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Executive Functions: Foundational Skills for Educator and Student

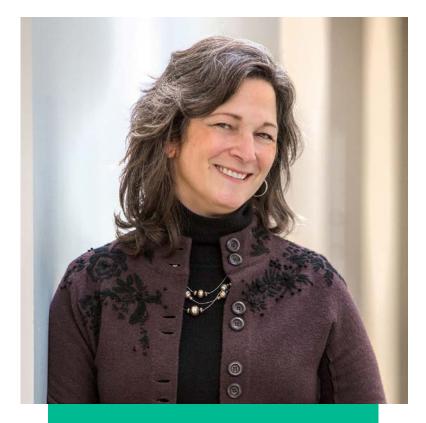
HELIX: High Expectations for Students with Low Incidence Disabilities November 14, 2022





Presenter

Leslie Thatcher Director, College Success Leslie.Thatcher@perkin s.org



Today's Goals

- Identify key elements of Executive Functions and their impacts on learning and independence.
- Develop the skills to create lesson plans to strengthen students' executive functioning skills in learning ECC skills, in the general education classroom and out.
- Develop engagement techniques to improve student engagement and motivation to learn and integrate stronger executive function skills into daily activities.



Background





Concerns:

- Lack of college completion
- Discovered significant gaps in skill development including executive functioning, technology and accurate sense of skills
- TVI without training in educational theory, decisions often not grounded with long term view
- Low information for parents impacts what they ask for in K-12 system leading to long term deficits impacting education and employment

National Strategy:

- Changing conversations
- Integrating mainstream educational research
- Tools Created: College Readiness Resource Center, College Readiness Checklist, Technology Competencies for College Readiness

Compass/Compass Plus

- Direct Service
- Coaching model
- National enrollment
- Students Grade 9-12, educators and family
- Post Secondary individuals looking for guidance



Executive Functions...

Starting Early is KEY!



Connecting long term to the here and now for parents

Long term goals and aspirations

- Independence
- Happiness
- Work? Competitive? Supported?
- Higher Education
- Training?

Here and now

- Get food
- Keep child safe
- Worry about future
- Pay bills (work)
- Manage health related issues?
- Relationships/Community/Family



Living in one world; dreaming of another...

I want to be an....

- World of Work
- Higher Education

Myth of what "college" or work is

Hopes and dreams, socially expected goals/outcomes

Assumed skills





VS.



- For schools
- Parents and teachers take responsibility to identify and create accommodations
- Accommodations provided to support student success
- IEPs drive this process

- For college and the workplace
- Must self identify at the Disability Resources Office
- You will need to advocate for accomodations.
- No federal funding
- No IEPs in college settings



Needed a Connector

Moving locus of control into the child Connecting assessments with goals/outcomes

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Ponder...

Stats for students with VI

- An estimated 71% of students with a visual impairment enter college within eight years of completing high school.
- The post-secondary school completion rate for this group of students is 42.8%
- Only 14.9% of blind individuals end up graduating with a BA or higher

Disability Statistics overall

- According to Department of Education, only 54% of all students who start college receive a degree in six years (Mitchell 2019)
- Only 28% of students who start college with diagnosed disabilities complete their degree (Mitchell 2019)
- 75% of students who qualify for accommodations never take advantages of the services offered to them (Mitchell 2019)



Ponder...

Technology Demands....

- The list of essential tech skills that a blind student needs to acquire prior to high school graduation has jumped from 14 (2004) to 35 (Kelly, Kapperman 2018: 387)
- Average college reading silent rate is 350wpm, where low vision students and braille readers tend to read 1.5-2 times slower (Brauner 2020)
- Recommended typing rate for competitive employment and college level work: 60 words per minute on a QWERTY keyboard

Academic Discipline

 A study of 6,590 general education students found that academic discipline was positively related to retention in college, and that relationship was mediated by their first year GPA (ACT Tessera,<u>https://pages2.act.org/rs/035-EZR-959/images/Tessera_Theory_of_Action.pdf?aliId=6250013</u> <u>4</u>)



To meet demands of post secondary life, your student will need....

