

# How Does Technology Fit into MTSS?

Brian W. Wojcik, Ed.D., ATP  
ATP Education Program Supervisor  
Assistive Technology Partnership



# Brian Wojcik, Ed.D., ATP

- ATP Education Program Supervisor/ AT Specialist
- Worked in AT for over 25 years as a teacher, specialist, consultant, coach, and professor.
- Rehabilitation Engineering and Assistive Technology Society of North America (RESNA) Assistive Technology Professional (ATP) Certified
- Member of the Quality Indicators for Assistive Technology Leadership Team, State Leaders of Assistive Technology in Education, CEC – ISET & CASE, Learning Forward, ISTE/NETA, and founding Board Member of the Universal Design for Learning Implementation Research Network and LearningDesigned.org. .



# Outcomes

- Define the concept of supportive technologies
- Explain how supportive technologies and assistive technologies fit into MTSS
- Identify at least 3 examples of supportive technologies
- Identify at least 2 factors that are necessary for supportive technologies to impact student performance



Central Question for Today -

How Do Technologies Fit into MTSS?

# What this Presentation is NOT

- An in-depth discussion of technologies related to progress monitoring or instructional/educational technologies
- An advertisement for specific technology solutions
- Focusing solely on students in special education

# How Many People Have Worked with Students Who Have Had Difficulty with One or More of the Areas Below?

Reading  
Decoding

Reading  
Comprehension

Memory

Organization

Planning  
Through Tasks

Handwriting

Typing

Spelling

Grammar and  
Punctuation

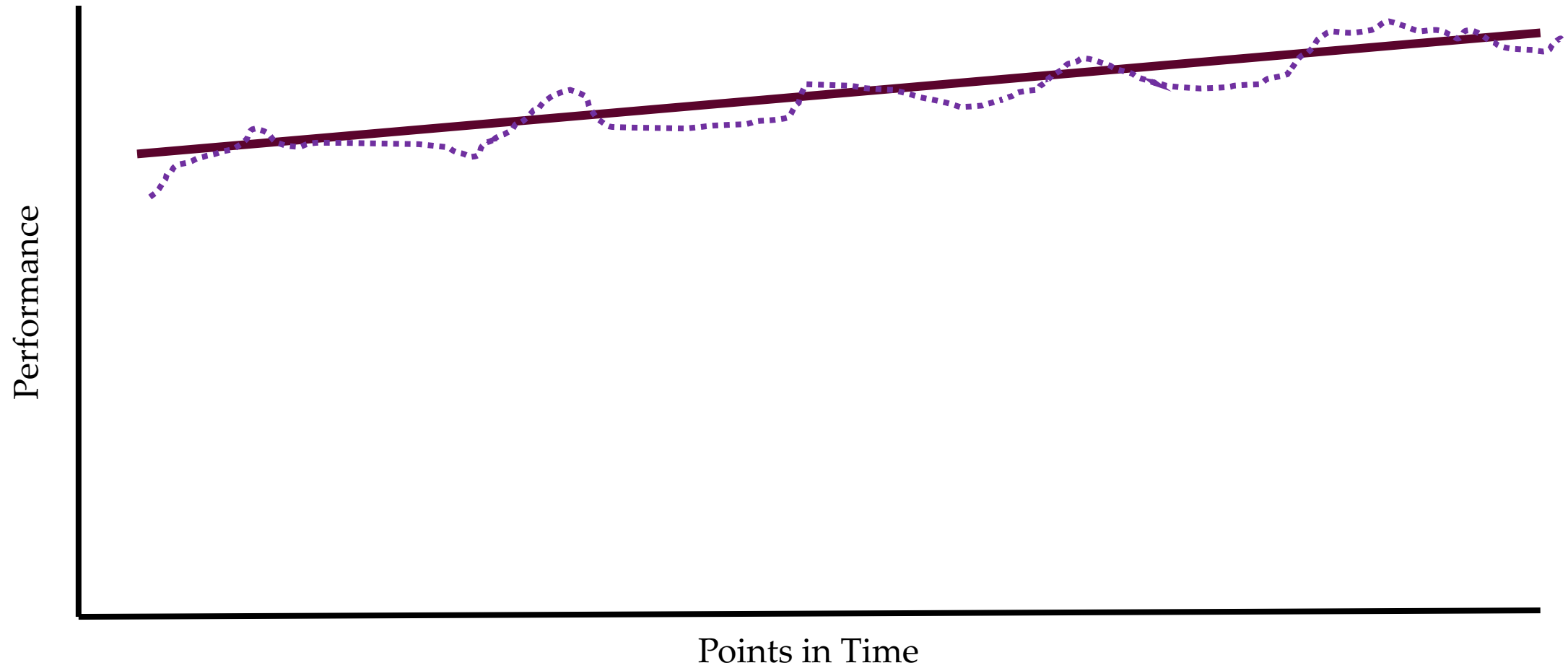
