Educational Interventions for Students with FASD

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Overview of FASD

- A group of birth defects that can result from prenatal exposure to alcohol.
- May include physical, mental, behavioral and/or learning disabilities.
- Prenatal alcohol exposure affects each person differently.
- Permanent damage, lasts a lifetime

Characteristics of FASD

- Distinctive facial features
- Growth deficits, such as low birth weight
- Brain damage, such as small skull at birth, structural defects, and neurological signs.
- Heart, lung and kidney defects
- Behavioral or cognitive deficits

Secondary Disabilities Associated with FASD

- Mental health problems
- Disrupted school experience
- Involvement with law enforcement
- Out-of-home placements
- Alcohol and drug problems

This is Challenging Work!

- There may be days when it feels like there is little return for the investment.
- Progress takes time, determination, a lot of repetition, and a constant focus on the positive.
- Many of the strategies described in this presentation are excellent for all students, and especially those who have similar learning needs to students with FASD.
- If a strategy is not successful, try another and then another.

Protective Factors (Streissguth, et al.)

- Living in a stable and nurturing home
- Diagnosis before the age of 6
- No history of violence against oneself
- Staying in each living situation for 3 years
- Experiencing a good quality home from 8 to 12 years of age
- Eligible for developmental disability services
- Official diagnosis of FAS
- Having basic needs met

Considerations for Education

- A team approach is recommended
- Approach is sometimes contrary to what teachers have been taught to do
- A school-based advocate is recommended
- Students may have difficulty recognizing their limitations or functioning difficulties
- Behaviors will change depending on student age and social context

Five Essential Elements

- Structure – student may lack internal structure
- Consistency – students need predictable surroundings
- Variety – needed to get student's attention
- Brevity – helps student to maintain attention
- Persistence – keep focusing on what you want them to learn

Surrogate Frontal Lobe

- Educators must "fill in" some of the functions that are missing due to inadequate development of the frontal lobe, the part of the brain responsible for planning, managing emotions, maintaining attention, impulse control, and anticipating consequences.
- Repeat, repeat, and repeat again what it is we want them to learn.

Key Messages for Educators

- Understand that a child with FASD has a disability
- Please do not try to change something she/he cannot change
- Your life and the child's life will be less stressful and better outcomes will be realized
- You can make a significant difference

Tips from Parents

- Please don't assume that my child's behavior is due to poor parenting
- Give my child praise for doing something well or for trying hard
- Use kindness and redirection instead of punishment
- My child can learn, just differently from others
- My child may need quiet time and a quiet space to calm down
- My child may have trouble sleeping, and this is why he/she may appear tired

Tips from Parents (cont.)

- Behaviors that appear willful may be due to brain damage
- Time is an abstract concept
- My child may be immature for his/her age
- Sometimes my child demonstrates poor judgment
- My child has low frustration tolerance
- My child has difficulty remembering new learning
- It is a challenge to manage and appropriately express emotions

The Functional Assessment

- Strengths and Interests of Student
- Current Level of Performance
  - Cognitive/Developmental
  - Adaptive Behavior
  - Social/Behavioral
  - Other
- Attention span/distractibility

The Functional Assessment (cont.)

- Ability to work independently
- Types of needed support (frequency and environment)
  - Classroom
  - Playground or sports field
  - Hallway
  - Cafeteria
  - Bus
  - During Transitions

The Functional Assessment (cont.)

- Ability to follow a routine
  - Independently
  - Needs reminders
  - Peer assistance
  - Visual cues
  - Adult assistance
- Ability to communicate
  - Independently
  - Needs minimal assistance and reminders
  - Needs visual cues, direct instruction or adult assistance

The Functional Assessment (cont.)

- Peer interactions
  - Structured environments
  - Unstructured environments
  - Five Collaborative for Academic and Social Emotional Learning (CASEL) domains:
    - Self-Awareness
    - Self-Management
    - Social Awareness
    - Responsible Decision Making
    - Relationship Skills

Environmental Modifications

- Reduce visual and auditory distractions
- Teach routines
- Use visual cues and tools
- Adjust lighting and sound
- Have consistent yet flexible seating
- Use organizational systems, such as bins, baskets, color coding, etc.

Reduce visual/auditory distractions

- Calm colors on the walls
- Reduce brightness of lighting
- Have fans or blankets available if student becomes too warm or too chilled
- Have pets and plants in the classroom, and have student take care of living things
- Keep seating assignments consistent; a horseshoe pattern is recommended

Reduce visual/auditory distractions (cont.)

- Free up classroom from unnecessary distractions or stimulations
- Store materials not in use in boxes or cupboards instead of counter tops
- Arrange classroom furniture so that students are not tempted to run or interfere with each other
- Eliminate unnecessary noises or allow student to use headphones
- Tape out a space for the student's desk

Teach Routines

- Pass key for bathroom breaks
- Bottled water under the desks
- Teach students to walk one square away from the hallway wall
- Teacher should walk in the middle of the line of students
- Develop pencil sharpening strategies, such as rotating a student who is responsible for sharpening all pencils for the week

Teach Routines (cont.)

- Prepare students for a routine when substitute teachers are in the classroom
- Set aside time for desk and locker cleaning
- Set up organizational systems for all supplies
- Have extra supplies on hand that students can borrow without asking

Visual Cues and Tools

- Use nonverbal cues to gain student attention, such as raising your hand in the air
- Use photographs to show where things belong
- Define and organize a space that belongs to the student
- Give students additional space near their desk to organize their belongings

Visual Cues and Tools (cont.)