- Self-determination
- Problem solving
- Planning
- Self Awareness
- Initiative





What is Executive Functioning?

1. Have a goal.

2. Organize your experiences and emotions to identify a goal

- 3. Remember and RETRIEVE that goal and ACT on it
- 4. Recall who might help you meet that goal, then find

a time to set that goal

R R L L H A N N

These are all about EXECUTIVE FUNCTIONS...and how there can be so

many places where this falls apart.



What is EF?

Skills for anticipating, planning ahead, breaking down things into smaller parts, emotional regulation, task initiation, and more

- Essential for problem solving and independence
- And...for writing, managing increasingly complex assignments

Often gets missed and underdeveloped due to

- loss of incidental learning
- Accomodations that reduce opportunities for learning by mistake



Task Initiation

Impulse Control

Planning/Prioritization

Emotional Control/Regulation

Working Memory

Metacognition/Self Monitoring

Flexible Thinking

Attention/Focus

Time management

Perseverance





Executive Functions can look like...

Booksmart

Elementary School (age 4-11)

- Learning to pay attention
- Learning to control impulses and behavior
- Following simple directions and rules
- Recognizing patterns (learning to read then reading to learn)

Middle School (age 11-14)

- Learning to think and plan ahead by imagining a future point in time
- Planning out work (multi step, over time)
- Problem solving when things don't go as planned
- Following daily household and classroom routines (independently!)

High School (age 14-18 or 22)

- Learning to think flexibly and solve problems in new ways
- Adapting to shifting expectations and rules depending on the context
- Using social skills and perspective-taking to collaborate with peers in activities



development of these EF skills?

- Few opportunities to practice and learn, and generalize
 - Paraprofessionals
 - Reduced academic expectations
 - Lack of tech skills impacting access like typically sighted peers
 - Impacts cognitive, skill development
- Secondary diagnoses: autism, mental health challenges, ADHD
- Environmental challenges
- Trauma
- Lack of holistic support: integrating the whole child experience into planning and goals
- Consequences are cumulative



Impacts

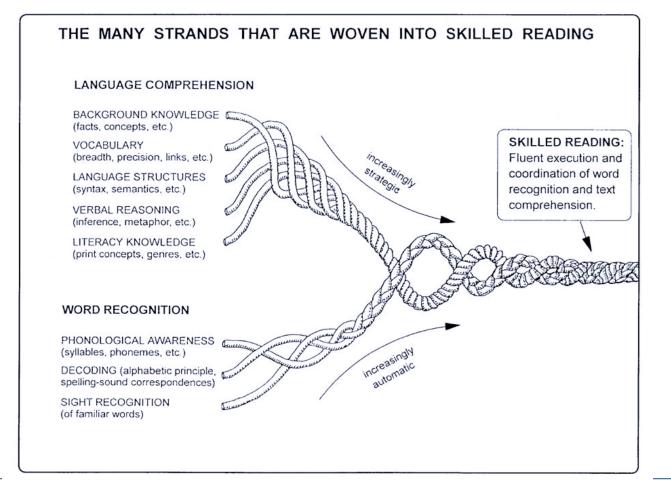
- Writing: organizing ideas, creating hierarchy, recognizing hierarchy of ideas, inferential thinking
- Underdeveloped cognitive skills
 - Reading/deriving meaning
 - Reduced curricular challenges
 - Limited problem solving skills in and out of the classroom
- Reduced challenge in courses may impact vocabulary acquisition to conceptualize in more complex ways
- Critical reading
- Particularly impactful for functional academic and academic students



A note about reading....

...and writing.







Example of a Research Paper Outline

Student Name Ms. Pitt English 10/Mod February ____, 2013 Creative Title of Research Paper Introduction A. Opening Statement (This is the "hook" for your reader) B. Thesis Statement II. Body A. Supporting evidence topic В. Supporting evidence topic C. Supporting evidence topic D. Supporting evidence topic III. Conclusion A. Recap thesis

B. Summarize argument

Joe Student Ms. Pitt Engilsh 10/Mod 6/7 February 4, 2013

The Benefits of Running

Writing....