Sentence  
Generation

Written  
Organization

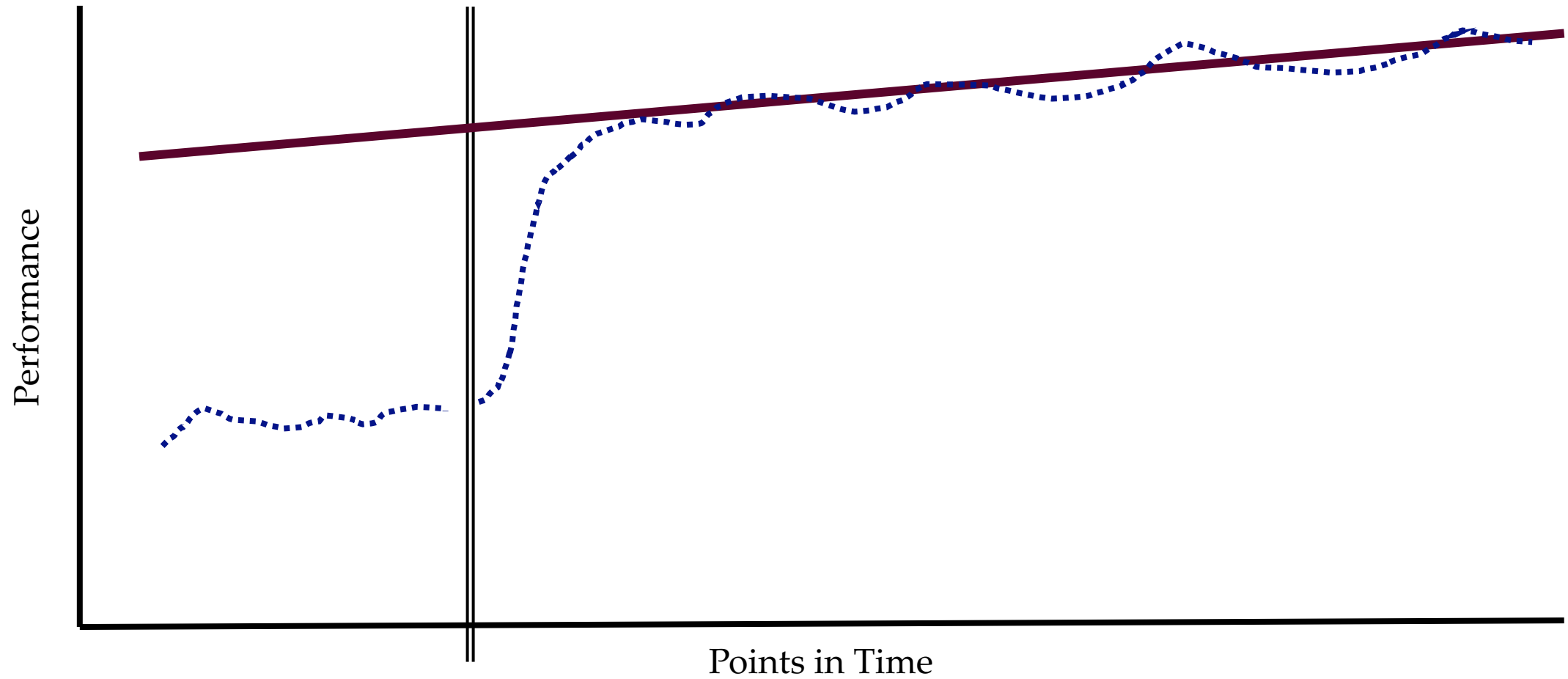
Math  
Computation

Math Notations

# Let's Talk About Student Growth

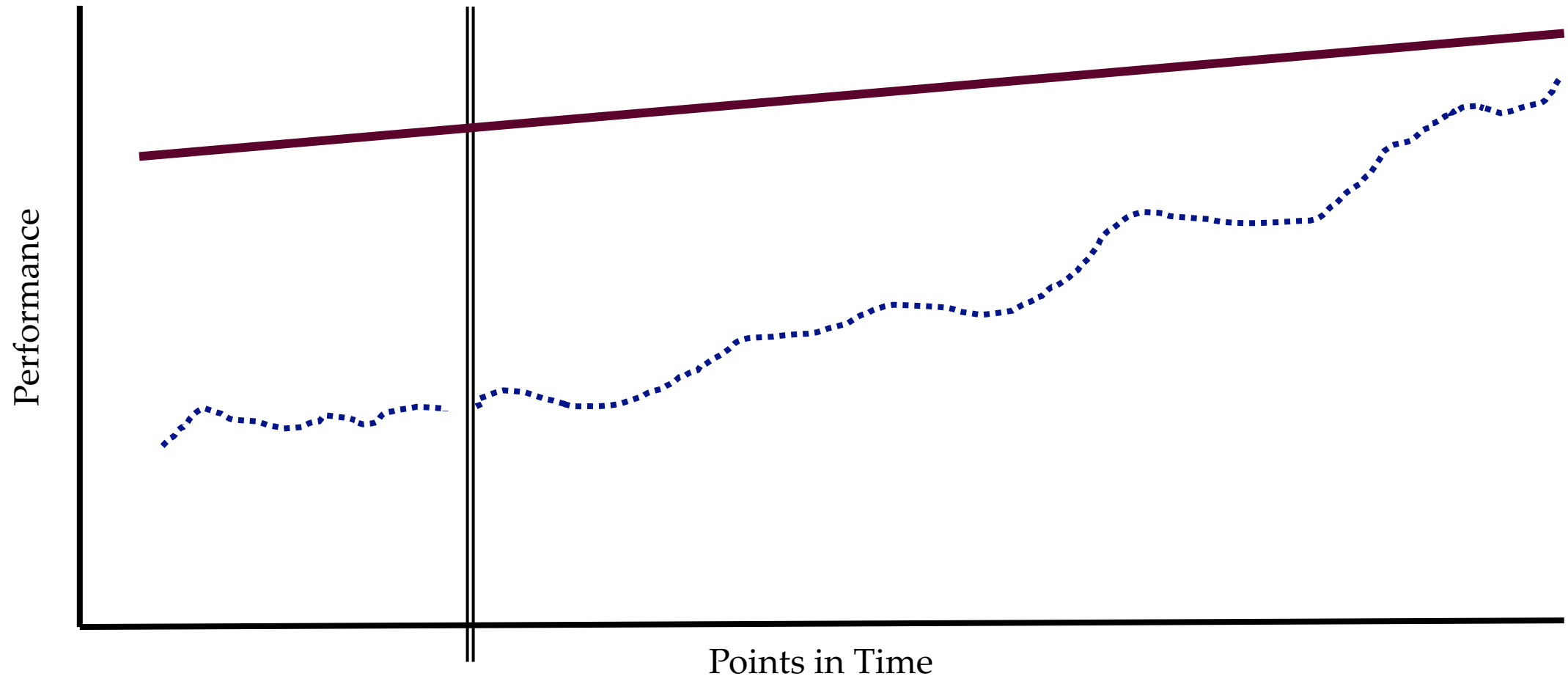


# Let's Talk About Student Growth

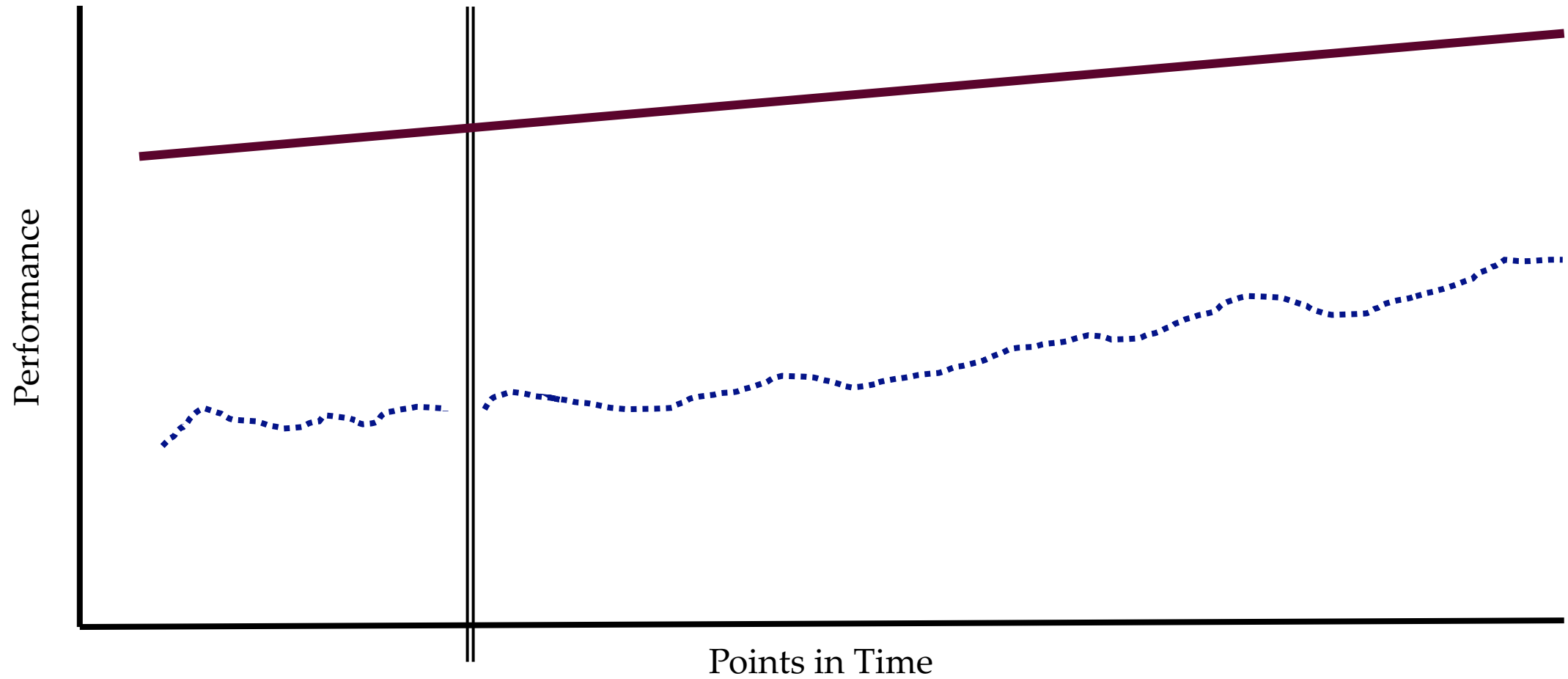




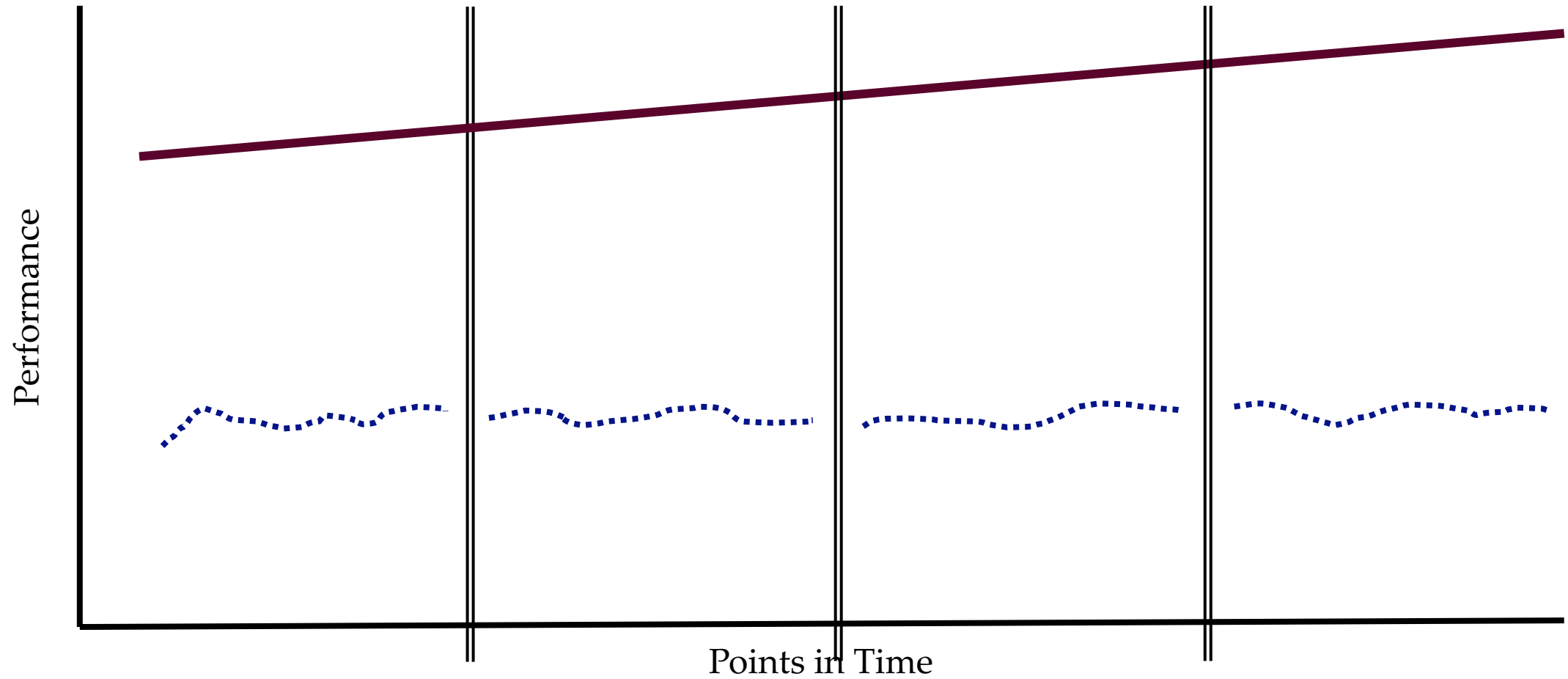
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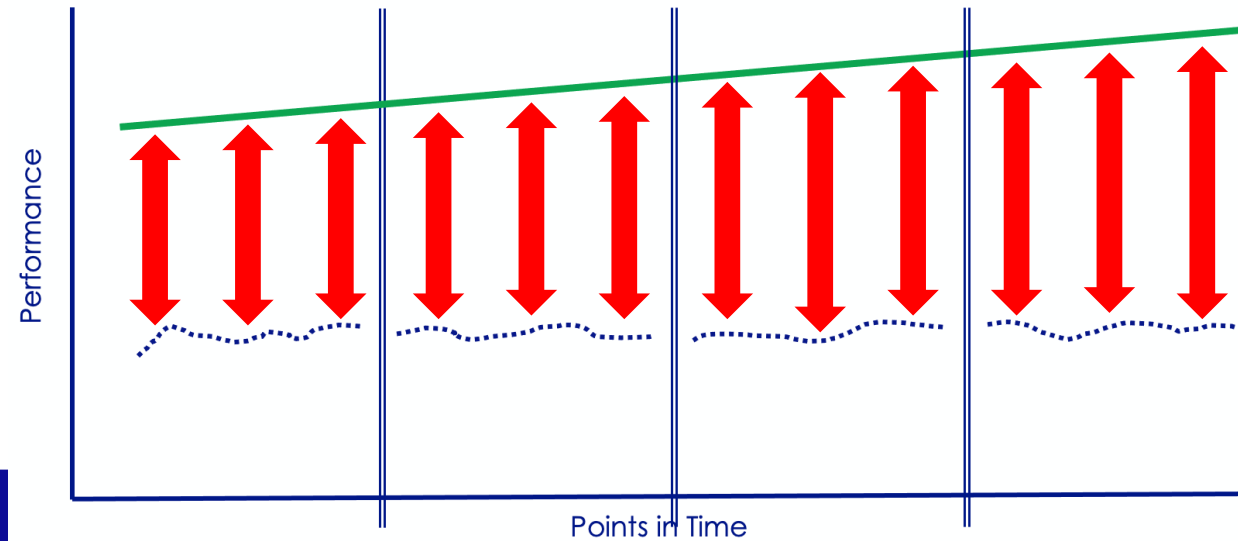
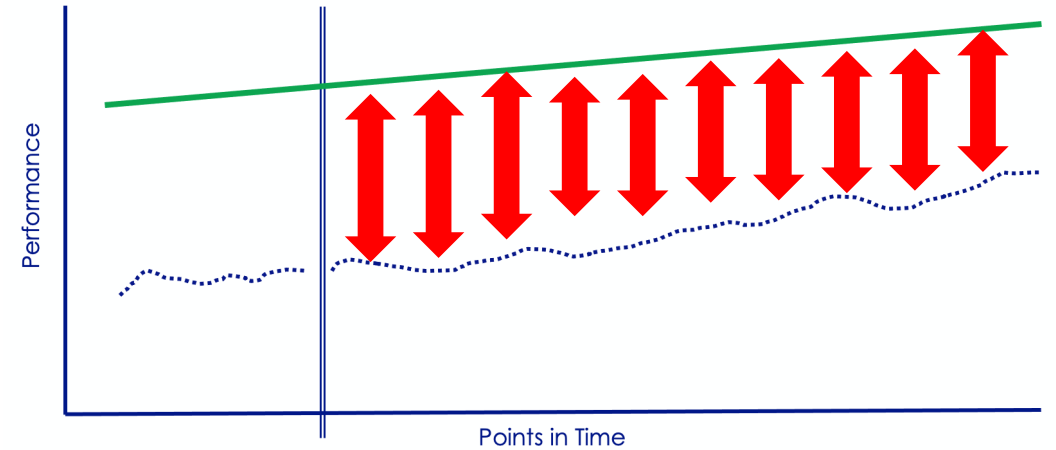
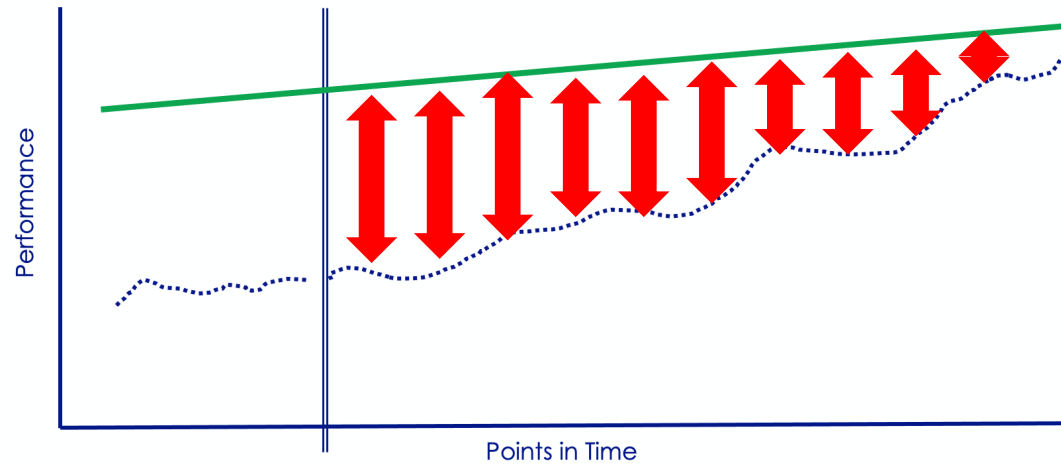
# Let's Talk About Student Growth

