

The Future of Artificial Intelligence and It's Impact on Education

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Eastern Suffolk BOCES
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Preparing for the Future Begins by Caring for the Present



Pressing Challenges

- Learning Loss



Pressing Challenges

- Learning Loss
- How To Do School



Pressing Challenges

- Learning Loss
- How To Do School
- Mental Health



Pressing Challenges

- Learning Loss
- How To Do School
- Mental Health
- Parent/Community Pressure



Pressing Challenges

- Learning Loss
- How To Do School
- Mental Health
- Parent/Community Pressure
- School Safety

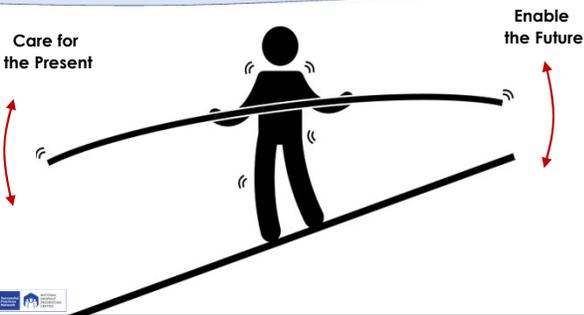


Pressing Challenges

- Learning Loss
- How To Do School
- Mental Health
- Parent/Community Pressure
- School Safety
- Workforce Pipeline



From Stabilizing to Transitioning the System



Care for the Present

Enable the Future

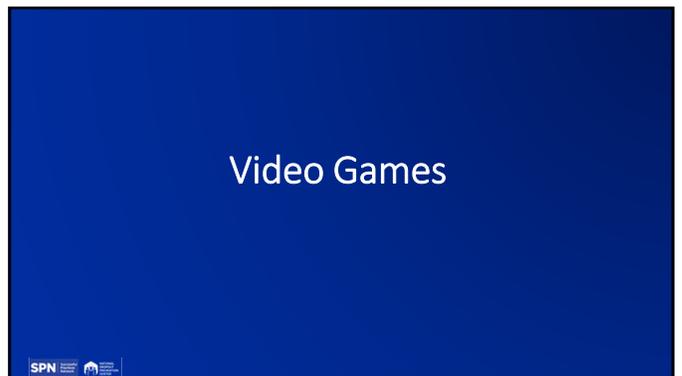
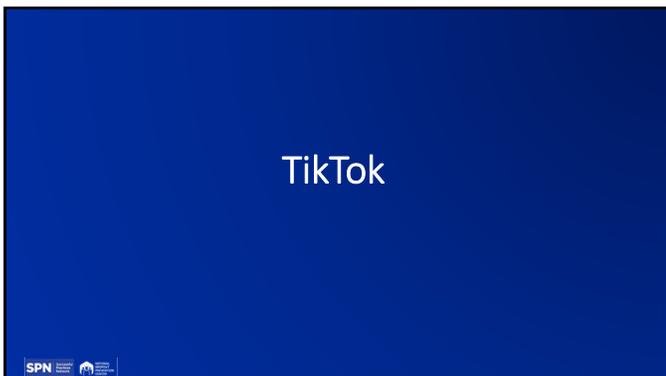


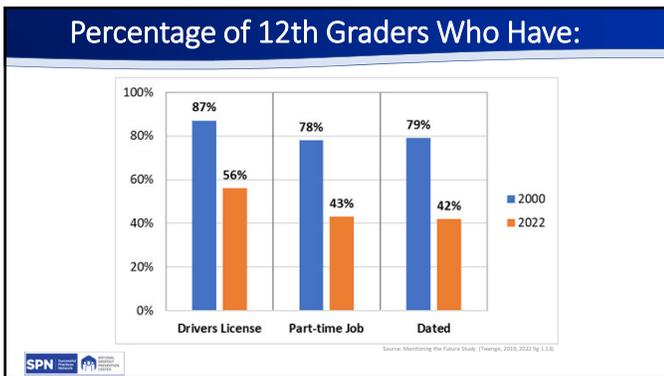
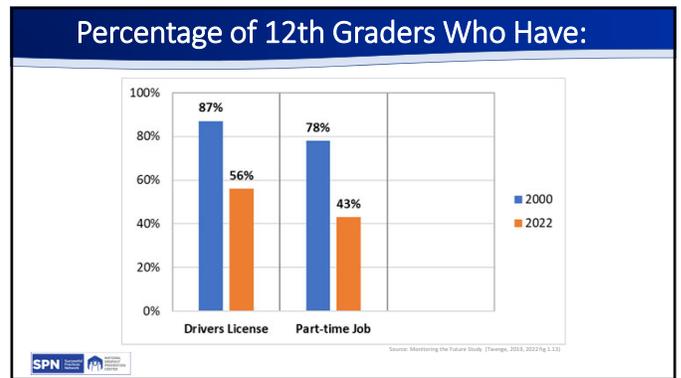
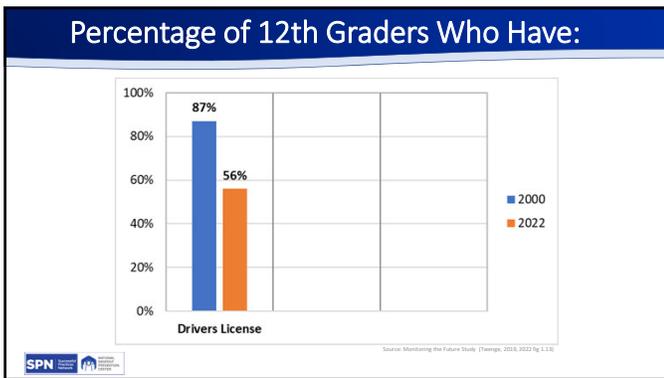
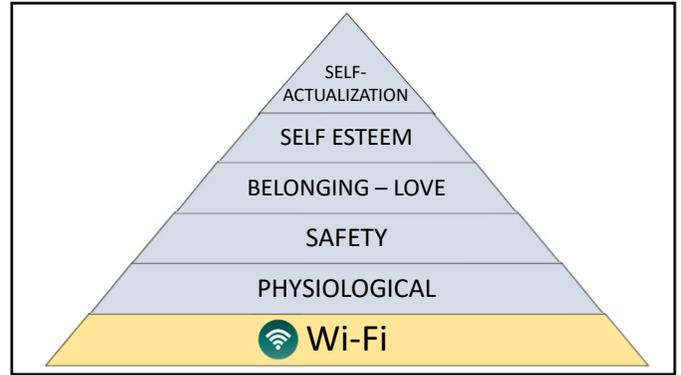
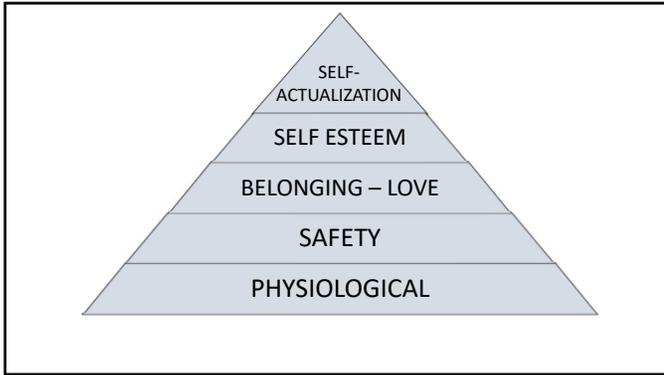
WHY



