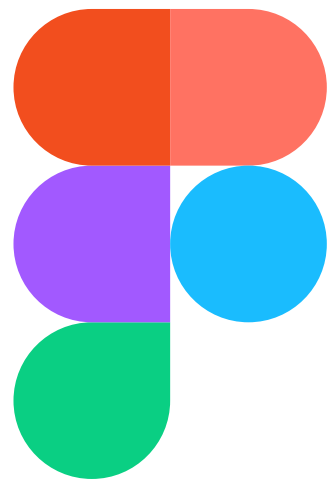
<https://unstats.un.org/sdgs/report/2017/goal-04/>



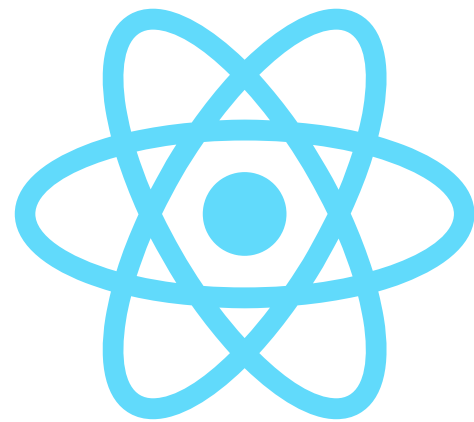
- **Text - To- Video Generated** - Seamless learning experiences with AI generated videos for pdfs or excerpts that seem difficult to understand.
- **Customized Transcripts** – Generate multilingual transcripts, including rare dialects.
- **Neurodivergent-Friendly Modes** – Adjust speed, sensory input, and distractions for personalized learning for people with ADHD and dyslexia.
- **Interactive Learning** – Add quizzes, annotations, and interactive elements for engagement.