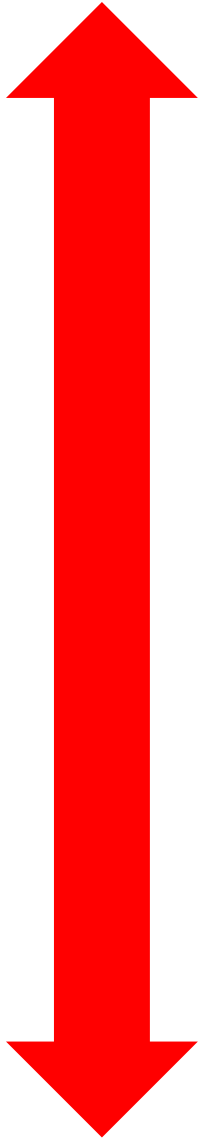


# Let's Talk About Student Growth



# What's the Impact on the Student?





Lack of Meaningful Engagement with  
the Curriculum Leads to

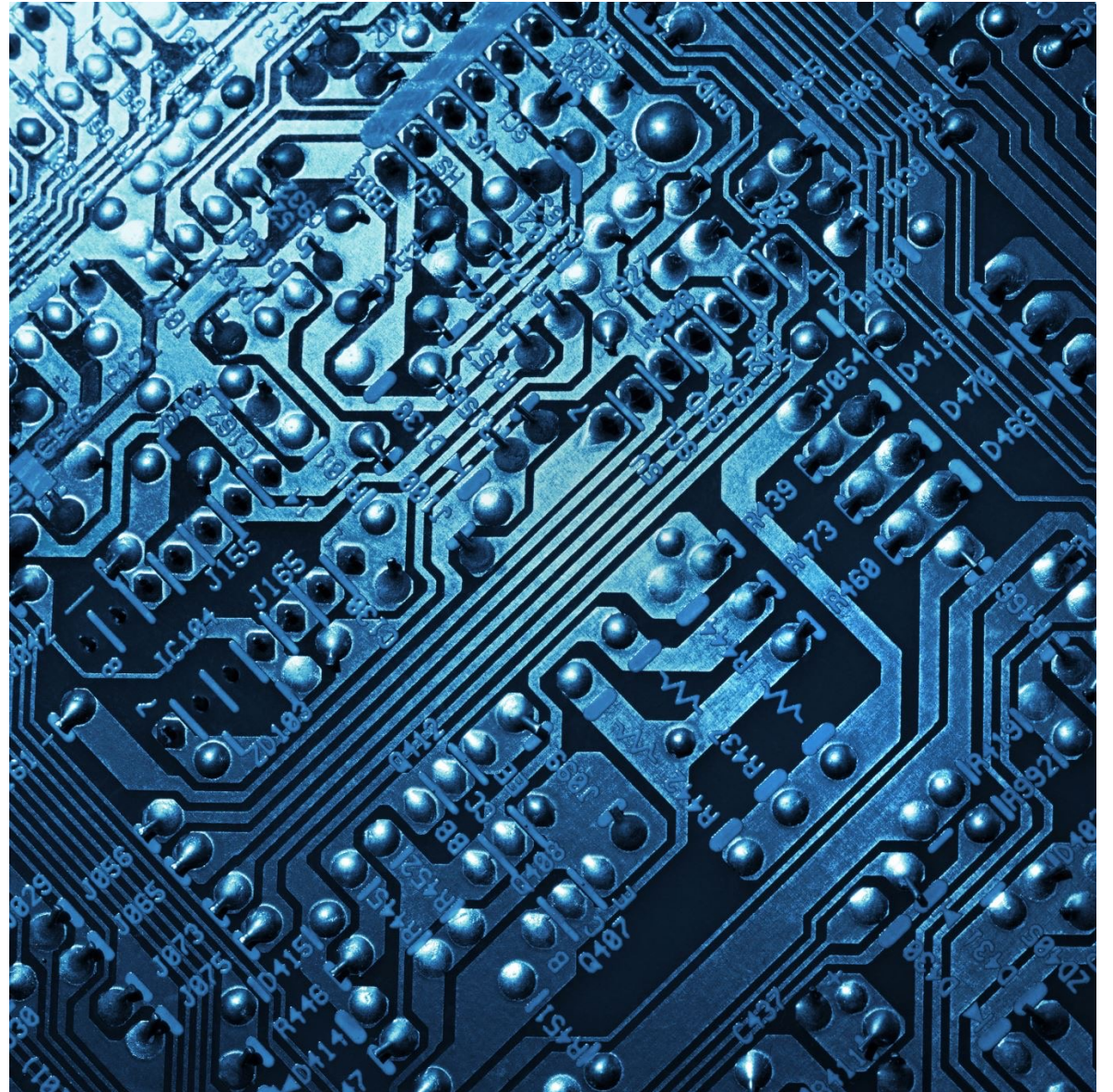
- Learning Loss
- Self-Esteem Issues
- Behavioral Issues
- Increased Dropout Rates
- Overall Poor Student Outcomes



Question: What do we mean by a 'System of Supports'?



