

ARE TODAY'S STUDENTS READY FOR COLLEGE AND CAREERS?



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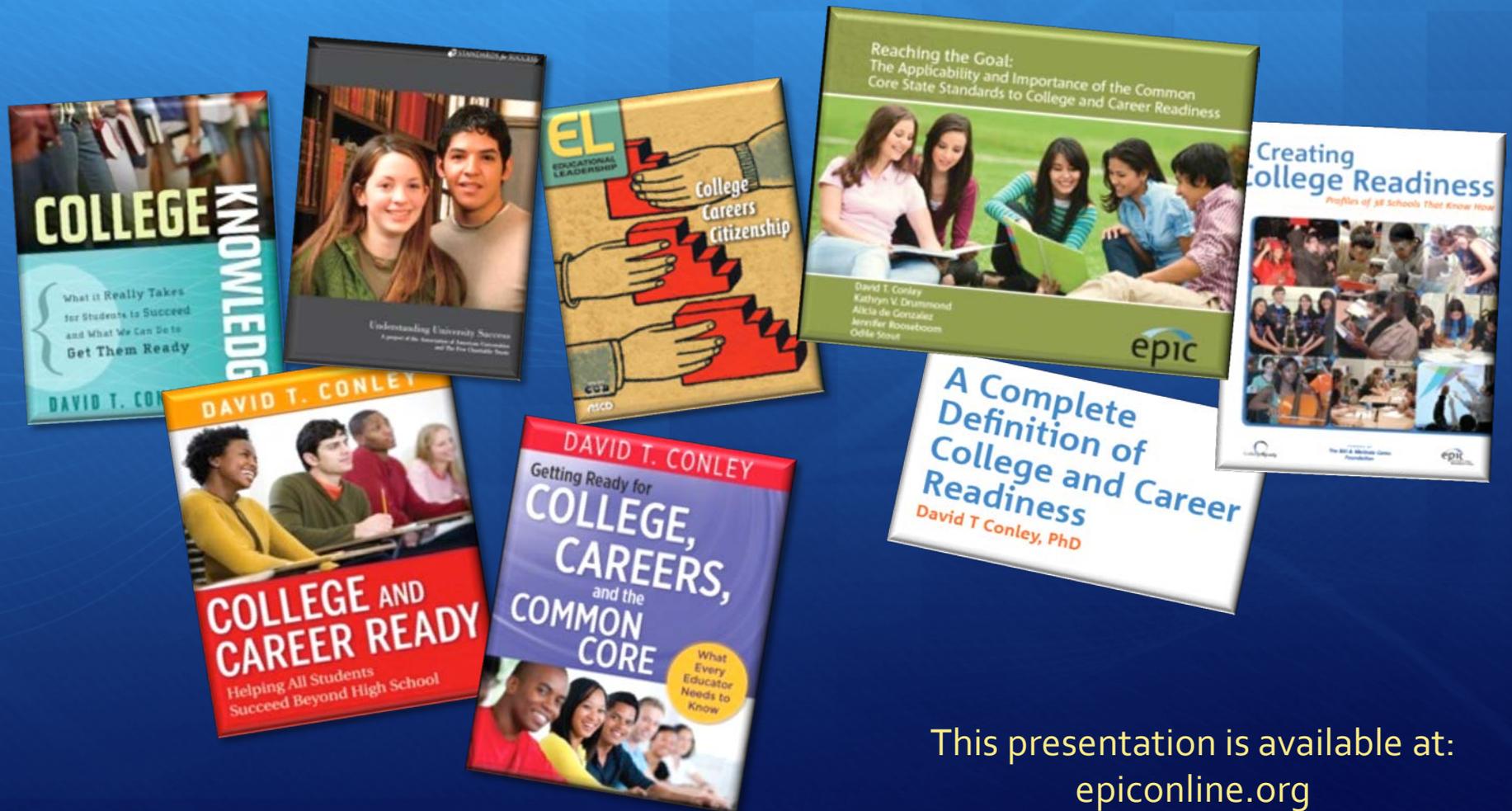
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Columbia, SC