Our Kids Are Different







**Our Kids
Are
Different**

**Workplace,
Home, and
Society**

SPN

We are moving from the age of IT
to
the age of AI



Print changed how people communicated
and learned, which impacted the
knowledge and skills they needed.



Print changed how people communicated
and learned, which impacted the
knowledge and skills they needed.

AI is having the same impact – just at
lightning speed.



ChatGPT (OpenAI)



ChatGPT (OpenAI)
to
BARD (Google)



ChatGPT (OpenAI)
to
BARD (Google)
to
LLaMa (Meta)



ChatGPT (OpenAI)
to
BARD (Google)
to
LLaMa (Meta)
to
ClaudeAI

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Microsoft Bing

Opportunities

Teaching Assistant

AI can.....

- Lesson plans
- Describe a lesson and ask for way to make it more engaging
- Assessments
- Curriculum
- Communications with parents
- IEPs

Write an email to a parent who wants to assist their child in reading. The child is reading below the grade 4 level and is a reluctant reader. The child is very interested in football.

Dear [Parent's Name],

We hope this email finds you and your family in good spirits. We are writing to you today in response to your query about assisting your child in improving their reading skills. It's wonderful to hear that you are proactive and invested in your child's development.

We understand that your child is currently reading below the grade 4 level and shows some reluctance towards reading. It's not uncommon for children to face challenges in reading or to show reluctance towards it. The key is to find ways to make reading more engaging and enjoyable for them.

Since your child is very interested in football, we can use this passion to fuel their interest in reading. Here are a few suggestions:

1. Football Books: Start by providing books that are centered around football. There are many books available that cater to different reading levels and interests - from football storybooks to football player biographies, and books on football facts and trivia.

2. Interactive Reading: Make reading a fun and interactive activity. For instance, you could read a football book together, and then watch a football match or play a game of football. This will create a positive association with reading.

3. Setting Goals: Just like in football, setting goals can be a motivating factor. Set small, achievable reading goals for your child and celebrate when they achieve them. For example, reading a chapter a day or finishing a book in a week.

4. Positive Reinforcement: Provide positive reinforcement when your child makes progress. Praise them for their efforts and provide rewards, such as football stickers or trading cards.

Remember, the goal is to make reading enjoyable and engaging for your child, so they will be motivated to read more.

Additionally, it's important to be patient and supportive during this journey. It may take some time, but with consistent effort and encouragement, your child can improve their reading skills.

Thank you for your commitment to your child's education. If you have any further questions or need more assistance, please do not hesitate to contact us.

Warm regards,

[Your Name] [Your Position] [Your Organization]

Recommend specific books on football

Certainly! Here are some football books that may engage your child and help improve their reading skills:

- 1. World Soccer Legends series by Illugi Jökulsson:** These are biographies of world-famous football players like Messi, Ronaldo, and Neymar. The language is accessible, and it is filled with fun facts, illustrations, and photographs.
 - 2. The Football Boy Wonder by Martin Smith:** This is a fictional story about a boy who dreams of becoming a footballer. It is an exciting and inspirational read for children.
 - 3. The Unofficial Guide to World Cup by Michael Coleman:** This book is filled with fun facts, statistics, and history about the FIFA World Cup. It is engaging and informative.
 - 4. Football Superstars series by Kirsty Holmes:** This series features the biographies of current football stars. The language is simple and accessible.
 - 5. Frankie's Magic Football series by Frank Lampard:** This is a series of adventure books featuring a boy named Frankie and his football-loving friends. The series combines the excitement of football with magical adventures.
- Remember to encourage your child to read at their own pace and provide positive reinforcement along the way. Happy reading!

Recommend books about American football

Absolutely, here are some books centered around American football that could be suitable for your child:

- 1. "Family Huddle" by Peyton Manning, Eli Manning, and Archie Manning:** This is a picture book that details the Manning brothers' childhood with fun illustrations. It's a great story about family and football.
 - 2. "The Dog That Stole Football Plays" by Matt Christopher:** This is a fun and lighthearted book about a boy and his dog who can predict football plays. Matt Christopher has written many sports-themed books for children, so you might find other books by him that your child would enjoy.
 - 3. "Touchdown Kid" by Tim Green:** This is a story about a young boy who gets a scholarship to an elite private school and has to prove himself on the football field. Tim Green, a former NFL player, has written many sports-themed books for kids.
 - 4. "Football Double Threat" by Matt Christopher:** This book is about a boy who struggles to choose between playing football or focusing on his grades.
 - 5. "Little Rhino: My New Team" by Ryan Howard and Krystle Howard:** This is the first book in a series about a boy who plays little league football.
- Remember to check the reading level and suitability of each book before giving it to your child. Enjoy reading!

Write a 4th grade math lesson plan on geometry.

Write a 4th grade math lesson plan on geometry.



Exploring Shapes and Their Attributes

Objective: Students will be able to identify and describe the attributes of 2D and 3D shapes.

Introduction (10 minutes):

- Begin the lesson by introducing the topic of geometry and explain that it is the study of shapes and their properties.
- Ask the students to brainstorm different shapes they know and write them on the chart paper.
- Review the definitions of "2D" and "3D" and explain that we will be exploring both types of shapes.

Direct Instruction (20 minutes):

- Introduce different 2D shapes, such as square, rectangle, triangle, circle, and hexagon.
- Draw each shape on the whiteboard and ask the students to identify the number of sides and corners each shape has.
- Discuss the attributes of each shape, such as the length of sides, angles, and symmetry.
- Introduce 3D shapes, such as cube, sphere, cylinder, and cone, and discuss their attributes, such as faces, edges, and vertices.