# Let's Talk About Technology



# Technologies Used in Schools

## Educational or Instructional Technologies

- **Strategy for Use:** Provides learning experiences to enhance or support student's progress in curriculum.
- **Examples**
  - Read 180
  - IXL
  - Oregon Trail

## Productivity or Informational Technologies

- **Strategy for Use:** Consume and organize information or produce content.
- **Examples**
  - MS Office
  - Google Suite
  - Browsers

## Assistive Technologies

- **Strategy for Use:** Provides a means to allow students with disabilities to do tasks they could not otherwise do.
- **Examples**
  - Communication Devices
  - Mobility Aids
  - Text to Speech
  - Speech Recognition

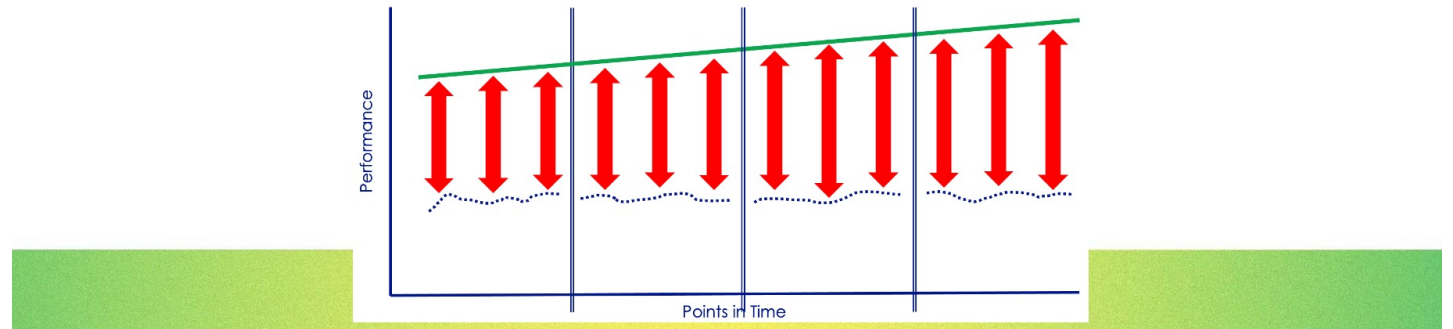
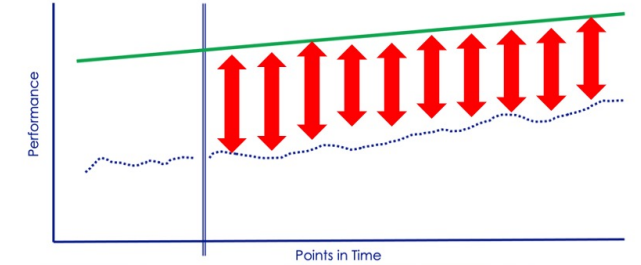
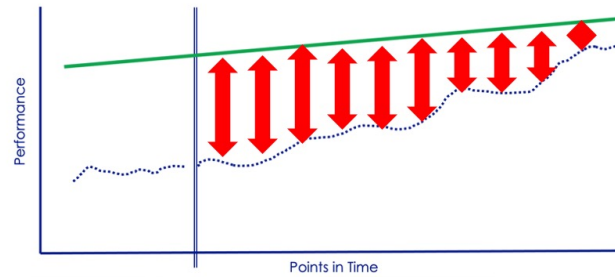


# But, these don't fully address the issues...

Educational or  
Instructional  
Technologies

Productivity or  
Informational  
Technologies

Assistive Technologies



# We need another type of technology to move the needle...

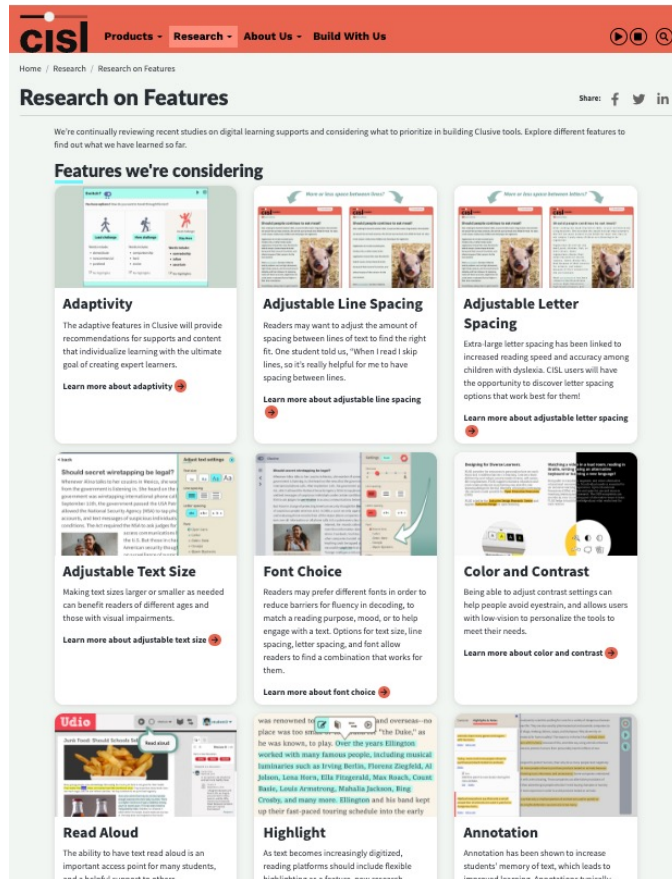
## Supportive Technologies

- Decreases Barriers to the Curriculum
- Compensate for Difficulties Currently Faced by Students
- Available to All Students
- Flexibly Used Based on Student Needs

# Some Potential Features of Supportive Technologies

Adjustable Line Spacing	Adjustable Letter Spacing	Adjustable Text Size	Adjustable Font Size	Adjustable Color and Contrast	Text to Speech
Adjustable Highlighting	Annotation Capabilities	On-Demand glossary	Embedded Comprehension Checks	Text Simplification	Text Leveling
Speech to Text	Word Prediction	Zoom	Navigation Supports	Bookmarking	Captions
Abbreviation Expansion			Math Syntax Editor	Alternative Access	

# Research Base for Potential Features



<https://cisl.cast.org/research/features>

UDL GUIDELINES ENGAGEMENT REPRESENTATION ACTION & EXPRESSION MORE...