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TODAY'S TALK DRAWS FROM RESEARCH ON COLLEGE AND CAREER READINESS



This presentation is available at:
epiconline.org

YESTERDAY

Manufacturing, clerical,
unskilled

One job for life in one
industry

Steadily increasing pay

Stay in hometown

Secure retirement

No real international
competition



TODAY

Service,
entrepreneurship,
high-skilled

Multiple jobs, career
pathways

Pay freezes/cuts

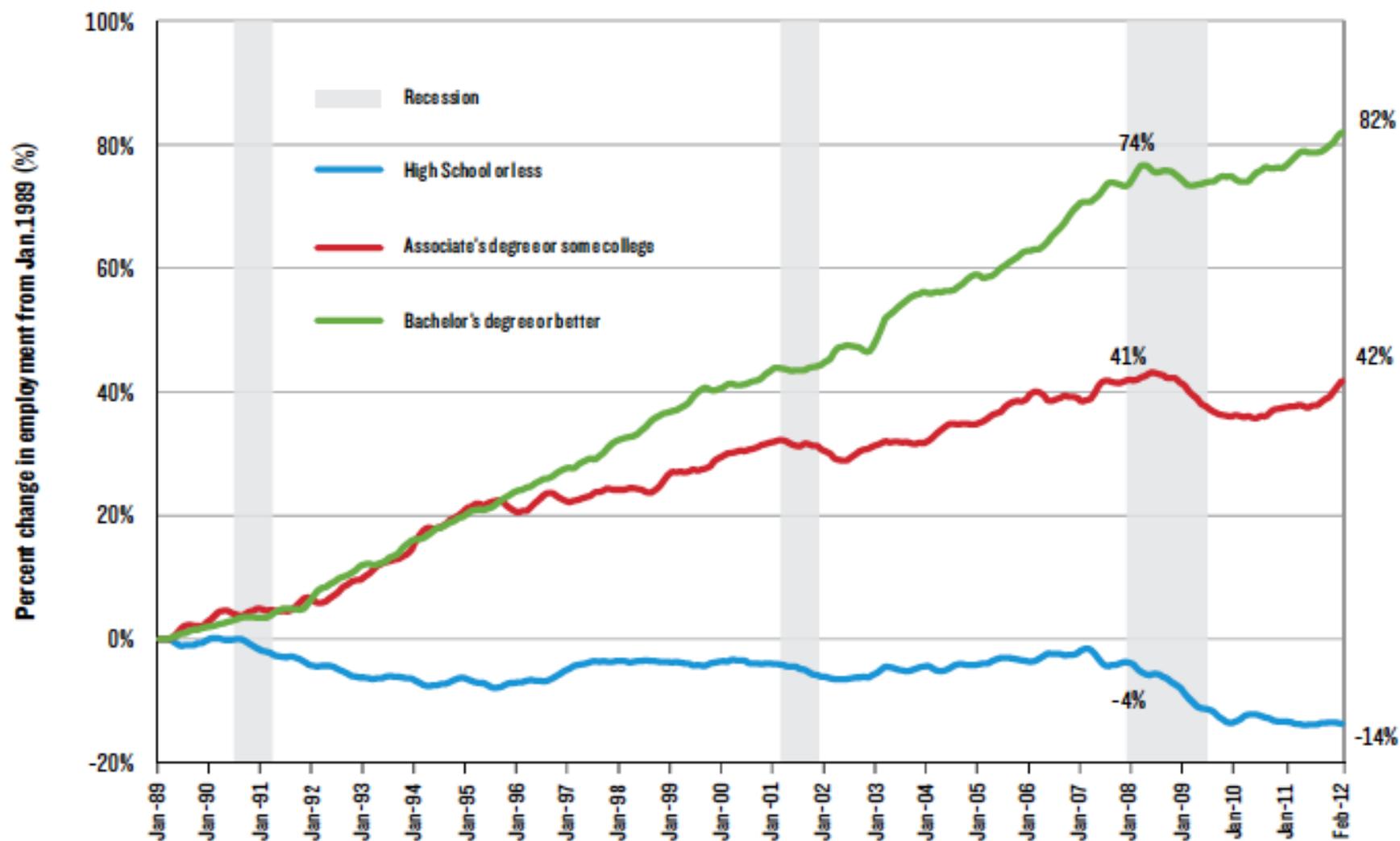
Mobility

Uncertain retirement

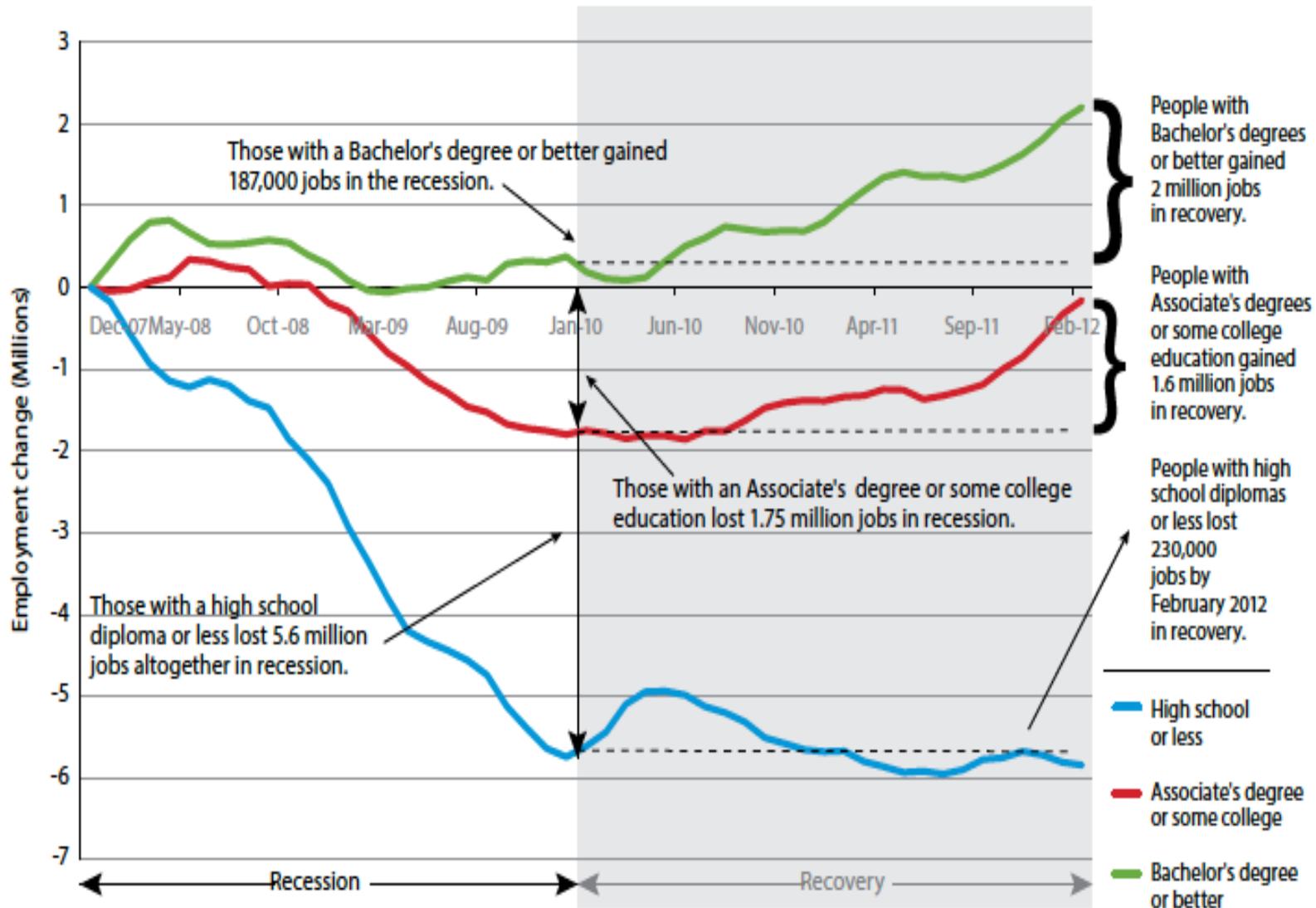
International
competition

Today's students are
entering a *different* world

FIGURE 5: Employment growth in the past two decades has been entirely through increases in the number of workers with some postsecondary education, while employment for those with a high school diploma or less has declined.

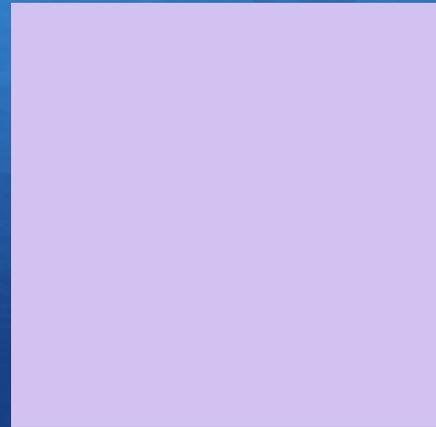
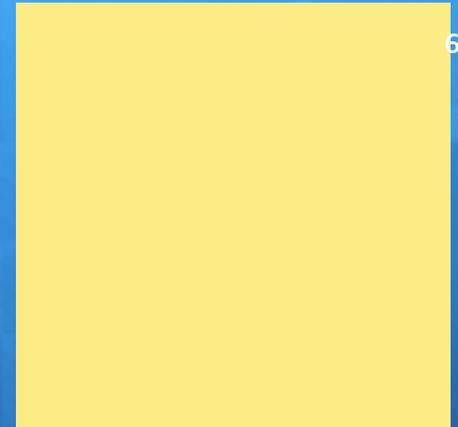


Source: Authors' estimate using Current Population Survey data (1989–2012). Employment includes all workers aged 18 and older.



Education Beyond High School Is *Critical*

+ We're entering a
**POLICY
ENVIRONMENT**
focused on *college
and career readiness*
for *far more*
students



- ◆ National and state emphasis on more students college/career ready
- ◆ Common Core State Standards aligned with college/career readiness
- ◆ Employer needs for better prepared workforce
- ◆ Pressure on postsecondary institutions to increase success rates
- ◆ Need to increase collaboration and communication with K-12 education
- ◆ Students attending postsecondary education becoming more diverse

WE FACE AN *ASPIRATIONS GAP*

- + Kids have gotten the message that they should *aspire to continue their education beyond high school.*
- + However, for many students, *aspirations do not end up aligning with behaviors or outcomes.*
- + And, the students most likely to have an aspirations gap are from groups *traditionally underrepresented in postsecondary education.*



Start with **100** middle school students...



