Advancing Education: How JoVE's science videos improve learning and research for all

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What's JoVE?

Producer and provider of science videos with the mission to improve scientific research and education.

- 18,000+ Videos on Science Experiments and Concepts
- 1200+ subscribing institutions
- 66 million unique visits per year
- 343 million days spent on www.JoVE.com in 2023
  - Almost 1 million years!

Visualising Science

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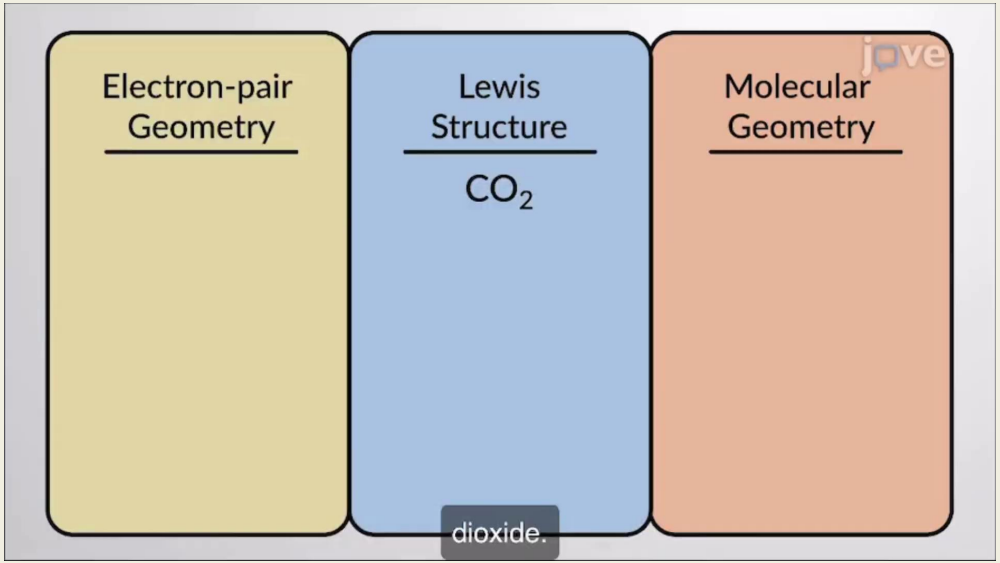
Listening

and drawing!

Watching


Electron-pair Geometry
Lewis Structure
CO_2
Molecular Geometry
dioxide.

Reading

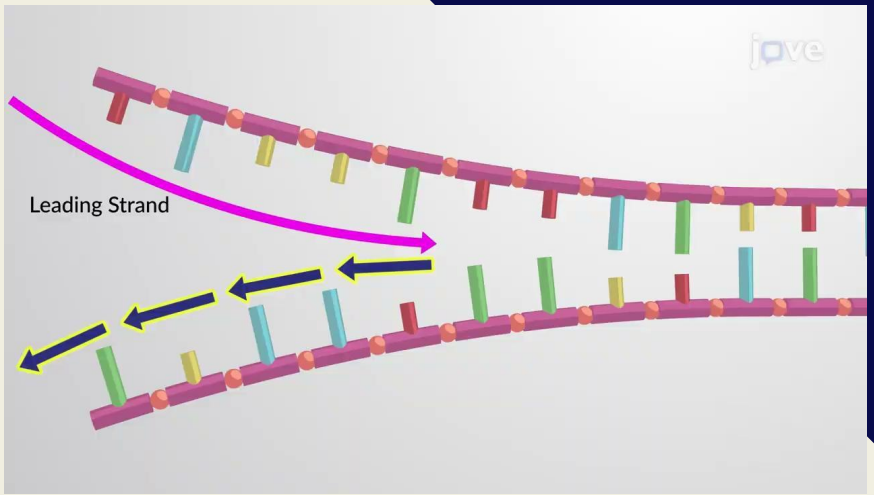
Visualising

TEXT

"This daughter strand is known as the lagging strand. DNA polymerase can only synthesize DNA in the 5' to 3' direction. Because of this, the leading strand is synthesized continuously.

However, DNA polymerase cannot synthesize DNA in a 3' to 5' direction on the lagging strand.To deal with this problem, DNA synthesis is carried out discontinuously in a 5' to 3' direction."