It's all about EF...and how effectively a student has taken in, and stored information..



Tools to Use

Begin to move families from low information to more informed advocacy and decision making:

- High School Readiness Checklist
- College Readiness Checklist
- Technology Competencies Checklist
- Executive Functioning Checklist from Smart but Scattered, by Peg Dawson and Richard Guare





Executive Functioning

Identify key elements of Executive Functions and impacts on learning and independence

Executive Functioning

Necessities

- 1. Have a goal.
- 2. Organize your experiences and emotions to identify a goal
- 3. Be able to remember and RETRIEVE that goal
- 4. Recall who might help you meet that goal, then find a time to set that goal

These are all about EXECUTIVE FUNCTIONS...and how there can be so many places where this falls apart.



Definitions

Mary Kennedy:

- 1. Attention
- 2. Visuospatial
- 3. Alertness
- 4. Memory
- 5. Autonomic/Emotional
- 6. Sensory/perceptual
- 7. Language
- 8. Motor



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Attention

- Focusing on a specified activity, behavior or task
- Levels from basic to complex
- Focused, sustained, alternating and divided



Visuospatial

- Understanding and being able to mentally manipulate visual information
- Understanding spatial relationships
- Discriminating items or features or recognizing objects



Alertness & Memory

Alertness:

• Maintaining arousal

Memory:

• Gathering information so that it can be stored and then recalled at a later time



Autonomic/Emotional & Sensory/Perceptual

Autonomic/Emotional

• Internal mood or feelings, including automatic responses

Sensory/Perceptual

- General sensory input such
 - The sensation of touch or proprioception
 - Specific sensory input such as vision and hearing



Language

Expressive language includes:

- o Thinking of words
- o Sequencing the sounds
- Organizing them into grammatically correct sentences
- o Speaking rates
- o Intonation

Receptive language includes:

- Comprehending speech and decoding meaning (explicit and implicit) based on factors such as emphasis, facial or body expressions and intonation.
- Being able to read and write fluently.



Planning and executing motor movements

• Involving limbs, hands, face or tongue

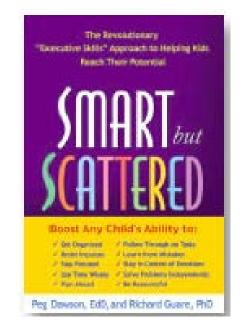


Definitions

Richard Guare and Peg Dawson: Smart but Scattered

"Executive skills refer to the brain-based, cognitive processes that help us to...

regulate our behavior make decisions and set and achieve goals."





Definitions

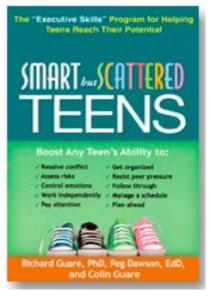


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RICHARD GUARE

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Richard Guare and Peg Dawson: Smart but Scattered





Definitions of Executive Functions

Guare and Dawson: Smart but Scattered

- 1. Emotional Control
- 2. Flexibility
- 3. Goal-directed persistence
- 4. Metacognition
- 5. Organization
- 6. Planning/Prioritization

- 7. Response Inhibition
- 8. Stress Tolerance
- 9. Sustained Attention
- 10.Task Initiation
- 11. Time Management
- 12. Working Memory



Definitions of Executive Functions

Flexibility

The ability to revise plans in the face of obstacles, setbacks, new information or mistakes.

Relates to an adaptability to changing conditions.

- o Examples:
- A young child can adjust to a change in plans without major distress.
- A high school student can accept an alternative such as a different job when the first choice is not available.