93 say they *want to go college*. (-7% from previous)



70 graduate from high school. (-22% from previous)



44 enroll in college. (-37% from previous)



26 *earn a college degree* within six years of enrolling.
(-41% from previous)



WE LIVE IN A CERTIFICATE SOCIETY

ENVIRONMENTAL ENGINEERING TECHNICIANS

- + Example Tasks:
 - + **Conduct pollution surveys**, collecting and analyzing samples such as air and ground water.
 - + **Perform statistical analysis** and correction of air or water pollution data submitted by industry and other agencies.
 - + **Review technical documents** to ensure completeness and conformance to requirements.
 - + **Provide technical engineering support** in the planning of projects, such as wastewater treatment plants, to ensure compliance with environmental regulations and policies.
- + Necessary Skills:
 - + **Critical thinking**
 - + **Reading comprehension**
 - + **Judgment and decision making**
 - + **Complex problem solving**
 - + **Quality control analysis**
- + Degree and Certificate Pathways:
 - + **Associate of Science—Environmental Engineering Technology**
 - + **Certificate of Geotechnical Engineering Technology**

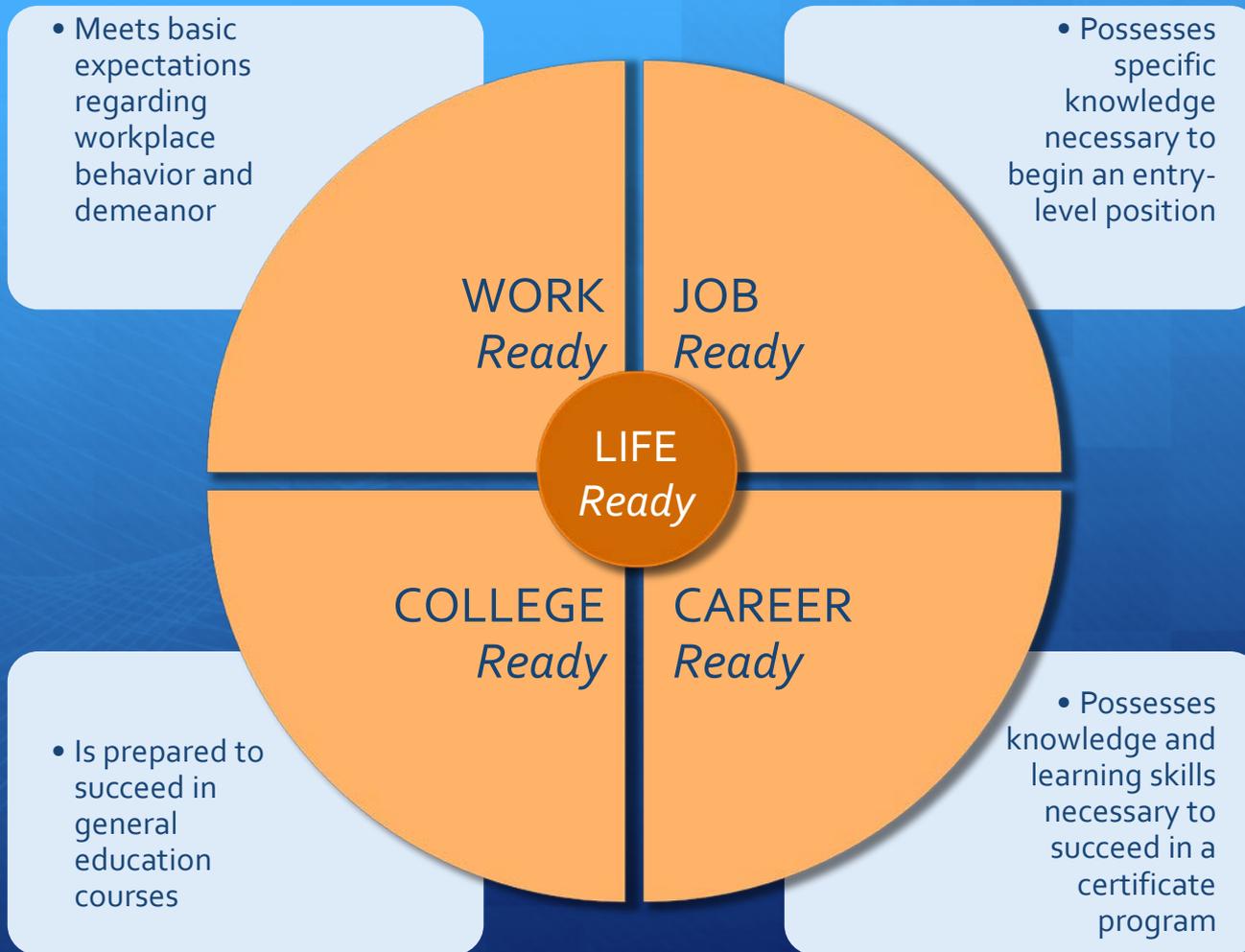
**STUDENTS NEED STRONG ACADEMIC
FOUNDATIONS AND LEARNING SKILLS NO
MATTER WHAT FUTURE THEY END UP
PURSUING**

A college and career ready student possesses the content knowledge, strategies, skills, and techniques necessary to be successful in a postsecondary setting.

Not every student needs exactly the same knowledge and skills to be college and career ready.

A student's college and career interests help identify the precise knowledge and skills the student needs.

MY DEFINITION OF COLLEGE AND CAREER READY



DIFFERENT *TYPES* OF READINESS

FOUR KEYS TO COLLEGE AND CAREER READINESS

think:

*Problem Formulation
Research
Interpretation
Communication
Precision & Accuracy*

Key
Cognitive
Strategies

know:

*Structure of Knowledge
Challenge Level
Value
Attribution
Effort*

Key
Content
Knowledge

act:

*Ownership of Learning
Learning Techniques*

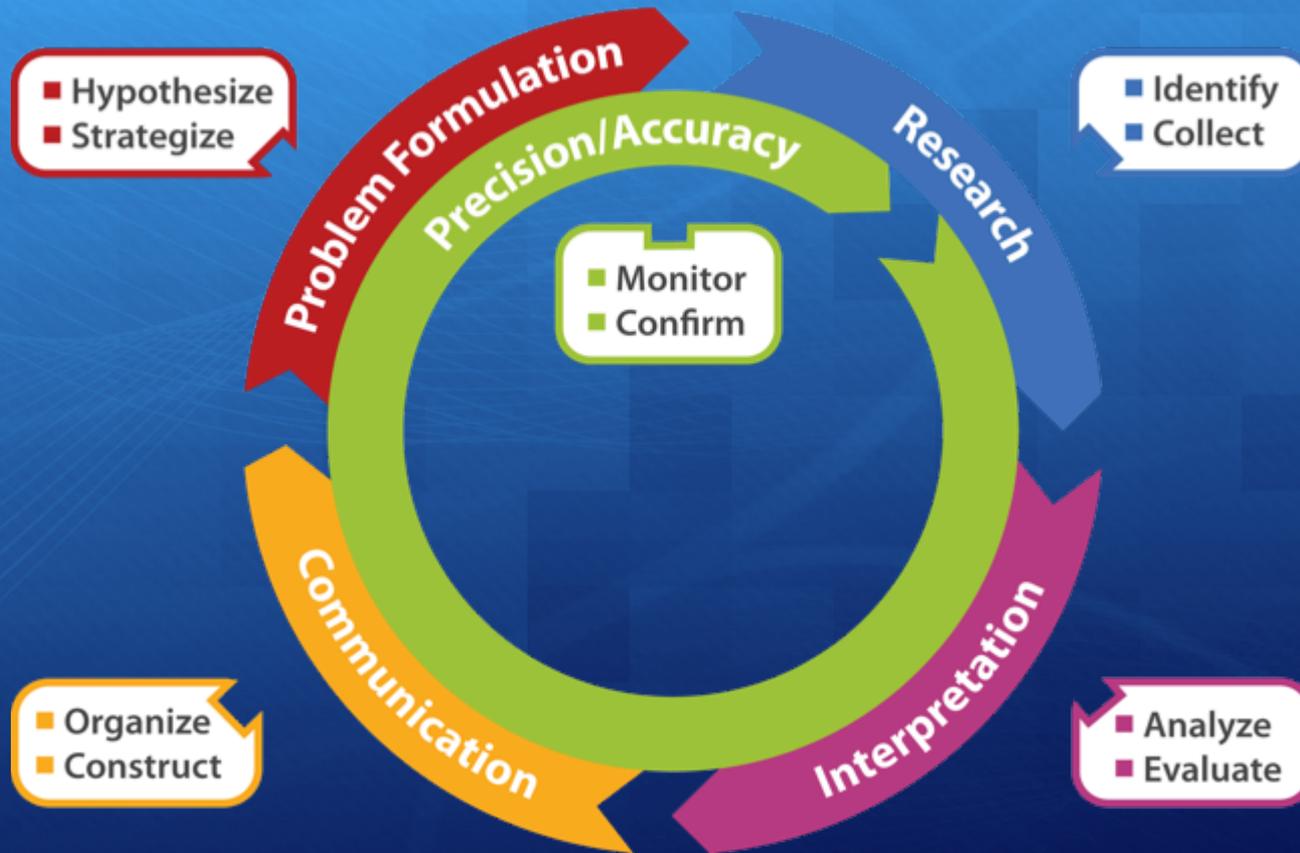
Key
Learning
Skills and
Techniques

go:

*Contextual
Procedural
Financial
Cultural
Personal*

Key
Transition
Knowledge
and Skills

THE KEY COGNITIVE STRATEGIES (THINK)

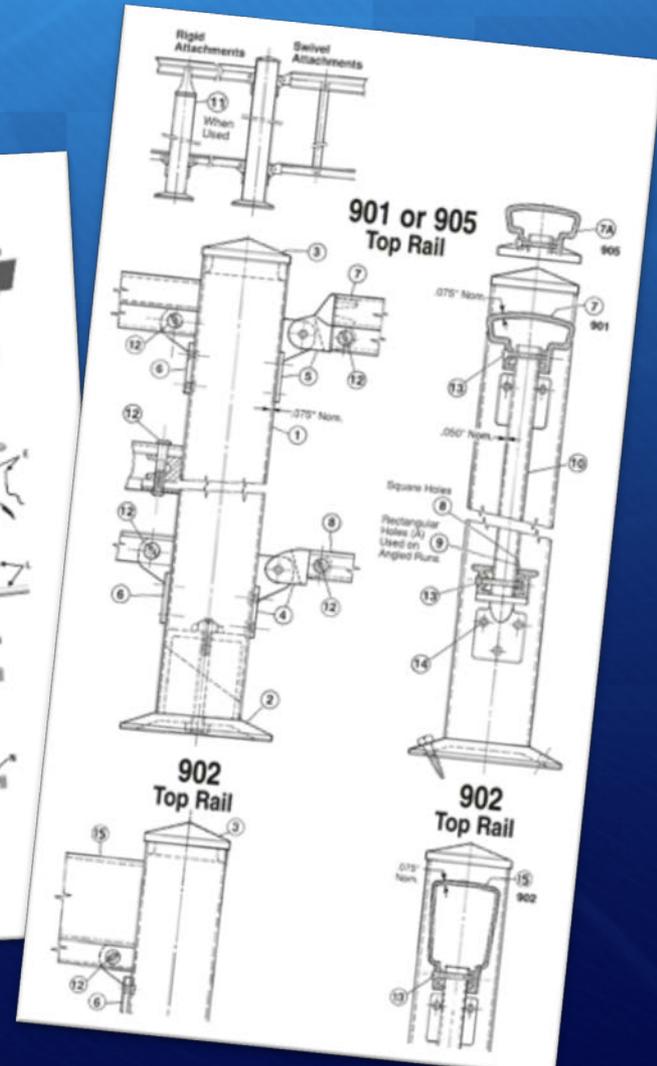
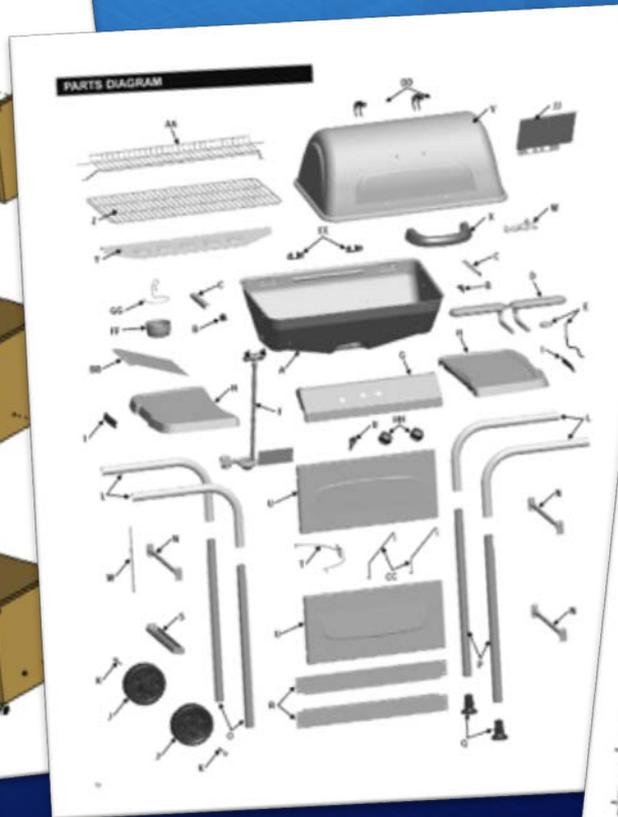
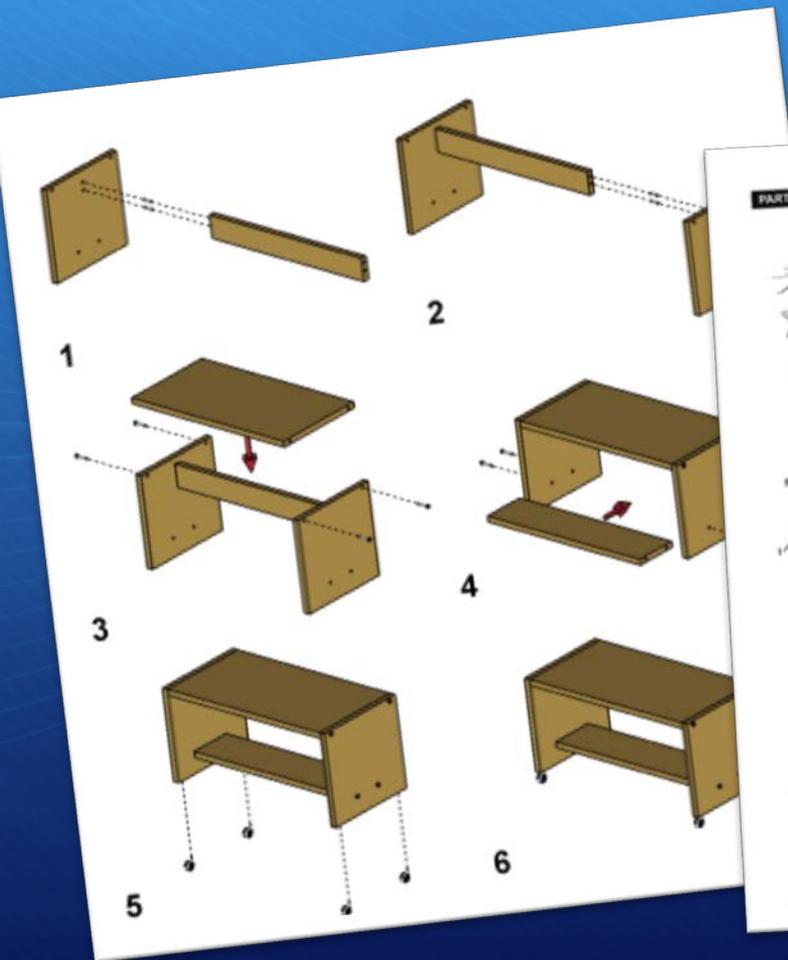


