



Experiential Learning for Science & Math

“This is literally the ‘Magic School Bus’ for my classroom!”

– biology teacher, Cobb County GA

Trusted by **570,000+** students & teachers

Backed by **learning science research** at
Stanford University

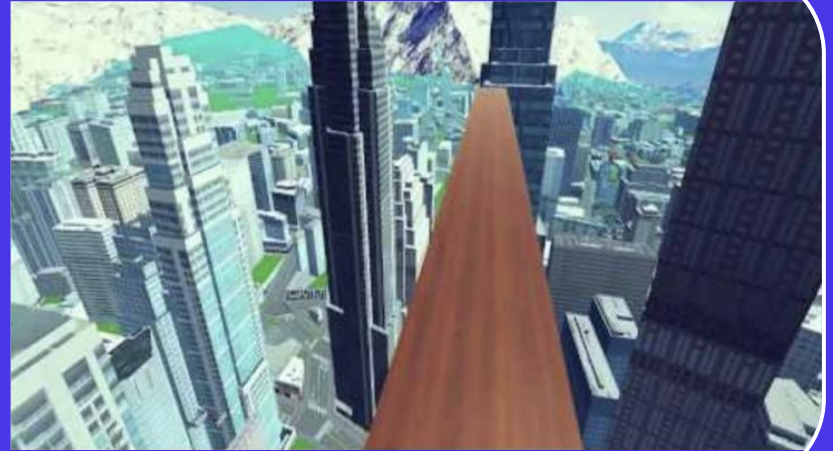
aditya@inspiritvr.com



**What makes VR so
compelling?**

A decorative white wavy line with three distinct peaks and valleys, spanning the width of the image at the bottom.

Ref: Jeremy Bailenson / Stanford VR Lab



PRESENCE: a measurable construct in social psychology



Ref: Jeremy Bailenson / Stanford VR Lab





Ref: Jeremy Bailenson / Stanford VR Lab



VR is 'consensual hallucination' – William Gibson

But it is much more than its current form factor: VR can be perceived as a *continuum*

		Perceptual Immersion	
		Low	High
Interactivity	Low	N/A	Mobile VR & 360
	High	Desktop VR & CAVEs	Immersive VR accessed via HMDs

Perceptual Immersion vs Interactivity matrix to classify Virtual Learning Environments (VLEs)

Key research insights on learning outcomes...

Findings on immersive VR delivered via HMDs largely show conflicting findings. This may suggest a disconnect in collaboration across expertise, and ***a lack of collaboration with teachers.***

Prior work did not make an effort to distinguish learning with VR of tasks that involve ‘**procedure**’ versus tasks that are ‘**declarative**’.

Individual differences are not considered in prior work.

Desktop VLEs: Findings

Curriculum design and lesson plan development is critical.

The pedagogy and learning science theory integration is what pushes the technology beyond the initial novelty effect.

Design-based research (DBR) methods were employed in many studies that showed positive outcomes associated with the use of VR.
^^^ Chris Dede's work on River City and other MUVES

Mobile VR & 3DoF: Is it useful?

Still the most affordable and accessible form of HMD-rendered VR available today.

shown to cause motion sickness and nausea if used for long periods,
can be very gimmicky

inquiry-driven learning is a major outcome

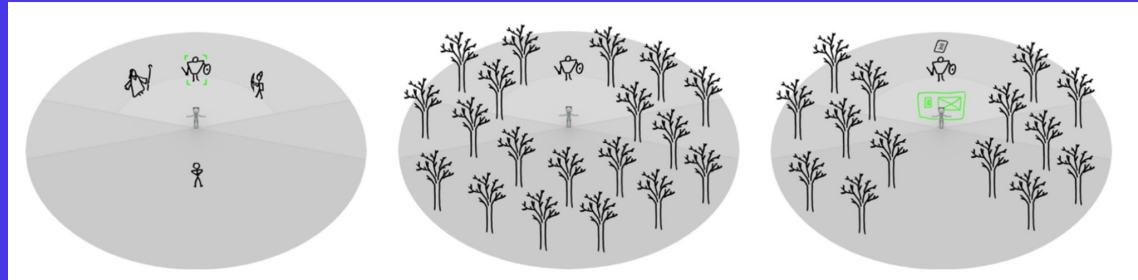
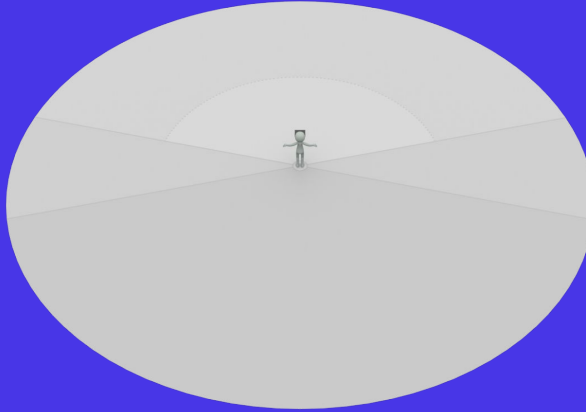
360 content: need to unpack the underlying set of principles of
learning in VR from a design standpoint