Goal Directed Persistence

- The capacity to have a goal, follow through to the completion of the goal
- Not be put off by or distracted by competing interests
 - Examples:
 - A first grader can complete a job in order to get to recess
 - A teenager can earn and save money over time to buy something of importance



Metacognition

- The ability to stand back and take a birds-eye view of oneself in a situation.
- Ability to observe how you problem solve.
- Includes self-monitoring and self-evaluative skills (e.g., asking yourself, "How am I doing? or How did I do?").
- Examples:

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- A young child can change behavior is response to feedback from an adult.
- A teenager can monitor and critique her performance and improve it by observing others who are more skilled.

Organization

- The ability to create and maintain systems to keep track of information or materials
- Examples:
 - A young child can, with a reminder, put toys in a designated place
 - An adolescent can organize and locate sports equipment



Planning/Prioritization

- The ability to create a roadmap to reach a goal or to complete a task
- Involves being able to make decisions about what's important to focus on and what's not important
- Examples:
 - A young child, with coaching, can think of options to settle a peer conflict
 - A teenager can formulate a plan to get a job



Response Inhibition

- The capacity to think before you act
- Allows us the time to evaluate a situation and how our behavior might impact it
- Examples:
 - In the young child, waiting for a short period without being disruptive is an example of response inhibition
 - In the adolescent it would be demonstrated by accepting a referee's call without an argument



Stress Tolerance

- The ability to thrive in stressful situations and to cope with uncertainty, change, and performance demands
- Generally reserve our discussion of this skill to adults, since it seems more relevant with this population
- Helps people understand the kind of work environment they do best in



Sustained Attention

- The capacity to maintain attention to a situation or task in spite of distractibility, fatigue, or boredom
- Examples:
 - Completing a 5-minute chore with occasional supervision is an example of sustained attention in the younger child
 - The teenager is able to attend to homework, with short breaks, for one to two hours.



Task Initiation

- The ability to begin projects without undue procrastination, in an efficient or timely fashion.
- Examples:
 - A young child is able to start a chore or assignment right after instructions are given
 - A high school student does not wait until the last minute to begin a project



Time Management

- The capacity to estimate how much time one has, how to allocate it, and how to stay within time limits and deadlines
- Involves a sense that time is important
- Examples:
 - A young child can complete a short job within a time limit set by an adult
 - A high school student can establish a schedule to meet task deadlines



Working Memory

- The ability to hold information in memory while performing complex tasks
- Incorporates the ability to draw on past learning or experience to apply to the situation at hand or to project into the future
- Examples:
 - A young child, for example can hold in mind and follow 1-2 step directions
 - A middle school child can remember the expectations of multiple teachers



Emotional Control

The ability to manage emotions in order to achieve goals, complete tasks, or control and direct behavior.

Examples:

- A young child with this skill is able to recover from a disappointment in a short time.
- A teenager is able to manage the anxiety of a game or test and still perform.



Executive Functioning Questionnaire

Can help educate a student about these skills and their role in developing them...



Executive Skill Rating Scale and Scoring

cale and ocorning		
	1-3 Planning/prioritization	18
Rating Scale	4-6 Flexibility	15
	7-9 Goal Directed Persistence	16
Strongly disagree	10-12 Organization	15
Disagree 2	13-15 Working Memory	12
	16-18 Time Mgmt	12
Tend to disagree	19-21 Self-Regulation of Affect	12
3	22-24 Task Initiation	9
Neutral 4	25-27 Sustained Attention	10
Tend to agree	28-30 Metacognition	10
5	31-33 Response Inhibition	12
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Item #: Executive Skill

Scoring Summary

Executive Skills Questionnaire

Planning / Prioritization

- When I plan out my day, I identify priorities and stick to them.
- When I have a lot to do, I can easily focus on the most important things.
- When I have a big project to do, I make a list to help structure the task.
- Your Total score:

Organization

- I consider myself an organized person.
- My work area is neat and organized.
- I have methods for managing my written and electronic communication.
- Your Total Score:



Executive Skills Questionnaire

Task Initiation

- No matter what the task, I believe in getting started as soon as possible
- Others view me as someone who seldom procrastinates.
- I seldom leave tasks to the last minute.
- Your total score:

Sustained Attention

- I find it easy to stay focused on my work.
- Once I start an assignment, I work diligently until its completed.
- Even when I am interrupted, I find it easy to get back and complete the job at hand.
- Your total score:





Readiness to change behaviors

Key strategies to engage more effectively to support student growth **Transtheoretical Theory of Change**

Mary Kennedy, Coaching College Students with EF Problems James Prochaska, University of Rhode Island and Carlo DiClemente

- Precontemplation
- Contemplation
- Preparation
- Action
- Maintenance



Precontemplation

- This is the earliest stage, where the person is unaware of the problem.
- He or she resists, rebels, resigns, or rationalizes, and does not acknowledge that a problem exists.
- Example:
 - The student denies having memory and organization problems that resulted in missing assignments and poor test grades.



Contemplation

- The person acknowledges that there is a problem, but does not necessarily see the cause of or the solution to the problem, although he or she investigates potential solutions.
- The person may ruminate, weighting pluses and minuses over and over again.
- Example:
 - The student realizes that his or her poor organization and memory problems have resulted in missing assignments and poor test grades.



Preparation

- The person is ready for change.
- He or she may have tried but failed in the past to change and needs to make plans for and commitment to change.
- Example:
 - The student creates a study plan and selects study strategies.
 The plan may be elaborate or simple.



Action

- The person puts the plan into actions, which involves changing one's behavior.
- Note that putting plans into action does not always equate with reaching a goal.
- Example:
 - The student implements the study plan and study strategies.
 This can include modifying the action plan to fit the situation.



Maintenance

- The person maintains the desired behavior using the plan
- Relapse and recycling through the stages again is possible.
- Example:
 - The students continues to implement the plan. He or she may discontinue its use if the routine was not well established or if something interrupts the routine and the student recycles to a prior stage to get started again.





Executive Functioning

Develop the skills to create tools to strengthen EF skills Action Items: Start Early... But, better late than never

 Executive Functioning Skills Questionnaire Teaches about what EF is Helps prompt more positive goal setting and conversations Helps parents understand 	 Coaching Model Moves locus of control onto the student
 Forms, Graphic Organizers Creates levels of scaffolded support as you coach Plan of Attack Introduction of "To Do" List, Calendar apps, Reminders 	 College Readiness Checklist High School Readiness Checklist Technology Competencies Checklist



Perkins College Readiness Checklist

Link: https://www.perkins.org/resource/coll ege-success-readiness-checklist/



HIGH SCHOOL CHECKLIST FOR COLLEGE **READINESS: BY SKILL**

> Created by College Success @ Perkins © 2020 Perkins School for the Blind. All rights reserved.

Perkins College Readiness Checklist

Created by College Success @ Perkins

Some skills that lead to success in work and higher education

- Sets and follow a daily schedule of activities
- Completes multi step assignments within the times assigned
- Effectively manages written and electronic communications.
- Recalls facts, dates and details via notes for critical assignments.
- Recognizes when additional support is needed on an assignment

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• Adjust to changes in plans and priorities appropriately

Key: Independendence



Expanded Core High School Readiness

The Expanded Core High School Readiness Checklist can be used for all students Grade PreK-8.

- Preschool & kindergarten
- First through fourth grades
- Fifth through eighth grades.
- *There is an alternative checklist for students with additional disabilities.

The content published in the Expanded Core Curriculum High School Readiness Checklist skills are based on and informed by the work, study, and evidence-based practices created or noted by:

- ECC Essentials: Teaching the expanded core curriculum to students with visual impairments.
- EVALS
- Assessment & Ongoing Evaluation Independent Living: A curriculum with adaptations for students with visual Impairments.