WHAT IS A STRATEGY?

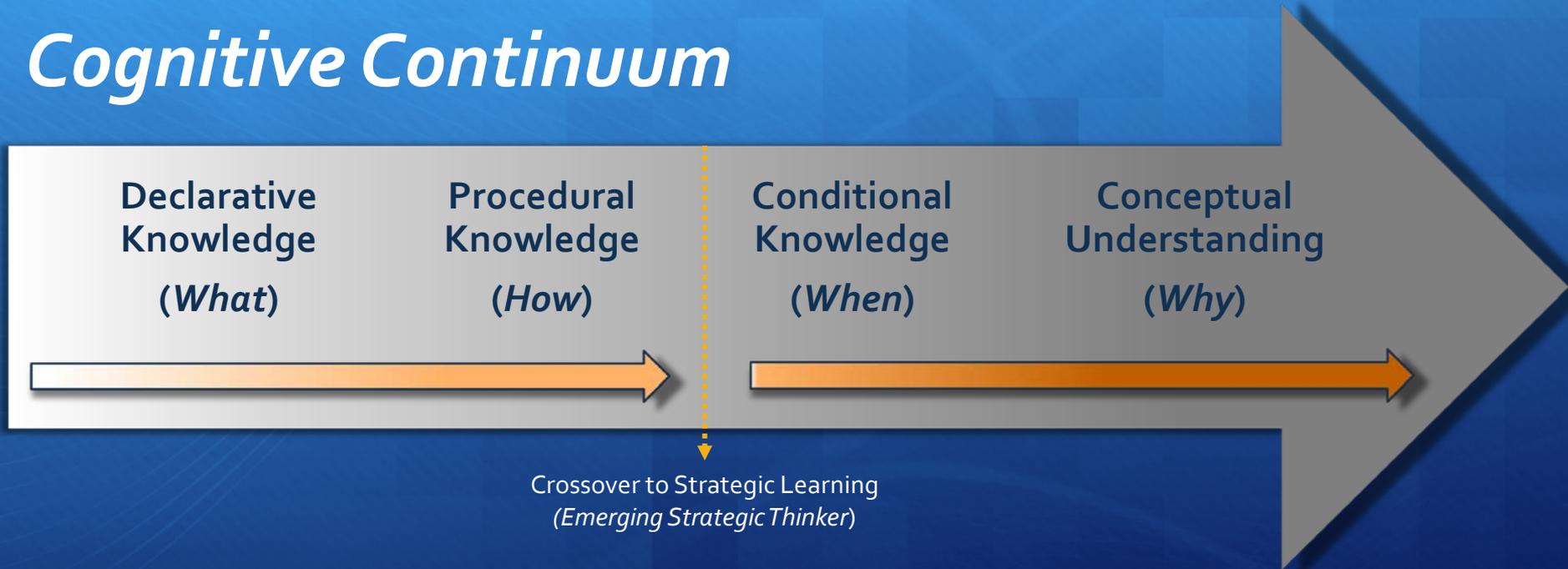
- + Systematic approach that uses the methods and ways of thinking of the academic disciplines to achieve the goal
- + Plan of action that chooses among alternative approaches and anticipates potential problems to solve a problem or complete a task

Adults' Use of Key Cognitive Strategies:

"Some Assembly Required"



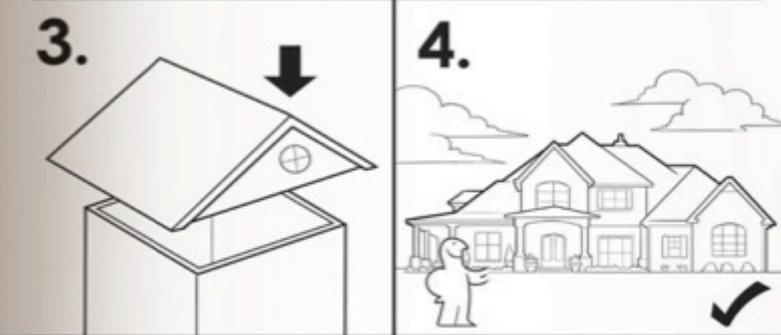
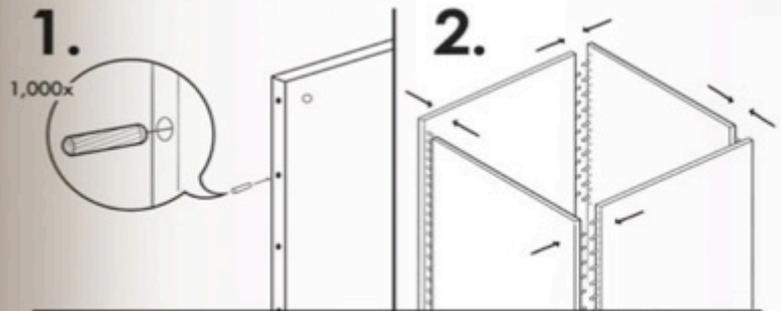
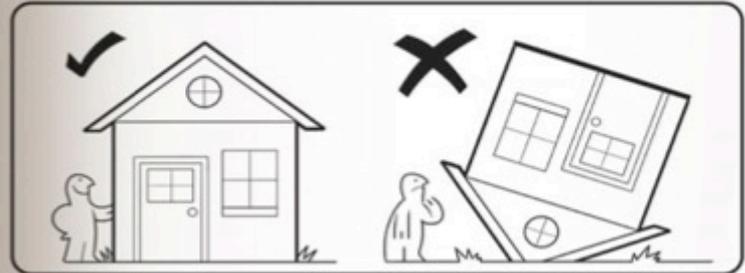
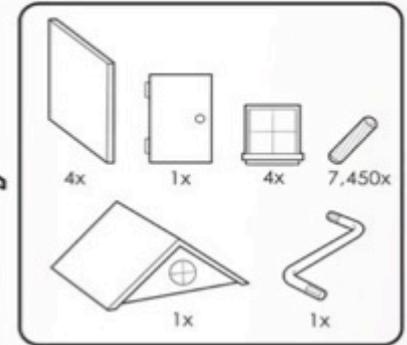
Cognitive Continuum



Developing cognitive strategies requires going beyond declarative and procedural knowledge