Guided Practice (20 minutes):

- Divide the class into groups and provide each group with a geoboard and rubber bands.
- Instruct the students to create different 2D shapes on the geoboard using rubber bands.
- Have the students share their shapes with the class and describe the

attributes of their shapes.

- Provide each group with a set of 3D shapes and ask them to identify and describe the attributes of each shape.

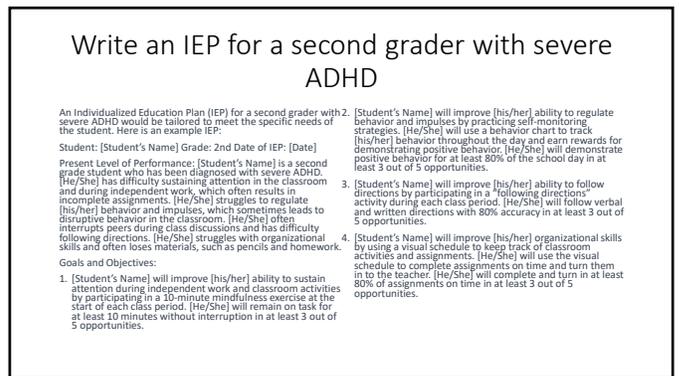
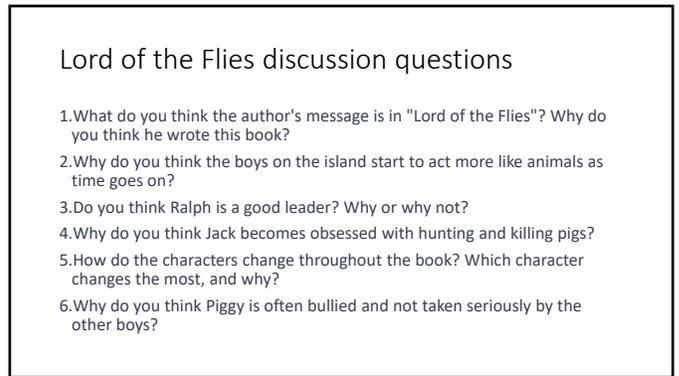
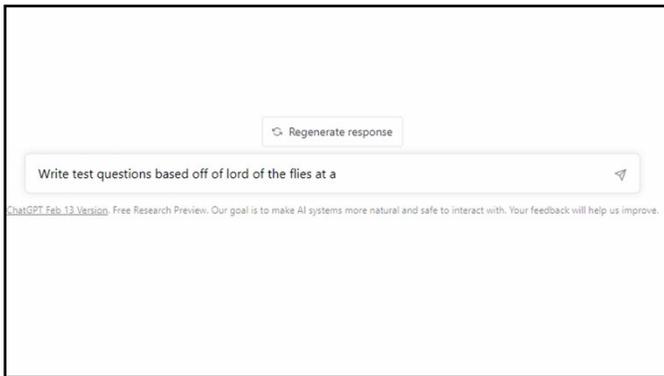
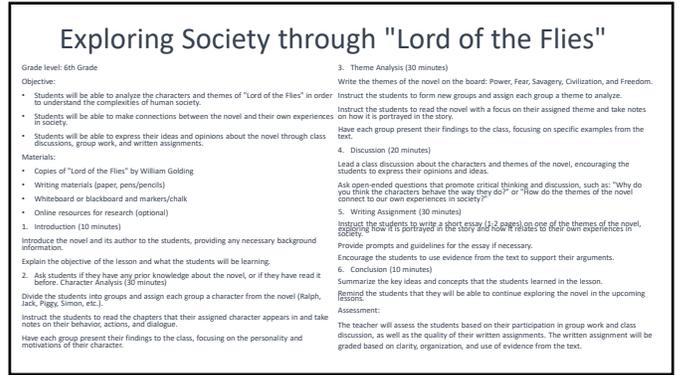
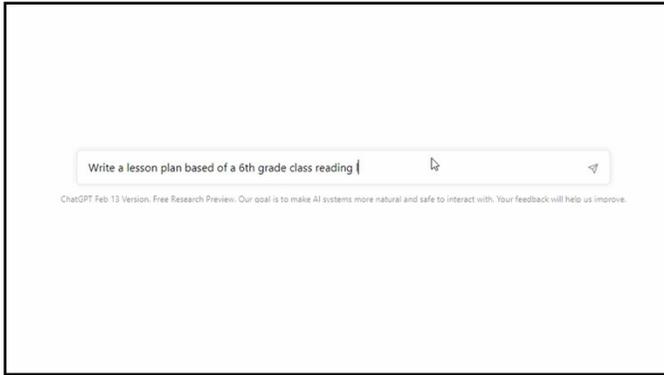
Independent Practice (20 minutes):

- Provide each student with a worksheet on identifying and describing shapes.
- Instruct the students to complete the worksheet independently.
- Circulate the room to provide assistance to students as needed.

Closure (10 minutes):

- Review the different types of shapes and their attributes.
- Ask the students to identify the most challenging part of the lesson and provide an opportunity for questions or clarification.
- Assign homework on identifying shapes in the environment and describe their attributes.

Assessment: The students' understanding of 2D and 3D shapes and their attributes will be assessed through their participation in group and independent activities, as well as their completion of the worksheet. The teacher will also observe and assess the students' ability to identify and describe the attributes of the different shapes during the guided practice activity.



Special Education and Related Services: [Student's Name] will receive the following special education and related services to support [his/her] academic and social-emotional development:

1. Small group instruction in reading and math
2. Counseling services to address social-emotional needs
3. Consultation with the school psychologist to develop behavior management strategies
4. Occupational therapy to support fine motor skills and handwriting
5. Speech and language therapy to support communication and social skills

Assessment and Progress Monitoring: [Student's Name] will be assessed and progress monitored in the following ways:

1. Ongoing observation by the teacher and other school staff
2. Review of progress on IEP goals at least every 6 months
3. Administration of formal assessments, such as the Woodcock-Johnson Tests of Achievement and the Behavior Assessment System for Children, as needed to inform instruction and measure progress

Placement: [Student's Name] will be placed in a general education classroom with support from special education and related services.

Parental Involvement: [Student's Name]'s parents will be involved in the development and implementation of the IEP. They will receive progress reports at least every 6 months and will be invited to participate in IEP meetings. The school will provide information and resources to support the parents in understanding and advocating for their child's education.

Example of AI in education

NWEA - MAP



Example of AI in education

NWEA - MAP

- Increasingly challenging questions to edge of student knowledge/skill.



Why does it rain?



ChatGPT Prompt

 Pretend to be a person with IQ of 50. Why does it rain? 