Tech - Stack



Design



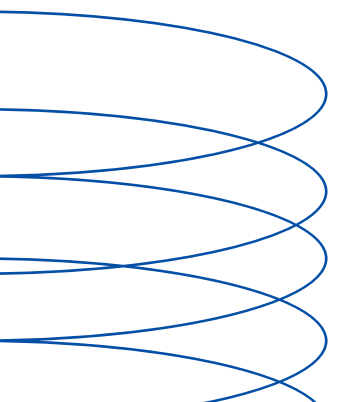
Front-End

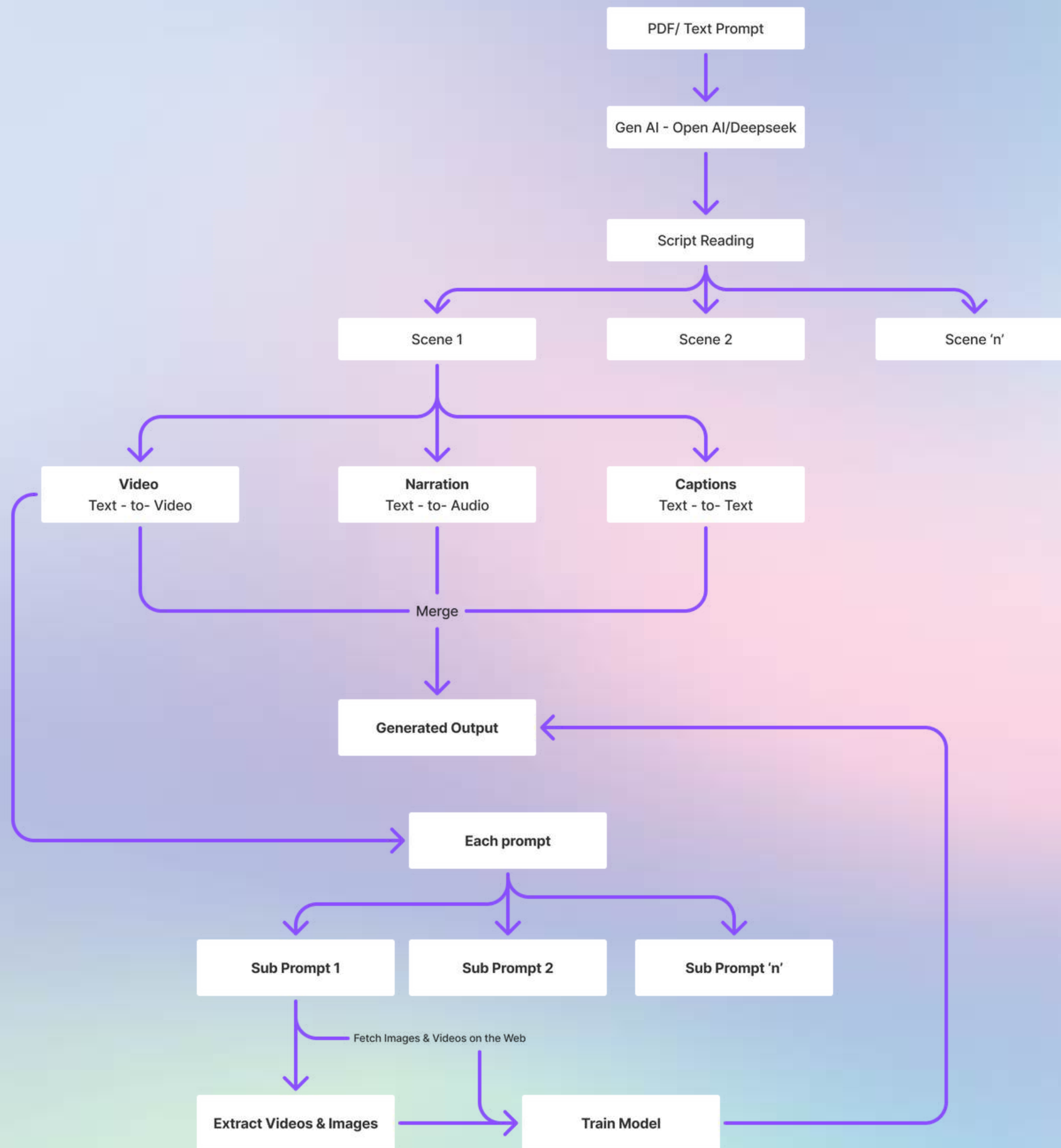


Backend




AI models





System Architecture

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INFO 609
Accessibility and Inclusive Design

Course Material

Module 1

Module 2

Module 3

Module 4

Module 5

Grades




Readings

Assignments

Discussion Board

Groups

Search for people, tasks, teams




Your Lesson Plans for INFO 609

Prof. Dianne Edwards82 min

Learn Accessibility and Inclusivity


My Progress42%

Continue

Dianne Edwards82 min

Learn Accessibility and Inclusivity


My Progress42%

Continue

Dianne Edwards82 min

Learn Accessibility and Inclusivity

My Progress42%

Continue

My upcoming Lessons

Lessons

Duration

View All Lessons

Learning Outcomes

1. Standards & Interoperability; HIE

Identify the origin of consumer health informatics (CHI) and identify and discuss CHI tools

2 hrs 31 m

CO1, CO4,C03

2. Overview of Healthcare Informatics; Data, Information, Knowledge

Identify the origin of consumer health informatics (CHI) and identify and discuss CHI tools

2 hrs 31 m

CO2, CO4,C05

3. Consumer Health;Mobile Tech & mHealth

Identify the origin of consumer health informatics (CHI) and identify and discuss CHI tools

2 hrs 31 m

CO1, CO2,C03

4. CDS, Safety, Quality, Value, Sociotechnical


Identify the origin of consumer health informatics (CHI) and identify and discuss CHI tools

2 hrs 31 m

CO3, CO4,C05

5. Telemedicine & Public Health

Identify the origin of consumer health informatics (CHI) and identify and discuss CHI tools

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Module 2

Module 3

Module 4

Module 5

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Module 1

Newton's Law of Motion

Summarize this PDF

1 / 10


100% +

Newton's Law of Motion

Newton's First Law of Motion, also known as the Law of Inertia, is a fundamental principle that describes the behavior of objects in the absence of external influences. The term "Law of Inertia" emphasizes the concept of inertia, which refers to the property of massive objects to resist changes in their state of motion. This idea stems from the observation that objects naturally maintain their current state of rest or motion, resisting any changes unless acted upon by an external force.

By naming the first law of motion the "Law of Inertia," Newton highlighted this inherent property of objects and laid the groundwork for understanding how forces can cause changes in motion. Newton's first law of motion states that objects persist in their current state of motion unless compelled to do otherwise by an external force. Whether an object is at rest or in uniform motion, it will continue in that state unless a net external force acts upon it.