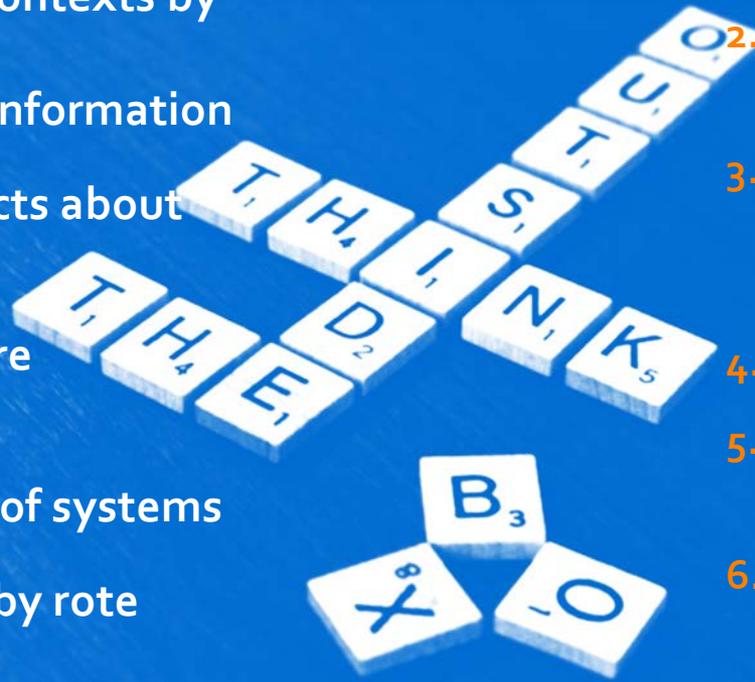
Procedural Learners
Follow Directions
Literally

HÖUSS



NOVICES:

1. tend to focus on discrete knowledge in isolation
2. reason in specific contexts by using recently-acquired information
3. know individual facts about topics
4. are slower and more deliberate
5. learn about pieces of systems
6. recall information by rote
7. apply knowledge in one context only



EXPERTS:

1. organize facts into “chunks” for better recall and application
2. connect new and prior knowledge
3. integrate pieces of knowledge into systems frameworks
4. are faster and more accurate
5. learn through example and analogy
6. create mental cues to facilitate recall
7. generalize knowledge to new settings and circumstances

Novice vs. Expert



- + Did you ever teach anyone to drive?
- + How is a novice driver different from an “expert” driver?
 - + What happens when a novice follows driving rules literally and doesn’t account for the context or situation?
 - + What happens when a novice does not respond automatically?
 - + How does a novice respond to a new or novel driving situation?
 - + What happens when a novice turns on the radio/iPod?

Moving Students from *Novice* to *Expert* Cognitive Strategists

- + Schools tend to **treat all learners as novices.**
 - + Emphasis is on declarative learning (repeating facts) and procedural learning (following directions), not on conceptual learning.
 - + Content may become more complex, but learning strategies stay the same.
- + As a result, **students do not develop deep expertise** as learners or as thinkers in any subject area.
- + The net result is that students arrive in college and the workplace with **little understanding of how experts learn or think.**

KEY CONTENT KNOWLEDGE (KNOW)

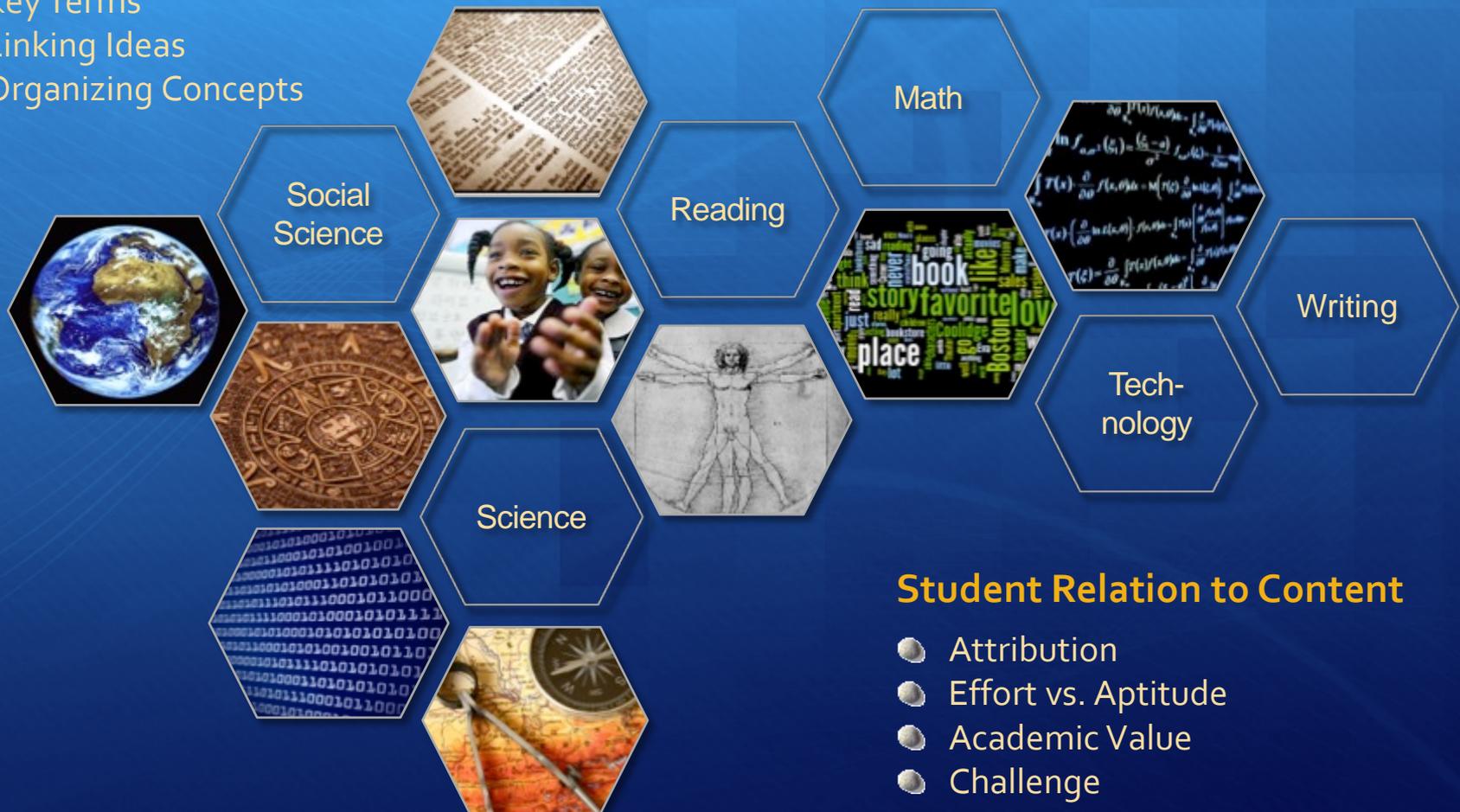
- + Structure of Knowledge
- + Student Relation to Content