 It rain because the sky cry, it get sad and the tear fall down on the ground. That how it make everything all wet.  



ChatGPT Prompt

 Pretend to be a person with IQ of 100. Why does it rain?

 Well, when the ground gets too warm, the water in the air turns into tiny droplets. And when these droplets get too heavy, they fall to the ground. That's why it rains! It's also caused by the sun heating up the Earth and water evaporating into the air. And when the air gets too full of water droplets, they fall back down to the Earth as rain.  



Pretend to be a person with IQ of 200. Why does it rain?

Rain is the result of a complex set of meteorological processes that occur in the Earth's atmosphere. Water vapor, which is the gaseous form of water, is present in the air we breathe. As the sun heats the surface of the earth, some of the water vapor in the air is heated and rises into the atmosphere, where it cools and condenses into tiny droplets of liquid water or ice crystals. These droplets or crystals become heavy enough to fall to the ground as precipitation, which includes rain, sleet, snow, and hail. The specific conditions that lead to rain include the presence of moisture in the atmosphere, rising and cooling air, and the formation of clouds, which are made up of millions of these droplets or crystals. The amount of rain that falls, and where and when it falls, is determined by complex interactions between the temperature, pressure, and wind patterns in the atmosphere, as well as topographical features of the earth's surface.

SPN

explain rain to a student with a Lexile score of 300

Rain is when water comes down from the sky. This happens because of a thing we call the "water cycle". Here's how it works:

- 1. Sun Heats Water:** The sun's warmth makes water in oceans, lakes, and rivers turn into a gas called water vapor. This is called "evaporation".
- 2. Water Vapor Rises:** The water vapor rises into the air.
- 3. Clouds Form:** When the water vapor gets high up where the air is colder, it turns back into tiny water droplets. These droplets gather together and form clouds. This is called "condensation".
- 4. Rain Falls:** When lots of these tiny droplets come together, they become too heavy to stay in the cloud. They then fall down to the ground as rain. This is called "precipitation".

So, when you see rain, it is part of this big water cycle that is always happening around us. Isn't that cool?

explain it to a student with a Lexile score of 600

Rain is a fascinating part of nature, and it's all due to a process known as the water cycle. The water cycle consists of several key stages:

- 1. Evaporation:** This is the first step. When the sun shines on bodies of water, like lakes, rivers, and oceans, the heat makes the water turn into a gas called water vapor. This vapor rises up into the sky.
- 2. Condensation:** As the water vapor goes higher into the sky where the air is cooler, it changes back into tiny droplets of water. These droplets gather together in the sky and form what we see as clouds.
- 3. Precipitation:** When a lot of these tiny water droplets combine in a cloud, they become larger droplets. Eventually, these droplets become too big and heavy to remain in the cloud. They then fall to the ground as rain.

So, when we see rain, it's actually the end of a process that started with the sun heating up water on the earth's surface. This cycle keeps going, as the rainwater will again be heated by the sun and evaporate, starting the process all over again. This continuous movement of water is a critical part of our planet's climate and helps support all life on earth.

explain it to a student with a Lexile score of 1200

Rain is an integral part of Earth's hydrologic cycle, also known as the water cycle, a critical driver of our planet's overall climate and ecosystem health. This cycle is characterized by a series of complex processes:

- 1. Evaporation:** Solar radiation warms bodies of water — such as oceans, lakes, and rivers — causing the water molecules to gain energy and transition into a gaseous state known as water vapor. This is the process of evaporation. Water is also added to the air through the process of transpiration, where plants release water from their leaves.
- 2. Condensation:** As the water vapor ascends into the atmosphere, it encounters cooler air temperatures. This causes it to condense, transforming back into a liquid state, albeit in the form of microscopic droplets. These droplets cluster together to form clouds, an occurrence facilitated by particulates present in the atmosphere, known as condensation nuclei.
- 3. Precipitation:** Over time, these minuscule water droplets within the clouds can combine through a process called coalescence, growing larger until they are heavy enough to overcome the buoyant forces within the cloud. They then descend towards Earth's surface as rain.

Rain and other forms of precipitation (like snow or hail) are crucial for replenishing Earth's freshwater supplies. After the water falls, it's returned to bodies of water through various pathways including runoff and groundwater flow, ready to begin a new cycle of evaporation.

This continual circulation of water, from the Earth to the atmosphere and back, not only affects the distribution and availability of freshwater around the world, but also plays a critical role in Earth's overall energy balance and climate regulation. Understanding these intricate processes allows us to better appreciate our dependence on and relationship with the natural world.

Example of AI in education

NWEA - MAP

- Increasingly challenging questions to edge of student knowledge/skill.
- Then personalize to student interest

ClaudeAI

Example text set & comparative analysis:



Charles Cooley's "Social Consciousness" (1902)



Walter Benjamin's "The Work of Art in the Age of Mechanical Reproduction" (1935)



Elting E. Morison's "A Case Study of Innovation" (1950)

Prompt (Claude.ai) ...

Cooley identifies the ways in which unchecked capitalism dehumanized Americans during the industrial revolution, and argues for a "social consciousness" to guide America toward a better future. Benjamin begins by making an aesthetic argument around the mechanization of the creation of art using advanced technology, but goes on to extend his argument to write about how mechanical production under capitalism, without changing the "property system" or economic system, naturally becomes fascism and excess productivity and discontent is expressed through warfare. — Now, armed with this information, I would like you to synthesize these ideas, and consider how our modern era and the advent of artificial intelligence may signal another turning point in history. Do you think that the limitless productivity that lies in the promise of artificial intelligence will awaken us to a higher purpose, or send us into the darkest period of mechanized destruction the world has ever seen?

... and response (Claude.ai)

That's an excellent synthesis of the key ideas in the Cooley and Benjamin essays. It's thought-provoking to consider how their critiques and concerns might apply to our current technological moment, particularly the rise of AI.

On one hand, the tremendous productivity and efficiency promised by AI could liberate humanity to pursue higher ideals and collective betterment. If more mundane tasks are automated, it could free our energy and attention for creativity, connection, intellectual pursuit, and spiritual growth.

However, there are also risks that without sufficient foresight and changes to our economic models, the fruits of AI could be concentrated in the hands of a few, exacerbating inequality and discontent. And the same technology that promises progress could also enable new forms of mechanized control and destruction.

I don't think the outcome is predetermined. As we've seen throughout history, technology itself is only a tool - neither inherently good nor bad. It all depends on how we choose to develop, govern and utilize these tools. With wisdom, ethics and concerted effort, I am hopeful we can employ the power of AI to create a more just, peaceful and enlightened society. But it will require overcoming tendencies toward greed, exploitation, dehumanization.