## Research Evidence by Checkpoint

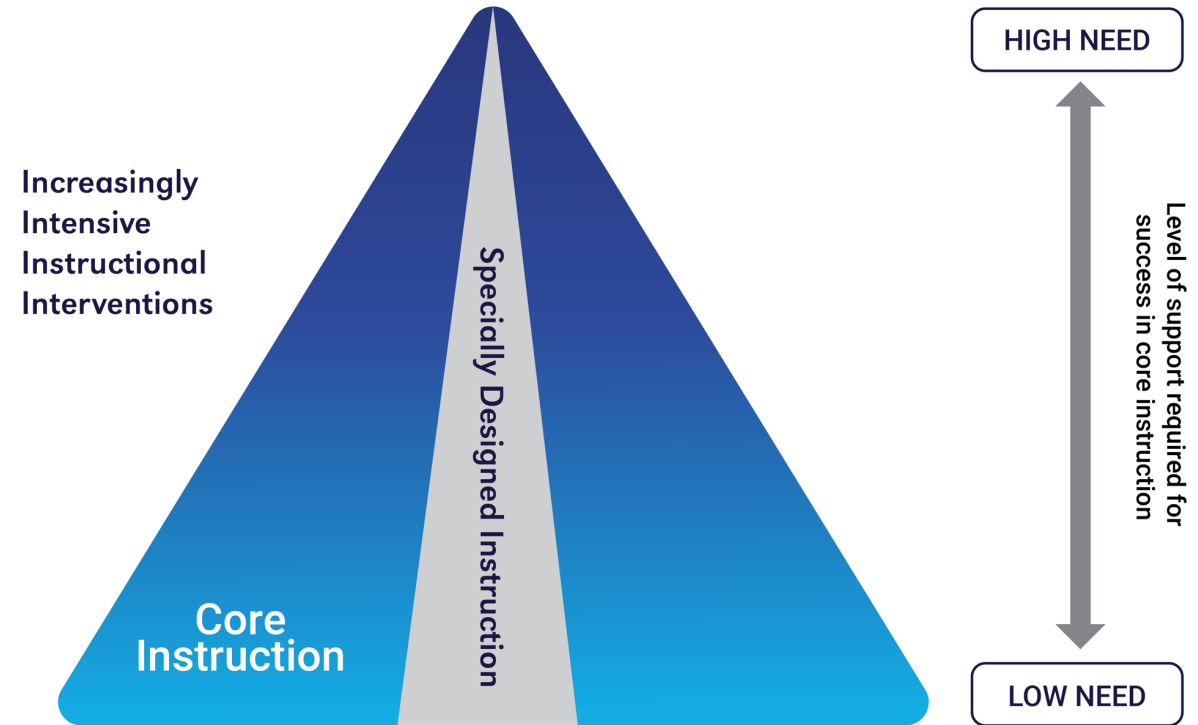
Explore the research used to develop each UDL Guidelines Checkpoint.

- Engagement
  - [7.1: Optimize individual choice and autonomy](#)
  - [7.2: Optimize relevance, value, and authenticity](#)
  - [7.3: Minimize threats and distractions](#)
  - [8.1: Heighten salience of goals and objectives](#)
  - [8.2: Vary demands and resources to optimize challenge](#)
  - [8.3: Foster collaboration and community](#)
  - [8.4: Increase mastery-oriented feedback](#)
  - [9.1: Promote expectations and beliefs that optimize motivation](#)
  - [9.2: Facilitate personal coping skills and strategies](#)
  - [9.3: Develop self-assessment and reflection](#)
- Representation
  - [1.1: Offer ways of customizing the display of information](#)
  - [1.2: Offer alternatives for auditory information](#)
  - [1.3: Offer alternatives for visual information](#)
  - [2.1: Clarify vocabulary and symbols](#)
  - [2.2: Clarify syntax and structure](#)
  - [2.3: Support decoding of text, mathematical notation, and symbols](#)
  - [2.4: Promote understanding across languages](#)
  - [2.5: Illustrate through multiple media](#)
  - [3.1: Activate or supply background knowledge](#)
  - [3.2: Highlight patterns, critical features, big ideas, and relationships](#)
  - [3.3: Guide information processing and visualization](#)
  - [3.4: Maximize transfer and generalization](#)
- Action & Expression
  - [4.1: Vary the methods for response and navigation](#)
  - [4.2: Optimize access to tools and assistive technologies](#)
  - [5.1: Use multiple media for communication](#)