One crucial insight provided by Newton's First Law is that the object will maintain a constant velocity in the absence of a net force resulting from unbalanced forces acting on an object. If the object is already in motion, it will continue moving at the same speed and direction. Likewise, if the object is at rest, it will remain stationary. However, introducing an additional external force will cause the object's velocity to change, responding to the magnitude and

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Module 2

Module 3

Module 4

Module 5

| Grades

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| Assignments

| Discussion Board


| Groups

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Module 1

Newton's Law of Motion

Start Quiz



47:38 / 1:52:32

Embedded Captions

Todd Small was stuck in quicksand again. It happened, as always, on the floor of the shop where he worked. His shift complete, Small was making the 150-yard walk from the car, when he realized that his left leg was sinking deep in the stuff. Though this had happened nearly every day now — he stopped and glanced down at his feet. His N firmly planted on the shop's concrete floor. But he was stuck, just the same. His brain was sending an electrical pulse saying "walk," but as the signal streaked from his cerebellum and down his spinal cord, it snagged on scar tissue where the myelin layer insulating his nerve fibers had broken down. The message wasn't getting to his hip flexors or his hamstrings or his left foot. That connection had been severed by his multiple sclerosis. And once again, Small was left with the feeling that, as he described it, "I'm up to my waist in quicksand."

For the 400,000 Americans with multiple sclerosis, Todd Small's description will most likely ring true. Muscle stiffness is a hallmark of the disease, and "foot drop" — the term for Small's quicksand feeling — is a frequent complaint. The condition is usually treated, as it was in Small's case, with baclofen, a muscle relaxant that works directly on the spinal cord. Every day for 14 years, he took a single 10-milligram pill. "My neurologist always told me if you take too much it will weaken your muscles. So I never wanted to go

Language

Arabic

English

French

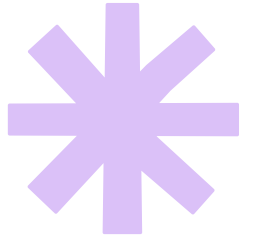
Hebrew

Hindi

Spanish

How
CogniFly
simplifies
boring texts


Implementation



Future Scope

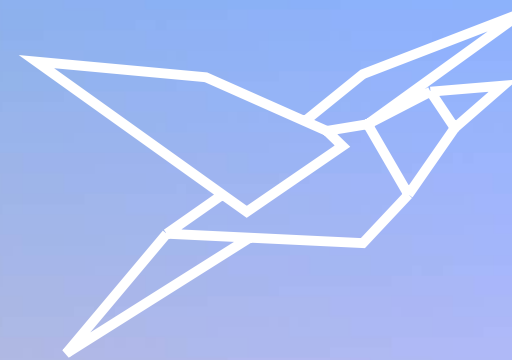
 **Global Accessibility & Multilingual Learning** – AI-powered real-time translation, sign. Language support and audio narration for inclusive education and support sign languages.

 **Gamified & Immersive Learning** – AR/VR integration, adaptive AI-driven lessons, and gamification elements like rewards and challenges to enhance engagement.

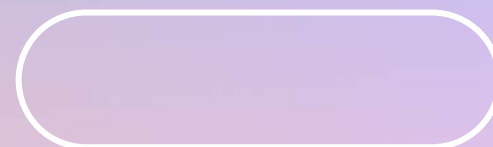
 **Community-Driven Education** – A collaborative platform where students and teachers can create, share, and interact with video-based lessons in real time.

Philly CodeFest

**“BECAUSE EDUCATION SHOULD
BE FELT, SEEN, AND EXPERIENCED,
NOT JUST READ”**



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Resources

- 251 million children still out of school worldwide, UNESCO reports. (2024, October 31). UN News. <https://news.un.org/en/story/2024/10/1156366>
- 40% don't access education in a language they understand. (2023, April 20). Global Education Monitoring Report. <https://www.unesco.org/gem-report/en/articles/40-dont-access-education-language-they-understand>
- [Disability impacts all of us infographic](https://www.cdc.gov/disability-and-health/articles-documents/disability-impacts-all-of-us-infographic.html). (2024b, December 18). Disability and Health. <https://www.cdc.gov/disability-and-health/articles-documents/disability-impacts-all-of-us-infographic.html>
- [Visuals are the message in effective communications - League of Minnesota Cities](https://www.lmc.org/news-publications/magazine/july-aug-2023/message-matters-july-2023/). (2023, July 10). League of Minnesota Cities. <https://www.lmc.org/news-publications/magazine/july-aug-2023/message-matters-july-2023/>