The challenges are great, but so is the potential if we have the courage to transform our social consciousness. What gives me hope is seeing people like Cooley and Benjamin shine light on these issues decades ago. It means we can learn from the past to consciously create an ethical, human-centered AI future. But it will require vigilance, collective action, and continually re-examining our values as technology evolves. An encouraging yet humbling task. I don't have definitive answers, but I appreciate you inviting me to consider these profound questions. Please let me know if you would like to discuss any aspect of this further.

Pushing further ...

I have not read the Elting E. Morison essay, however a colleague of mine recommended it as I explore this topic of inquiry. How does it relate to the conjectures we have drawn by synthesizing the Cooley and Benjamin essays?

Based on my reading, I see some interesting connections between the Morison essay and the ideas we discussed from the Cooley and Benjamin readings:

- Morison explores resistance to technological and organizational change, even changes that offer clear benefits. This relates to Benjamin's argument that changes in the mode of production/technology transform society, often in ways the existing order resists.
- Morison examines how military hierarchies and bureaucracies ossify and defend the status quo. This resonates with Cooley's critique of how unchecked institutions lose sight of human needs.
- The case study suggests change often requires pressure from outside established power structures. This aligns with Benjamin's claim that ruling classes block transformations that threaten their control.
- Morison advocates engaging our identifications and loyalty to broader shared goals vs narrow interests. This echoes Cooley's call for more enlightened social consciousness beyond self-interest.
- The essay shows how disruptive new technologies can be initially rejected. This parallels Benjamin's argument that mechanical reproduction revolutionizes art and society.

In summary, Morison provides a detailed case study exploring themes of how societies and institutions adapt (or don't) to changing material and technological realities. This enriches the more theoretical arguments made by Cooley and Benjamin about these dynamics. Let me know if you need me to expand on any connection points that seem relevant.

And further ...

In what ways does Morison ground the more theoretical frameworks from Cooley and Benjamin?

You raise an excellent point - Morison's case study provides concrete grounding for some of the more abstract ideas put forth by Cooley and Benjamin. A few key ways Morison's analysis anchors their theoretical frameworks:

- He looks at specific individuals and institutions responding to a technological change, illustrating the human elements involved.
- He examines the tensions and conflicts that arise in granular detail, bringing to life the struggle between forces of change and resistance.
- Morison delves into the interpersonal, psychological, and organizational dynamics, going beyond broad societal analysis.
- The narrative format creates a more tangible and vivid depiction of how these theories operate in practice.
- His conclusions and suggestions have immediate real-world applicability, taking the philosophies of Cooley and Benjamin from lofty ideals into practical guidance.
- He borrows from specific disciplines like psychology and organizational behavior to provide multidisciplinary support.

In essence, Morison puts flesh on the theoretical bones provided by Cooley and Benjamin, bridging the gap between abstraction and lived experience. He grounds their insights in the messiness of real life, yet retains the compelling power of their ideas. Please let me know if you need any clarification or have additional thoughts to discuss on this topic.

Personalized AI Tutor

SPN

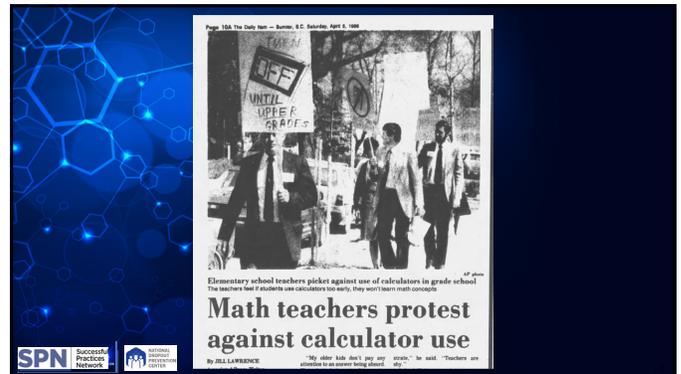
Shift from a Proficiency to a Growth Model

Example of AI in education

NWEA - MAP

- Increasingly challenging questions to edge of student knowledge/skill.
- Then personalize to student interest
- Create suggested curriculum, instructional strategies and assessments

Challenges



ChatGPT

ChatGPT can write:

- Poetry
- Essays
- Writing assignments
- Complete math problems

AI test classifier

GPTZero

Have ChatGPT prepare test questions to evaluate students' knowledge of what they wrote.

Use ChatGPT for a first draft and then direct students to improve upon it.

“Where will I ever use this?”
“Why do I need to learn this?”

Shift classroom instruction and homework

Cyber Security

Artificial Intelligence
In the World Beyond School

ChatGPT

ChatGPT can write:

- Technical reports
- Law briefs
- Code

```

USER
this code is not working like i expect — how do i fix it?

resultWorkerErr := make(chan error)
defer close(resultWorkerErr)
go func() {
    defer cancel()
    resultWorkerErr <- b.resultWorker(ctx)
}()

err := b.worker(ctx)
cancel()
if err == nil {
    return <-resultWorkerErr
}
return multierror.Append(err, <-resultWorkerErr)

```

Shift from **Content**

Shift from Content to **Skills**.

Industrial-age machines enabled workers to accomplish physical task beyond the capabilities of their own bodies.

Industrial-age machines enabled workers to accomplish physical task beyond the capabilities of their own bodies.

AI is doing the same to knowledge workers.

Impact of AI in corporate workplace

- 7% of jobs will be eliminated
- 67% of workers will have half of their workload impacted
- 30% will have minor impact (physical labor and human touch)

AI will:

- Replace some jobs

AI will:

- Replace some jobs
- Fundamentally change many jobs

Jobs at Risk by AI

- Computer programmers
- Coders
- Software developers and engineers
- Content creators
- Technical writers
- Journalist
- Advertisers
- Para legals

Jobs at Risk by AI

- Court reporters
- Legal secretaries
- Medical secretaries
- Data entry clerks
- Medical assistants
- Medical records personnel
- Market researchers
- Financial analysts

Jobs at Risk by AI

- Data managers
- Traders
- Insurance agents
- Graphic designers
- Accountants
- Bookkeepers
- Customer service agents
- Web designers

Co-Counsel

ChatGPT applications in legal profession

- Conduct legal research

ChatGPT applications in legal profession

- Conduct legal research
- Summarize court opinions and filings

ChatGPT applications in legal profession

- Conduct legal research
- Summarize court opinions and filings
- Assemble, analyze and create redline version of contracts

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- Propose arguments for legal briefs and filing
- Prepare deposition questions

ChatGPT applications in legal profession

- Conduct legal research
- Summarize court opinions and filings
- Assemble, analyze and create redline version of contracts
- Propose arguments for legal briefs and filing
- Prepare deposition questions
- All communications



AI will:

- Replace some jobs
- Fundamentally change many jobs
- **Create new jobs**



In 1970's the prediction was ATMs would dramatically reduce the need for bank tellers.