KEY CONTENT KNOWLEDGE

Structure of Knowledge

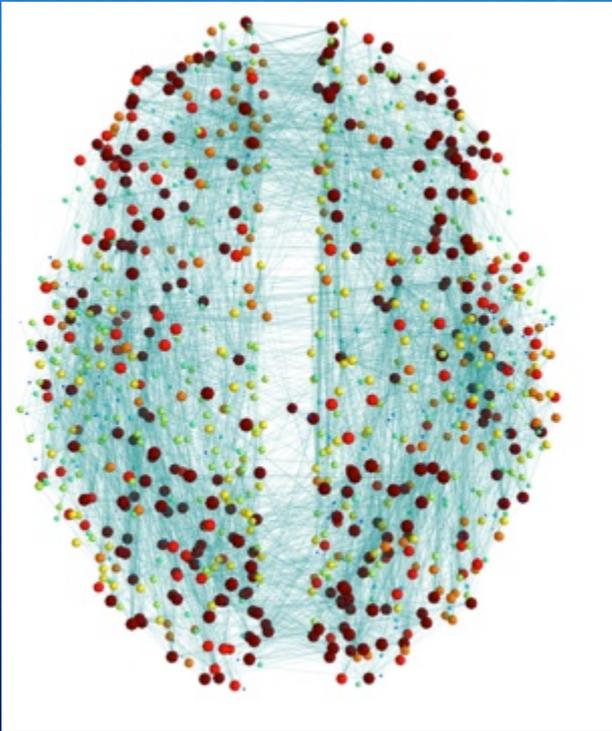
- Facts
- Key Terms
- Linking Ideas
- Organizing Concepts



Student Relation to Content

- Attribution
- Effort vs. Aptitude
- Academic Value
- Challenge

The brain retains this type of information to the degree to which it can:



- + generate connections or links among the pieces to make a structure
- + associate emotions, positive or negative, with the information
- + find the information meaningful, relevant, or useful
- + apply or use the information in a variety of authentic situations
- + receive timely feedback on how useful the information was to achieve a specific purpose or general goal.

Option 1: FIXED Mindset

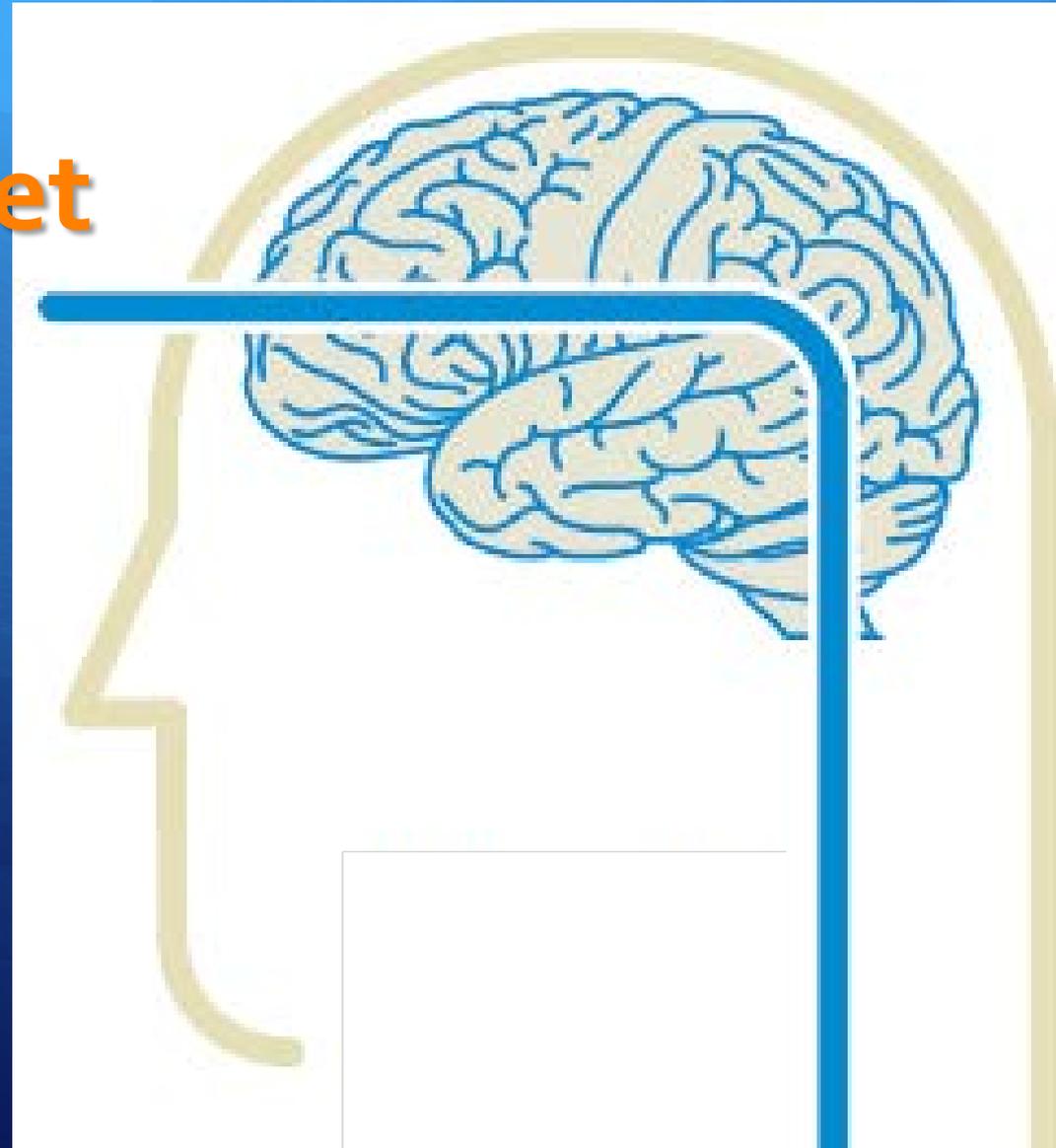
“Intelligence is static.”

- + Avoid challenges
- + Give up easily
- + See effort as fruitless
- + Ignore feedback
- + Threatened by others' success

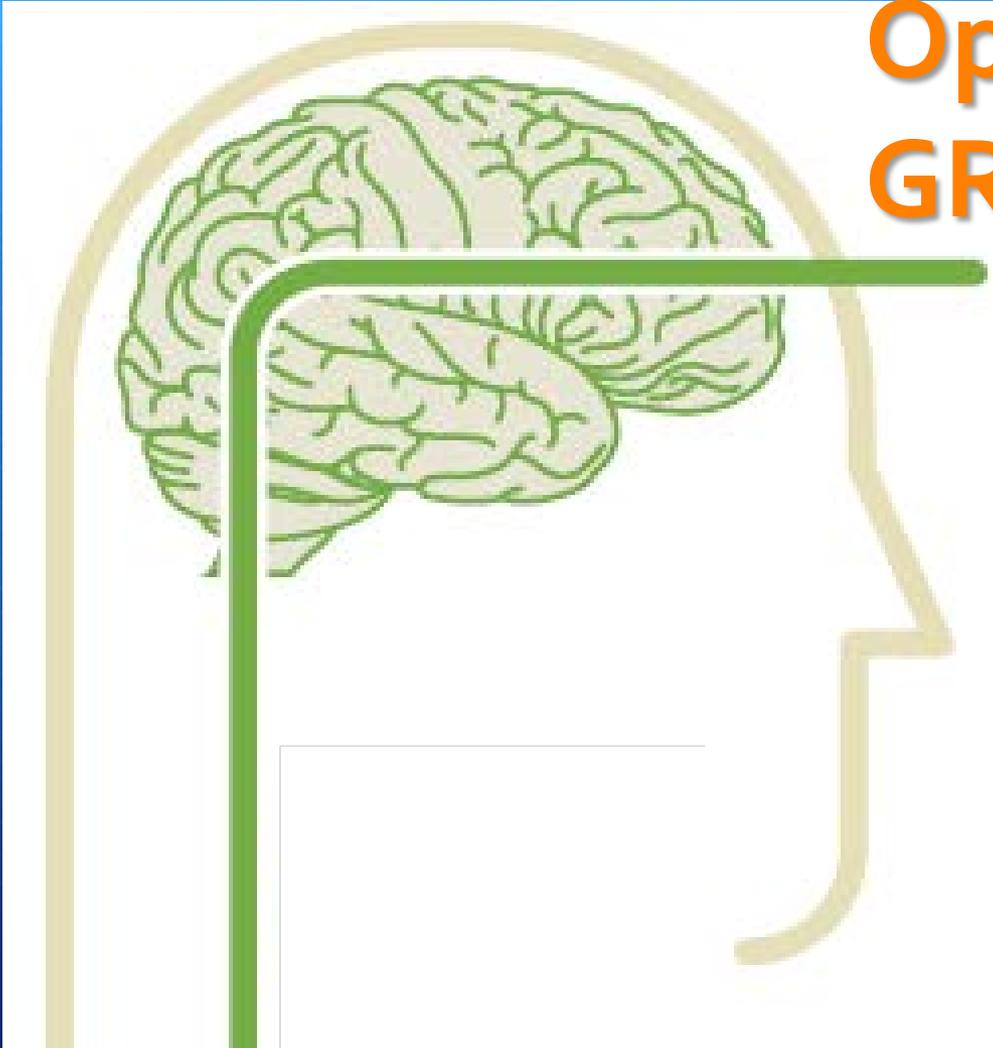
Learners with fixed mindsets...