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• All Kids Can Read: Literacy Skills Checklist



Technology Competencies

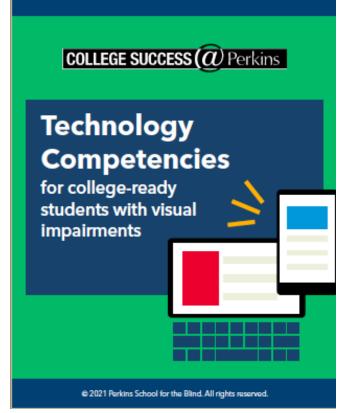
Why?

Technology is taught thru about 4th or 5th grade

Then tech is used to learn...

Yes, And...approach

Link: https://www.perkins.org/resource/technology-competencies-forcollege-ready-students-with-visual-impairments/





It's complicated.

Integrating EF, academic skills,

AND

Technology!



Academic and executive functioning

- Uses multiple devices at once to perform academic tasks, such as taking notes while reading.
- Demonstrates ability to use multiple devices to maximize efficiency across task, time and setting.
- Selects and uses strategies for organizing print and electronic information.
- Creates task lists and tracks task completion by using preferred device.

- Uses accessible calendars, reminders, alarms and timers to manage time and tasks.
- Accesses reading materials in preferred formats on multiple devices.
- Uses the Internet to locate, retrieve and organize information while recording sources.

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• Optimizes research methods using online, reliable, peer-reviewed resources.



Forms

- Plan of Attack
- Graphic Organizers Made Accessible
 - Daily and Weekly Planners
 - Paper Organization
 - Long Term Planning



Plan of attack: what to do?

- What led to this moment of panic?
- What are some steps that can help to create a plan?
- What can you use to keep yourself organized?



• Brain Dump then prioritize

Executive functioning gets better over time!

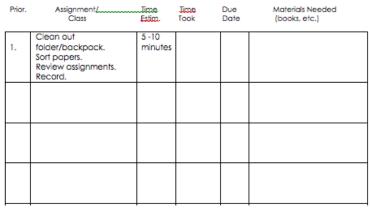


Plan of Attack

Long Range Assignments



Plan of Attack





Plan of Attack

GoogleForms and GoogleKeep

✔ Daily weekly planner 및	Long term project planning: ste	Five paragraph essay
Marking period goals:	Potential topics:	Hook Statement:
Goal 1	sample 1?	Background information:
Goal 2 Goal 3	sample 2?	Thesis statement:
Monday		Body paragraph one:
Tuesday	What I like about this:	Topic sentence:
Check next day schedule	Sample 1	Claim:
Workings	Sample 2	Evidence:
Wednesday	What I don't like:	Concluding statement:
Homework		Body paragraph two
	+ List item	Topic sentence:
(S Sep 18, 7:30 PM College		Claim:
Planner TO DO 🤳 🏀 +3	😤 🎱	Evidence:
ê 2+ © • :	ê 24 (?) 🖬 🗊 :	ê 24 (?) 🖬 🖬 🗧 🖯

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Paper Example

- Find Rubric
- Research
- Write
- Edit
- Submit
- Check Grade
- Review feedback





Coaching Model

Mary Kennedy: Coaching College Students with EF Problems

LISTEN UP!!!!

This is FUN!!! (Really!!!)

This is at the forefront of research... This is validated teaching and engaging strategy.



But, the scaffolding for these skills has been missed for our students.



Coaching Model

Mary Kennedy: Coaching College Students with EF Problems

- Enables students to become experts in how they think, learn, stay organized and socialize in situations and during activities that are bound to change (Kennedy 2017: 63)
- Motivational Interviewing Model
 - Express Empathy
 - Develop discrepancy
 - Roll with Resistance
 - Support self-efficacy
 - Uses: Open Questions, Affirmations, Reflections and Summaries



Starting Early....



Benefits of starting early....

- Helps empower parents' advocacy into primary, secondary education
- Provides chance to develop plan to gain skills needed to increase options in post secondary education and work (may need more time!)
- Allows time to identify secondary diagnoses that may impact ability to engage EF skill development (working memory, processing skills, etc.)
- May create opportunities for building a larger team to address gaps not in TVI's scope of training (critical reading, writing, social pragmatics, etc.) and to address secondary disabilities
- Integrate secondary diagnoses as family and educators creating solutions (ADHD, Autism, Reading Disability, etc.)
- Grade inflation is real-and when the get to college...noone is going to teach these skills



Things families can do now...