There are more bank tellers today than there were in the 1970's.

But they perform different tasks and need a different set of skills.



Most workers will not be replaced by AI.



Most workers will not be replaced by AI.

They will be replaced by a person with skills that AI does not possess.



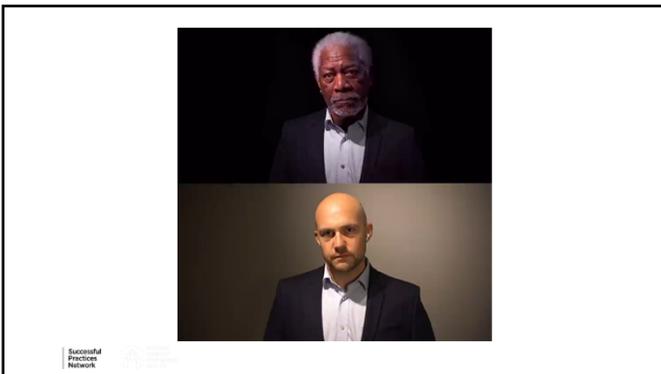
Technology applications embedding AI

- Deep Fake
- Blockchain
- Bioscience
- Nanotechnology
- Virtual and Augmented Reality
- Machine Learning
- 3D Printing

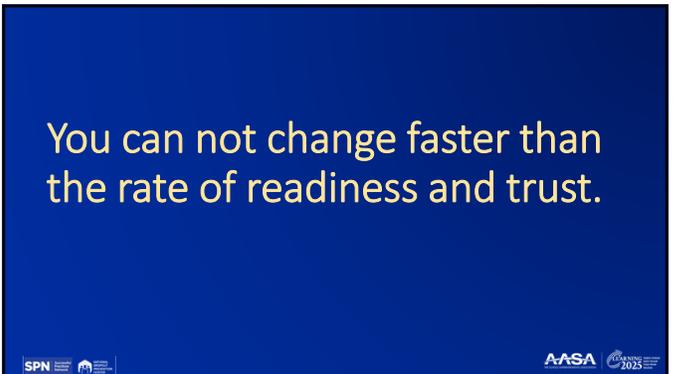


Technology applications embedding AI

- Deep Fake



Successful Practices Network



at t n # 2023

Our Kids
Are
Different





How do
SCHOOLS
Bridge the Gap?

Workplace,
Home, and
Society





What should we be focused on?

What should we be focused on?

- The challenges to and opportunities for our existing instructional practices?

What should we be focused on?

- The challenges to and opportunities for our existing instructional practices?
- The skills, knowledge and attributes our students will need to be independent in the AI age?

Needed

- Knowledge
- Skills

A critical skill in the age of artificial intelligence is the ability to do sophisticated **editing**.

A critical skill in the age of artificial intelligence is the ability to write sophisticated **prompts**

A critical skill in the age of artificial intelligence is **digital ethics**.

- ### Needed
- Knowledge
 - Skills
 - Attributes
 - Dispositions

- ### Worker will need to:
- Develop skills not easily replicated by AI
 - Be able to work in an AI environment
 - Be resilient and adaptable

56 foundational skills that will help citizens thrive in the future of work.

56 DELTAS across 13 skill groups and four categories

Cognitive	Interpersonal
Critical thinking <ul style="list-style-type: none"> ● Structured problem solving ● Logical reasoning ● Understanding biases ● Seeking relevant information 	Building systems <ul style="list-style-type: none"> ● Risk modeling ● Involvement negotiations ● Drafting an impact case ● Organizational awareness
Planning and ways of working <ul style="list-style-type: none"> ● Work plan development ● Time management and prioritization ● Agile thinking 	Developing relationships <ul style="list-style-type: none"> ● Integrity ● Empathy ● Flexibility
Communication <ul style="list-style-type: none"> ● Copywriting and public speaking ● Asking the right questions ● Synthesizing messages ● Active listening 	Teamwork effectiveness <ul style="list-style-type: none"> ● Facilitating individuals ● Encouraging effective collaboration ● Resolving conflicts
Market flexibility <ul style="list-style-type: none"> ● Creativity and imagination ● Persuading/brokerage to different contexts ● Adopting a customer perspective ● Resilience ● Ability to learn 	Collaboration <ul style="list-style-type: none"> ● Leading ● Facilitating
Self-leadership	Digital
Self-awareness and self-management <ul style="list-style-type: none"> ● Understanding own emotions and triggers ● Self-control and regulation ● Understanding own strengths 	Digital fluency and citizenship <ul style="list-style-type: none"> ● Digital fluency ● Digital learning ● Digital collaboration ● Digital ethics
Entrepreneurship <ul style="list-style-type: none"> ● Courage and risk-taking ● Driving change and innovation 	Software use and development <ul style="list-style-type: none"> ● Programming literacy ● Data analysis and statistics ● Computational and algorithmic thinking
Goal achievement <ul style="list-style-type: none"> ● Ownership and accountability ● Achievement orientation 	Understanding digital systems <ul style="list-style-type: none"> ● Data literacy ● Smart systems ● Cybersecurity literacy ● Tech translation and procurement

SOURCE: Marco Dondi, Julia Klier, Frederic Panier, and Jorg Schubert, 'Defining the skills citizens will need in the future world of work,' McKinsey & Company, June 2021



Do not abandon content but...

Needed

- Knowledge
- Skills



A critical skill in the age of artificial intelligence is the ability to do sophisticated **editing**.



A critical skill in the age of artificial intelligence is the ability to write sophisticated **prompts**



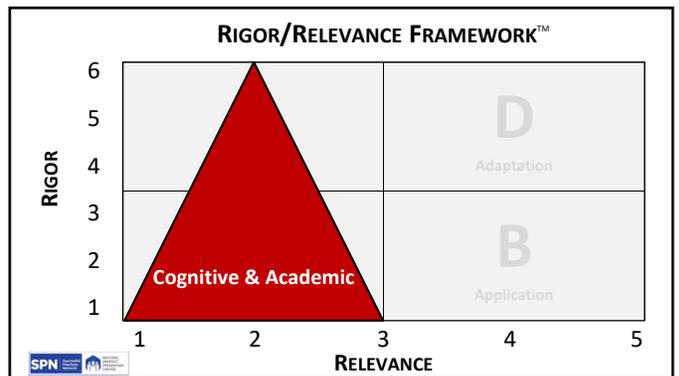
A critical skill in the age of artificial intelligence is **digital ethics**.