Taking VR outside the Lab

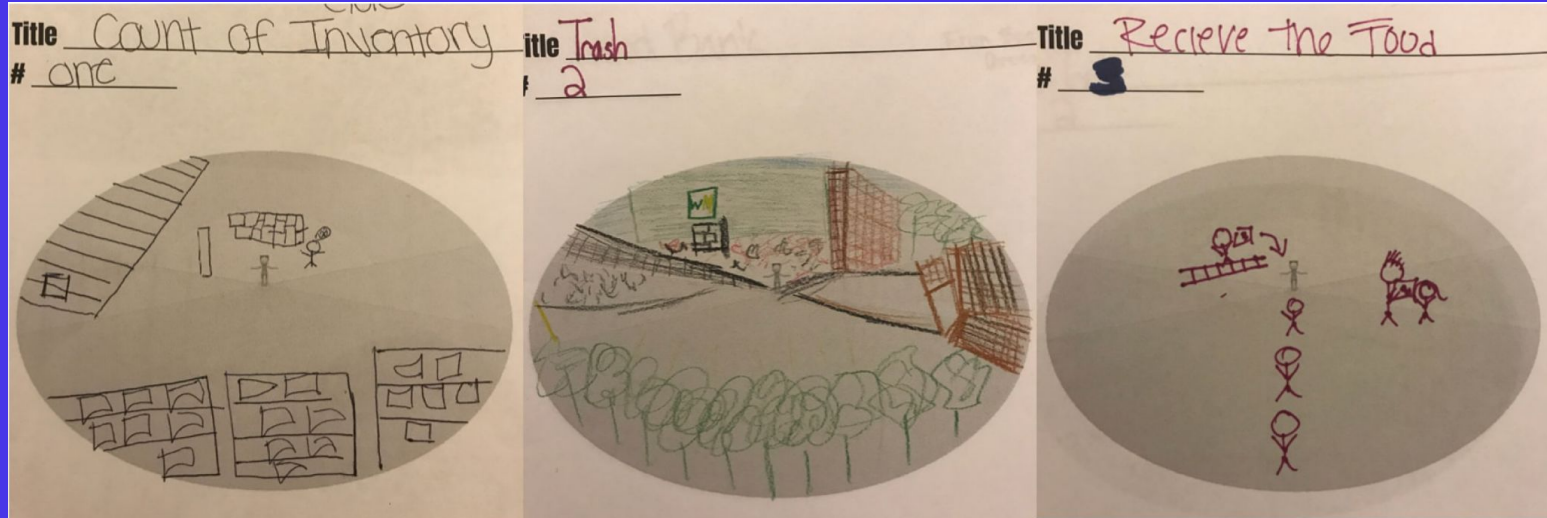
Atlanta, GA (2018-present)



Atlanta, GA (2018-present)



Atlanta, GA (2018-present)



Programs in India 2016-Present



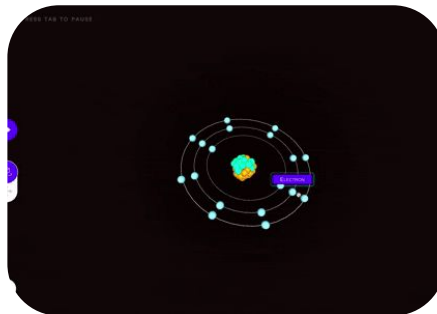
Findings from rigorous learning science research

N=121, recent control experiment findings summary (Cobb County, GA)



18.6%

Increase in self-efficacy and confidence towards learning science, especially prominent among underserved youth



24%

Increase in critical thinking skills



At least one grade-point
Increase in knowledge-retention, specifically for procedural tasks and spatial reasoning tasks

And a decade of peer-reviewed work on learning with VR

10%+

Learning retention when using VR vs. computer or tablet.

Krokos et al. (2018)

11-16%+

Understanding, evaluation, and problem solving.

Chau et al. (2013)

40%+

More retention of information about spatial and temporal relationships compared to traditional methods.

Novotný et al. (2013)

Bottom line: VR outperforms literally every other digital tool out there today, particularly for the bottom 25% percentile of students.

Implementation is important: here's how we think about it



Technology

affordable, portable, kid-safe, plug-n-play, remote manage, all handled by us

Content

massive catalog, ready-2-deploy worksheets & lesson plans, aligned with standards

Implementation

only 20 min/session, student-driven, group work, in or out of class

Training

in-person PD workshop & certificate, 9-5 support, pedagogically aligned

What's next?

With research...

Developing a full VR curriculum

- infrastructure considerations
- standards alignment
- 'novelty' effect, need for long-term studies
- student authoring in VR, and providing more learner agency

gold standard for an immersive VR experience is to cause behavior change and not stay limited to belief change

What's next?

With Inspirit

Running long-term school programs

Build coverage across all science & math topics

Grow the family!

Work with us!

“I like to think that all technology, right from the invention of paper and the act of writing on paper, has been developed with a goal to expand how we can communicate and express ideas, thoughts, and feelings.”

— Peter Lee, MSR