VIDEO



All types of learners

1. Visual (Spatial) Learners

- Learn best through seeing
- Prefer diagrams, charts, and videos

2. Auditory (Aural) Learners

- Learn best through listening
- Enjoy lectures, discussions, and audio materials

3. Kinaesthetic (Tactile) Learners

- Learn best through doing
- Prefer hands-on activities, experiments, and physical movement

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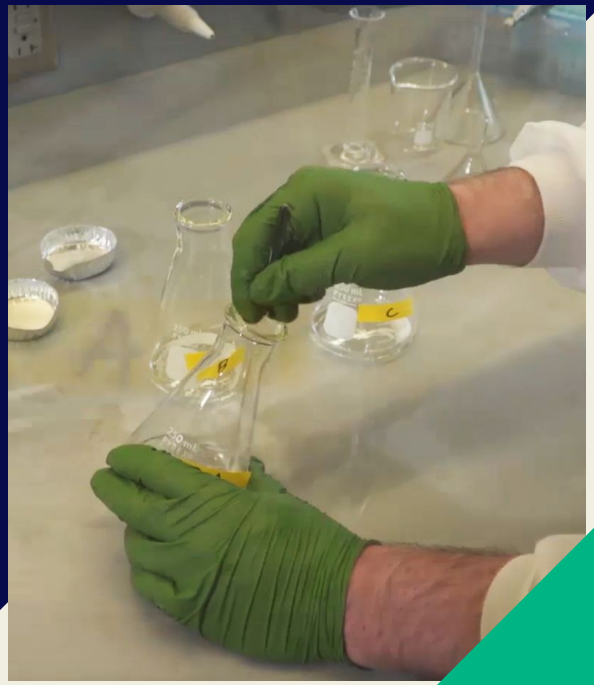


Case studies from Bicocca University

Visually-impaired student

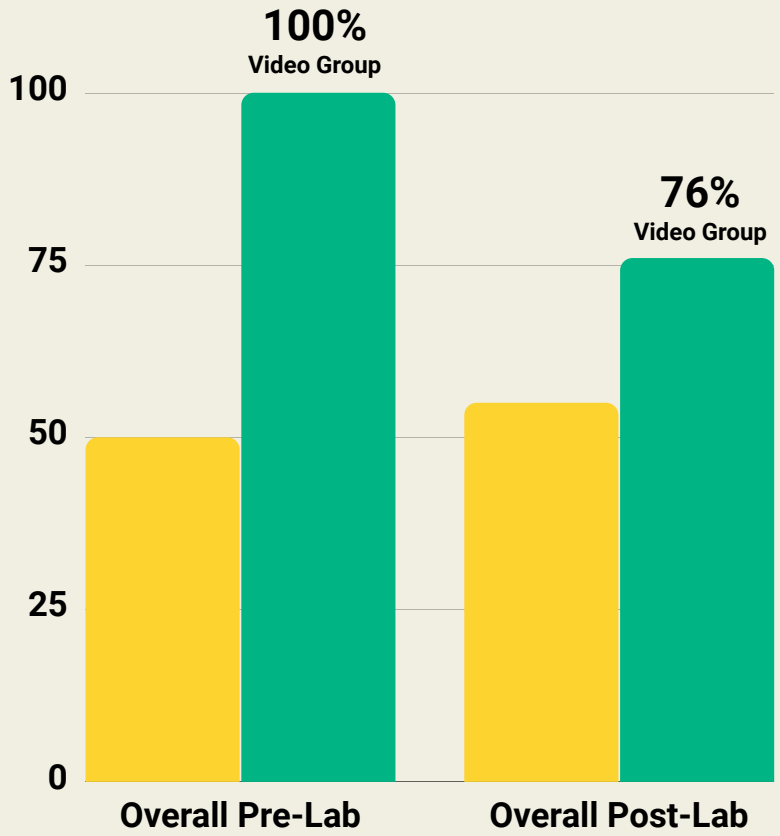
- Slides, recordings, textbooks, tutors → insufficient
- Highly-descriptive video resources
- Lab results superior to all peers (better touch and hearing)

Second-language student

- Lectures are immersive for language exposure → insufficient
- Videos with captions and voice-over to support language adoption

Student performance

Students who watched a JoVE video performed up to **100% better on pre-lab and post-lab assessments** compared to students who only read the lab handouts.



Source: Clemson DeSales Case Study

Student performance

Source: Prof. Srimal Garusinghe's Lab group - Student: Natalie Gaskill

What videos can do

EDUCATION

- Improve engagement
- Simplify concepts
- Increase retention
- Offer pedagogical support
- Complement, without replacing

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Thank you!

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