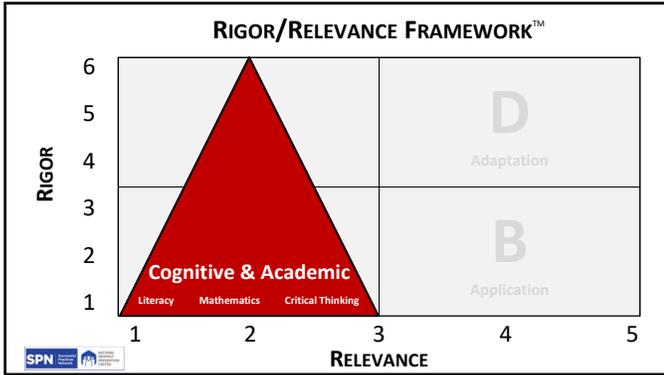


56 foundational skills that will help citizens thrive in the future of work.

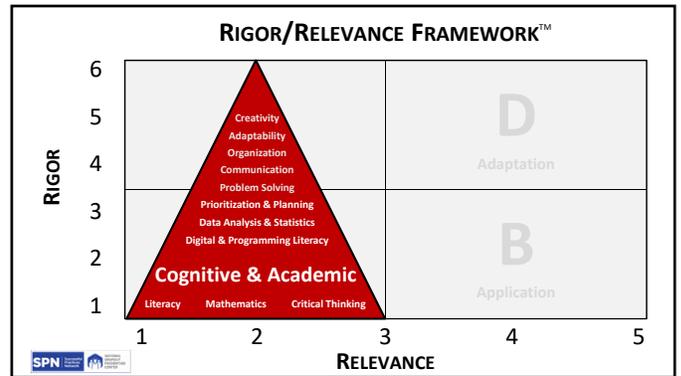
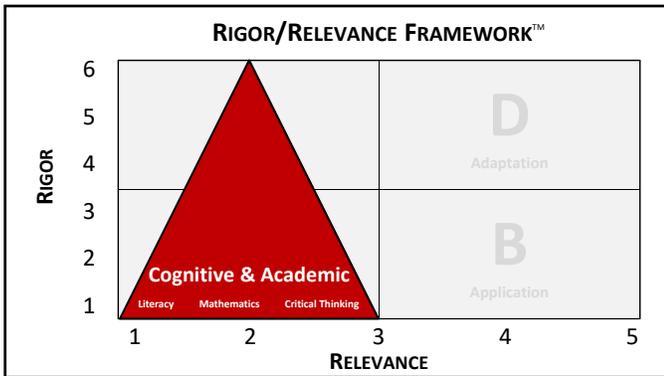
56 DELTAs across 13 skill groups and four categories

Cognitive Critical thinking Analytical thinking Logical reasoning Understanding texts Reading relevant information Communication Storytelling and public speaking Adding the right elements Reaching messages Active listening	Planning and ways of working Work plan development Time management and prioritization Agile working	Modeling systems Risk modeling Decision optimization Coding in working class Digital literacy awareness	Developing relationships Empathy Working smart Flexibility Sociability
Self-leadership Self-awareness and self-management Understanding own emotions, triggers and triggers Self-control and regulation Understanding own strengths Self-confidence Entrepreneurship Courage and risk-taking Strong energy and motivation Resilience Breaking out of bubbles Goal achievement Ownership and accountability Achievement orientation Coping with uncertainty Self-development	Mental flexibility Creativity and imagination Identifying knowledge to be shared Adapting to different audiences Flexibility Ability to learn	Network effectiveness Building relationships Including different perspectives Resolving conflicts Collaboration Coaching Mentoring	Digital Digital fluency and citizenship Digital literacy Digital learning Software use and development Programming literacy Data analysis and statistics Computational and algorithmic thinking Understanding digital systems Data literacy Smart systems Cybersecurity literacy Tech innovation and awareness

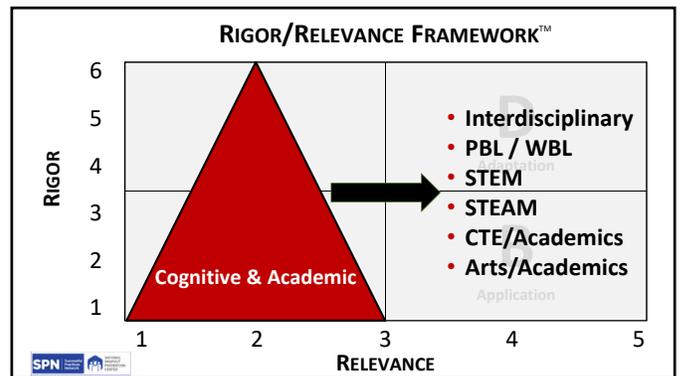





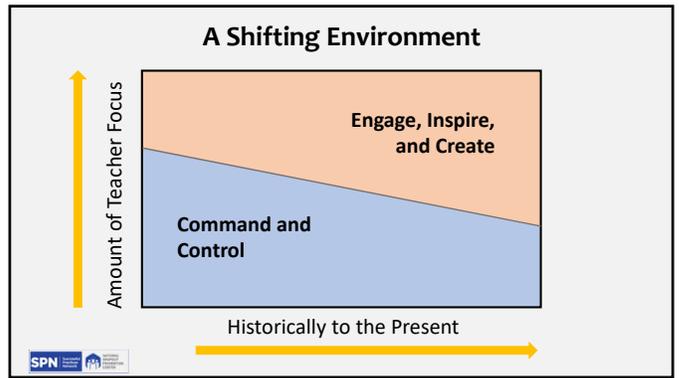
Shift from Content to **Skills**.



Build off what is working



We saw a shift in instructional practices from command and control to engage, inspire, and create.



56 foundational skills that will help citizens thrive in the future of work.

