

The concept of lethal mutations

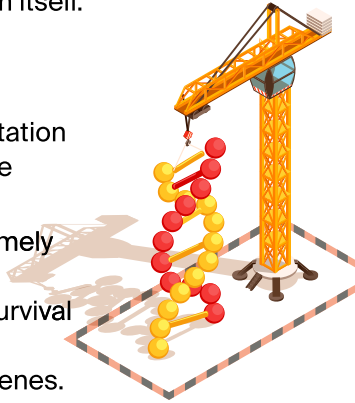
In this section, we explore the concept of lethal mutations in education - a phenomenon where evidence-based practices are altered in ways that render them ineffective. Understanding how and why these mutations occur is crucial for maintaining the fidelity of research-based teaching methods in real classroom settings.

1 What are mutations?

A mutation refers to a modification in the DNA sequence or structure of an organism's genes, leading to alterations in the organism itself.

These mutations can be advantageous, neutral, or deleterious. A beneficial mutation can help an organism survive better in its environment.

Mutations can also be extremely detrimental, even lethal, threatening an organism's survival before it has the chance to reproduce and pass on its genes.



3 Applying the science of learning

Applying the science of learning to the classroom presents challenges because much of the research on learning is in lab conditions, not classrooms. This creates something lost in translation where approaches are implemented with low fidelity.

Even with sound understanding of principles of how learning happens, there can be issues in scaling from the low-resolution of concepts or theories into the higher resolution needed for classroom implementation.



Low resolution
concepts or theories

High resolution
classroom implementation

2 Lethal mutations in education

A lethal mutation in learning and instruction is a **significant alteration of an evidence-informed practice to the point where it no longer resembles the original method.**

This occurs when educators tailor evidence-based practices to particular environments, inadvertently creating strategies that are ineffective or counterproductive.

Tailoring