- + plateau early
- + achieve less than full potential

Confirms a **deterministic** worldview



Option 2: GROWTH Mindset



“Intelligence can be developed.”

- + Embrace challenges
- + Persist through obstacles
- + See effort as necessary
- + Learn from feedback
- + Inspired by others' success

Learners with growth mindsets...

- + achieve at higher levels
- + persist
- + cope with challenges better

Reinforces **greater sense of free will**

“You did really well on that math test. You must be really smart.”

“You did really well on that math test. You must have worked really hard.”

Think about something you became good at through effort:

- What did you have to do?
- What challenges did you have to overcome?

KEY LEARNING SKILLS & TECHNIQUES (ACT)

- + Ownership of Learning
- + Learning Skills



Ownership of Learning

Know Yourself

- ***Be self-aware.*** Find out your interests, passions, skills, and ambitions.

Set Goals

- ***Know what you need to achieve*** based on self-awareness.

Be Motivated

- ***Have the mindset*** to achieve your goals.

Persist

- ***Don't give up,*** especially when something does not come as easily to you.

Monitor Performance

- ***Know how well you are really doing.*** Gauge your true skill level.

Ask for Help

- ***Know when you are stuck, then get help.*** Don't view this as a weakness.

Show Self-Efficacy

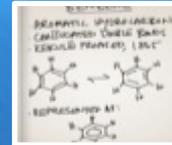
- ***Learn how to control the things you can control.*** Then, control them.

LEARNING SKILLS



Manage Time

Take Notes



Study for Tests

Memorize



Read
Strategically



Learn
Collaboratively



Use Technology



KEY TRANSITION KNOWLEDGE & SKILLS (GO)

- + Contextual: *What are my options?*
 - + Procedural: *How do I apply and enroll?*
 - + Financial: *How do I afford it?*
 - + Cultural: *What are the behavioral norms of college?*
 - + Personal: *How do I advocate for myself? What is my identity?*
- 

KEY TRANSITION KNOWLEDGE & SKILLS



Contextual

Postsecondary
Aspiration
Postsecondary Norms
& Culture



Contextual

Career Options
Career Requirements
Career Readiness



Procedural

Postsecondary
Eligibility
Admissions Procedures
Program Selection



Financial

Tuition Awareness
Financial Aid
Awareness



Cultural

Postsecondary norms
Diversity of people
and opinions



Personal

Role Transition
Resource Acquisition
Institutional Advocacy

FIRST-GENERATION COLLEGE STUDENT CHARACTERISTICS

Students who would be first-in-family to go beyond secondary education have many of the following characteristics:

- + Lack key contextual knowledge about tertiary education opportunities, costs, purposes, prerequisite skills, organizational/cultural values and norms.
- + May not view post-secondary education as valuable or realistic.
- + Tend not to use available support resources.
- + May suffer from “imposter syndrome” and be more likely to give up when faced with performance problems.



What *YOU Can* Do

to make more students college and career ready



THINK

- + Develop curriculum that develops cognitive strategies:
 - + One-fourth of instructional time on declarative learning
 - + Another fourth on procedural learning
 - + A fourth on conditional learning
 - + A fourth on conceptual learning
- + Give students tasks and activities that require thought
 - + Analysis, interpretation, evaluation, argumentation, reasoning
- + Value strategic thinking
 - + Use assessments that measure cognitive strategy development
 - + Hold schools accountable for developing cognitive strategies



KNOW

- + Align curriculum to college and career readiness standards
- + Encourage all students to take challenging courses and aspire to challenging futures
- + Have students examine their academic mindset and encourage effort-based success attribution
- + Help students make more connections between what they are learning and their interests and aspirations



ACT

- + Have all students set goals: short, medium, long term
- + Have all students learn to study productively with others
- + Expect students to record assignments and organize time to complete them
- + Develop specific learning skills, such as memorization, note-taking, technology as a learning tool
- + Help students learn how to seek help when needed and how to advocate for themselves



GO

- + Connect lessons to postsecondary futures and careers
 - + Let students make connections between lessons and college/careers
- + Develop communication channels between K-12 and postsecondary faculty to compare expectations and share perceptions and perspectives
- + Share information on local college entrance requirements and financial aid opportunities with all students regularly beginning in late middle school



BUSINESS COMMUNITY

- + Develop specific job-readiness criteria for key career areas and occupations
- + Work with schools on programs such as career academies, early college high schools and concurrent enrollment, internships, on-site visitations
- + Share expertise with schools through visiting expert programs; summer internships for teachers; lessons, materials and curriculum
- + Help reward excellence in education at all levels and in all communities

PARENTS AND COMMUNITY

- + Help parents get information early on the college application process and financial aid
 - + Starting in elementary school, and increasing in middle and high school
 - + Begin with general information, get more specific each year
 - + Focus on local institutions more than remote ones
- + Encourage every student to complete a college application in 10th grade as practice
- + Make sure every student spends time on a college campus from elementary school on

PARENTS AND COMMUNITY

- + Help students explore career interests and set career goals early
 - + Many more opportunities for students to learn about career possibilities
 - + Career investigation assignments, internships, job shadows
- + Have students use technology in productive, sophisticated ways
 - + More than just finger-typing on a smartphone
 - + Get students online and connected to services that help them manage the college and career readiness process (Naviance, BigFuture)



PARENTS AND COMMUNITY

- + View yourselves as active partners in education
 - + Visit your child's school and meet with teachers and advisors to discuss annual learning plans, current progress toward that plan, and anticipated future goals
 - + Respect and advocate for teachers and staff
 - + Instill good study habits and a strong work ethic at home
 - + Attend college and career events and informational meetings
 - + Maintain high expectations for students in the community and hold yourselves, teachers, and students accountable for meeting those high expectations

*Don't limit your challenges -
challenge your limits*



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