56 DELTAs across 13 skill groups and four categories

Cognitive Critical thinking Structured problem solving Logical reasoning Understanding biases Seeking relevant information Communication Storytelling and public speaking Asking the right questions Synthesizing messages Active listening	Planning and ways of working Work plan development and prioritization Time management and Agile thinking Metrics feasibility Creativity and imagination Translating knowledge to different contexts Adopting a different perspective Adaptability Ability to learn	Interpersonal Modeling systems Developing relationships Trust Empathy Social skills Teamwork effectiveness Fostering inclusiveness Encouraging others Resolving conflicts Resolving conflicts Coaching Mentoring
Self-leadership Self-awareness and self-management Understanding one's emotions and triggers Self-courtesy and regulation Understanding one's strengths Self-confidence Entrepreneurship Courage and risk-taking Driving change and innovation Energy, passion, and optimism Breaking orthodoxies Risk achievement Ownership and decision-making Resilience Coping with uncertainty Self-development	Digital Digital fluency and citizenship Digital literacy Digital ethics Digital collaboration Digital ethics Software use and development Programming literacy Data analysis and statistics Computational and algorithmic thinking Understanding digital systems Data literacy Cybersecurity literacy Smart systems Tech translation and empowerment	

SOURCE: Marco Dondi, Julia Klier, Frederic Panier, and Jorg Schubert. Defining the skills citizens will need in the future world of work. McKinsey & Company, June 2021

Cognitive & Academic

Creativity
Adaptability
Organization
Communication
Problem Solving
Prioritization & Planning
Data Analysis & Statistics
Digital & Programming Literacy
Literacy Mathematics Critical Thinking

Interpersonal

Honesty Trust Teamwork

Cognitive & Academic

Creativity
Adaptability
Organization
Communication
Problem Solving
Prioritization & Planning
Data Analysis & Statistics
Digital & Programming Literacy
Literacy Mathematics Critical Thinking

Interpersonal

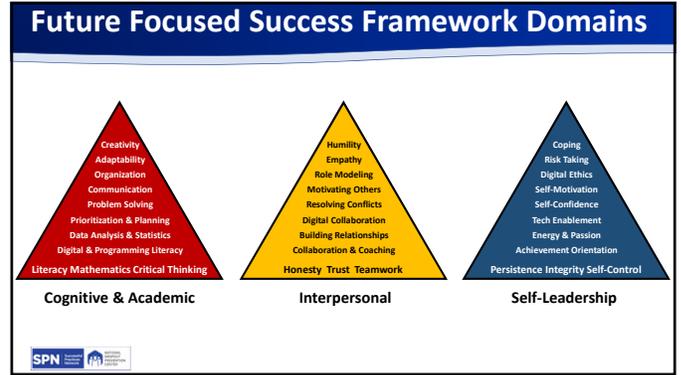
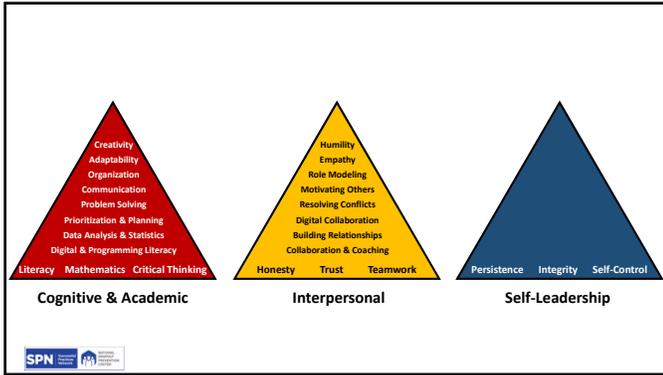
Humility
Empathy
Role Modeling
Motivating Others
Resolving Conflicts
Digital Collaboration
Building Relationships
Collaboration & Coaching
Honesty Trust Teamwork

56 foundational skills that will help citizens thrive in the future of work.

56 DELTAs across 13 skill groups and four categories

Cognitive Critical thinking Structured problem solving Logical reasoning Understanding biases Seeking relevant information Communication Storytelling and public speaking Asking the right questions Synthesizing messages Active listening	Planning and ways of working Work plan development and prioritization Time management and Agile thinking Metrics feasibility Creativity and imagination Translating knowledge to different contexts Adopting a different perspective Resolving conflicts Resolving conflicts Coaching Mentoring	Interpersonal Modeling systems Developing relationships Trust Empathy Social skills Teamwork effectiveness Fostering inclusiveness Encouraging others Resolving conflicts Resolving conflicts Coaching Mentoring
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SOURCE: Marco Dondi, Julia Klier, Frederic Panier, and Jorg Schubert. Defining the skills citizens will need in the future world of work. McKinsey & Company, June 2021



How well does your curriculum, instructional practices and assessments align to needed skills, knowledge and attributes?

SPN

The Rubrics for Future Focused Success classify the degree to which the **Curriculum, Instruction, and Assessment** exhibit future focused characteristics in the classroom. Additionally, a fourth category allows the teacher to rate the level at which **Students** are modeling future focused skills, knowledge, and dispositions.

The Rubrics for Future Focused Success have three domain categories: **Cognitive & Academic, Interpersonal, and Self-Leadership.**

SPN

We have ...

- an **Instructional Design** Issue

SPN

We have ...

- an Instructional Design Issue
- a **Workforce Design** Issue

SPN

We have ...

- an Instructional Design Issue
- a Workforce Design Issue
- a **Learning Space** Issue

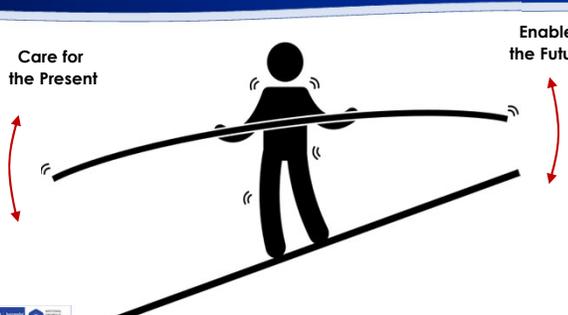


We have ...

- an Instructional Design Issue
- a Workforce Design Issue
- a **Learning Space** Issue
- an Assessment Issue

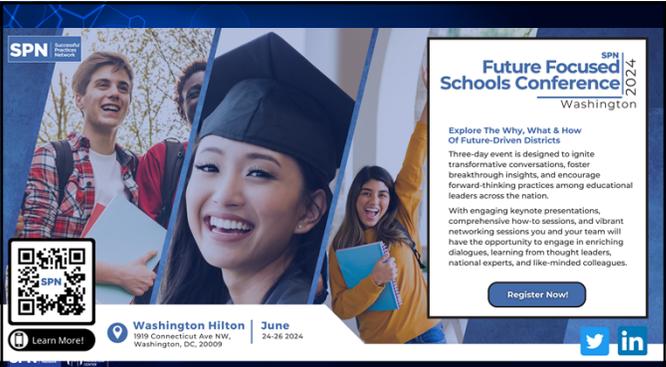


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