Thinking out loud

- Shopping lists (categories)
- Calendars (time management)
- Planning meals (multi step, sorting for shopping, using leftovers!)
- Exploring something of interest to parent (perspective taking)
- Story Telling (sequencing, big ideas vs details, working memory)

Tasks at home that require sorting, sequencing

- Putting away laundry (sorting, multi step)
- Reading together
- Picking up room/organizational strategies
- Preparing to leave the house
- Cooking, Singing songs with repeating chorus



Preparing for a handoff....

Remember connecting long term hopes and dreams with a plan for blindness and EF skill development NOW and the ability to recognize when a student's difficulties in acquiring skill may NOT have to do with their visual impairment.

Informed advocacy for parents in the K-12 system:

- Literacy (fluency, efficiency)
- Technology
- Independence



Resources

- College Readiness Resource Center: https://www.perkins.org/college-success/resource-center/
- College Readiness Checklist: https://www.perkins.org/resource/college-success-readiness-checklist/
- **Technology Competencies Checklist:** https://www.perkins.org/resource/technology-competencies-forcollege-ready-students-with-visual-impairments/
- **High School Readiness Checklist:** https://sites.google.com/usdb.org/usb-expanded-core-curriculum/home?authuser=0
- Beyond Booksmart: https://www.beyondbooksmart.com/
- Harvard Graduate School of Education: Center for the Developing Child: Center on the Developing Child at Harvard University (2014). Enhancing and Practicing Executive Function Skills with Children from Infancy to Adolescence. Retrieved from www.developingchild.harvard.edu. https://developingchild.harvard.edu/resources/activities-guide-enhancing-and-practicing-executive-function-skills-with-children-from-infancy-to-adolescence/

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Resources

Technology Competencies Webinar Series: (includes presentation about concept development and reading with Marianne Wolf, and Access and Equity with Ting Siu) https://www.perkins.org/resource/tech-literacy-and-educational-equity-exploring-whats-next-and-necessary-for-college-aspiring-learners-with-blindness-and-low-vision/

Best Practices AER Webinar Series 2020 (includes Executive Functioning):

https://www.perkins.org/resource/best-practices-and-expert-advice-how-educators-can-support-college-bound-students-who-are-visually-impaired/

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Summer Learning Series 2022: <u>https://www.perkins.org/resource/students-with-vision-loss-college-and-transition-where-we-are-and-where-we-are-going/</u>



Resources

Books

Dawson, P., & Guare, R. (2017). The Work-Smart Academic Planner, Revised Edition (Rev. ed.). New York, NY: Guilford Press.

Note: This is a great tool to learn how to break tasks down; all of the charts and lists are included in digital formats once purchased, so these can be downloaded as PDFs, or you can use them as inspiration.

Guare, R., & Dawson, P. (2012). Coaching Students with Executive Skills Deficits. New York, NY: Guilford Press.

Guare, R., Guare, C., & Dawson, P. (2019). Smart but Scattered-and Stalled. New York, NY: Guilford Press.

Note: All the Smart but Scattered books are awesome and cover a wide age range.

Guare, R. & Dawson, P. (2018) *Executive Skills in Children and Adolescents: A Practical Guide to* Assessment and Intervention. New York, NY; Guilford Press.

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Kennedy, M. (2017). Coaching College Students with Executive Function Problems. New York, NY: Guilford Press.

Meltzer, L. (2010). What Works for Special Needs Learners: Promoting Executive Function in the Classroom. New York, NY: Guilford Press..

Delman, M. (2018). Your Kid's Gonna Be Okay. Needham, MA; Beyond Booksmart.com Note: Go to their website to order.



Questions?

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ANY QUESTIONS DO YOU HAVE?



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