<https://udlguidelines.cast.org/more/research-evidence>

# Let's Talk about Supportive Technologies and MTSS

## A Conceptual Framework for NeMTSS

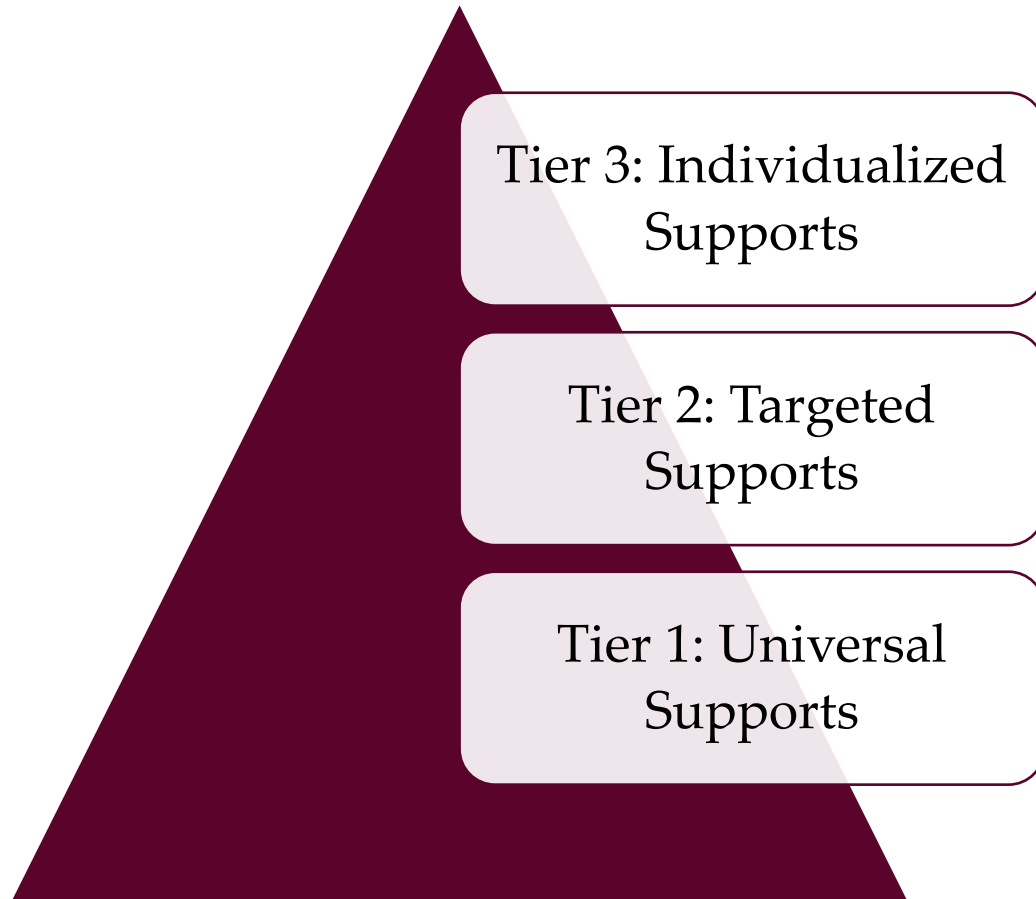


**NeMTSS**  
FRAMEWORK

Students may receive services in all areas of the pyramid at any one point in time.

*Adapted from the U.S. Department of Education*

# Supportive Technologies within an MTSS Framework



- Intensity (Frequency) of Use
  - Incidental Use
  - More Frequent Use
  - Consistent Use
- Increased Individualization of Tools and Features
  - Widely Deployed Generic Supports
  - More Robust Targeted Supports
  - Individualized and/or Adapted Supports

## Universal Reading Supports

- Built-In /Widely Deployed Tools for
  - Magnification
  - Text to Speech
  - Highlighting
  - Contrast
  - Text Levelling
  - Glossary/Thesaurus

## Targeted Reading Supports

- Targeted Deployment of Tools
- More Robust Features and Options (e.g., better text to speech, better text simplification/text levelling)
- Additional Features (e.g., annotation, bookmarking, comprehension checks)

## Individualized Reading Supports

- Deployed to Individual Students
- Specific Features Based on Student's Individual Needs

# How do Supportive Technologies and Assistive Technologies Relate?

## Assistive Technologies

- **Strategy for Use:** Provides a means to allow students with disabilities to do tasks they could not otherwise do.
- **Examples**
  - Communication Devices
  - Mobility Aids
  - Text to Speech
  - Speech Recognition



# How do Supportive Technologies and Assistive Technologies Relate?

The diagram illustrates the relationship between support tiers and assistive technology. On the left, a dark red triangle contains three stacked, rounded rectangular boxes representing support tiers: 'Tier 3: Individualized Supports' at the top, 'Tier 2: Targeted Supports' in the middle, and 'Tier 1: Universal Supports' at the bottom. A large blue arrow points from these tiers towards the right. Inside the arrow, the text reads: 'Used by a Student with a Disability' followed by 'AND' and '504 Coordinator or the IEP Team determine that the Technologies are Necessary for Access and to Receive a FAPE'. To the right of the arrow is a large yellow circle labeled 'Assistive Technology'.

Tier 3: Individualized Supports

Tier 2: Targeted Supports

Tier 1: Universal Supports

Used by a Student with a Disability

AND

504 Coordinator or the IEP Team determine that the Technologies are Necessary for Access and to Receive a FAPE

Assistive Technology

However, supportive technologies do not work unless they are embedded in good practices...

# Practices for Supportive Technologies



Shared  
Leadership  
and Planning



Robust  
Professional  
Development



Build Fidelity  
of Practices



Engage in  
Data Informed  
Decisions

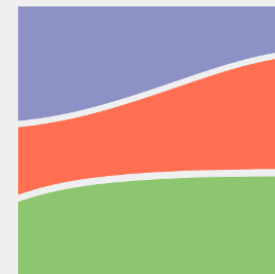


# Start with High Quality and Accessibility Materials

- Accessibility creates a foundation for engaging in learning.
- Inaccessible materials create barriers between the student and learning.
- Supportive Technologies interface with accessible materials to allow students to access learning.



NEBRASKA  
INSTRUCTIONAL  
MATERIALS  
COLLABORATIVE



National Center on  
**Accessible  
Educational  
Materials**

# How to Start with Accessibility

## Acquire Accessible Materials

- Purchase Accessible From the Beginning
- Choose Materials Based on Accessibility

## Create Accessible Materials

- Create Materials Following Accessibility Principles

## Use Accessible Materials

- Use Supportive Technologies to Interface with and Support Individual Student Needs

# Focus on Key Technologies for Universal and Targeted Support Technologies


- Build a team to focus on building a structure for support technologies
  - What are the current systems used in school?
  - What are the built-in support features and are they available for use?
  - What are the widely deployed support technologies?
  - What support technologies may need to be added?.

# Build Knowledge and Skills in Using Support Technologies



# Create Expert Learners

- Expert Learners
  - Plan, Monitor, and Reflect on their Learning
  - Leverage Multiple Tools to Support Their Learning
    - Contextually Choose Tools
  - Abandon Strategies that are Ineffective



Teachers need to scaffold and support the use of supportive technologies to facilitate the development of expert learners



# Using Data for Decision Making

- Deciding Supports for Students
  - Example Tools
    - uPar
    - DeCoste Writing Protocol
- Assessment and Progress Monitoring
  - Backend Dashboards and Data Systems
    - Snap and Read
    - CoWriter Universal
    - Texthelp Read and Write
    - Equatio

# Questions?





2022 NeMTSS SUMMIT

# CREATING COHERENCE

*October 13-14, 2022*



## WE WANT YOUR FEEDBACK!

Scan the QR code to complete a brief evaluation after each session throughout the summit.