- Use plastic tubs for each student to be used for unfinished work
- Frame the top of the student's desk with colored tape
- Use a schedule of the day for help with transitions
- Use a consistent area of the white board for daily homework assignments and schedules
- Review the schedule frequently
- Use color-coded calendars

Adjust Lighting and Sound

- Natural light is preferred
- Colored lights that can be manipulated by the student can be helpful
- Reduce bright lighting by removing some light bulbs
- Allow headphones
- Clear classroom of annoying background noise, such as a battery-operated ticking clock

Have Consistent Yet Flexible Seating

- Assign seating and maintain consistency
- A child with FASD often learns best when in proximity to the teacher
- Clearly define reflection and relaxation places
- Institute a formal process for moving from regular seating to alternative seating – for example, a chit

Use Organizational Systems

- Color code whenever possible
- Use tubs and cubbies that are clearly labeled
- Designate a location for “no name” assignments
- Send a daily communication log to parents or use an app, such as PreciouStatus

Communication

- Some students are chatty socializers
- Others are quiet and keep to themselves
- Vocabulary may be limited
- Student may struggle with understanding that talking is not necessarily effective
- Sequential verbal instruction may be hard to understand
- Student may go “off topic”

Communication (cont.)

- Student may have difficulty understanding others
- Difficulty with word retrieval
- May miss important information
- May fail to follow verbal direction
- Information might be taken very literally when the communicator is intending to share a joke or is sarcastic
- Student may confuse meanings of the same word used in different ways

Hyperplexia Syndrome

- Precocious ability to read words above chronological age
- Fascination with numbers and letters
- Significant difficulty understanding verbal language
- Abnormal social skills that include difficulty interacting appropriately with people

Communication Strategies

- Receptive language
- Giving directions
- Be specific when teaching new concepts
- Expressive language

Executive Functions - Description

- Direct capacities of the mind
- Frontal lobes direct perceptions, emotion, cognition, and motor functions
- Give commands to engage in purposeful, organized, self-regulated, goal-directed behavior
- Cues the use of other cognitive abilities, such as reasoning, language, visual perception, and memory processes.

Executive Functions – Description (cont.)

- Involved in the direction of:
  - shifting strategies
  - adapting
  - Inhibition
  - abstract reasoning
  - metacognitive capacities (thinking about thinking)
  - sequencing
  - organizing

Executive Functions

- Planning and sequencing
- Organization
- Time management and prioritization
- Working memory
- Metacognition
- Inhibition
- Self regulation

Executive Functions (cont.)

- Initiation
- Flexibility and ability to shift between tasks
- Focusing attention
- Sustaining attention
- Storing information
- Retrieving information

What to Watch for in Executive Functioning

- Individual students may have strengths or weaknesses in one or more of the executive functions at any given time.
- There may be a well-developed executive ability paired with one or more undeveloped abilities.

Underdeveloped Executive Functions

- Student may not:
  - perceive new information
  - appear to hear what is being said
  - see what is happening in the environment
  - know where things are located
  - realize when physical contact is being made
  - perceive sensations
  - easily arise from bed

Underdeveloped Executive Functions (cont.)

- Student may:
  - be slow to initiate or engage in an activity
  - be reluctant to make social contact
  - lack ability to modulate own behavior
  - lack strategies to manage emotions
  - be unaware of his/her emotional states, thoughts, or actions
  - act without thinking, interrupt others, or blurt out responses

Underdeveloped Executive Functions (cont.)

- Student may:
  - act wildly or out of control
  - give excessive responses or reactions to typical situations
  - be out of seat
  - attempt to get wants met without considering consequences
  - say things that embarrass peers

Other Exec. Functioning Challenges

- May approach tasks or assignments in a haphazard way
- Unaware of what is required to get a task done
- Starts working before directions are given
- Remains absorbed in the moment and does not think about the end product
- Does not seem to have problem-solving skills

Other Exec. Functioning Challenges (cont.)

- Slow to flexibly shift from one activity to another
- May repeat same actions over and over again
- Difficulty stopping an activity
- Rigid adherence to a routine even when circumstances have changed
- Organization is out of sequence, fragmented, or incoherent

Other Exec. Functioning Challenges (cont.)

- Lack of focused and selective attention to task at hand
- Attention not maintained
- Requests frequent repetition of directions
- Does not complete all steps in a multi-step assignment
- Gives vague responses about information
- Difficulty and slowness in processing information presented

Other Exec. Functioning Challenges (cont.)

- Trouble managing the passage of time and estimating how long something might take
- May accomplish little work in a specified period of time
- May consistently hand in late assignments
- Often arrives late for activities and events
- Makes errors in assignments and tests due to not checking work

Steps in an Intervention Plan

- Describe lagging skill
- Set a realistic goal
- Create a plan that includes skills to be taught, supports to be provided, and techniques to teach the skill
- Include incentives and discuss with student and parent
- Supervise the student, conduct formative assessments, and make changes to plan, as needed
- Reward students for using the plan and fade supervision and prompts

Examples of Interventions

- Student forgets to hand in completed homework
- Set a goal for student to use a homework application on his/her computer to prompt submission of assignment to teacher on a daily basis, as seen by student handing in assignments 85% of the time
- Intervention plan will include how teacher will work with student to acquire necessary skills, such as:
  - learning to download the app
  - what to do when the app signals a prompt to put assignment in backpack and hand in when student enters the class

Examples of Interventions (cont.)

- Suggested teacher accommodations:
  - Post homework assignments in the same place every day
  - Prompt student to use the app
  - Monitor progress on a daily basis
  - Establish designated homework bin
  - Prompt students to pack up materials in the bin at the end of the day
  - Work with parents to devise a prompting system at home that may involve checking student's homework and ensuring that it is in the backpack

Include an Incentive System

- Discuss incentives with students and parents
- Ensure that incentives are motivating and realistic for parents and teachers
- Write incentives into the plan
- Example:
  - Student earns points that may be applied towards time involved in a preferred activity

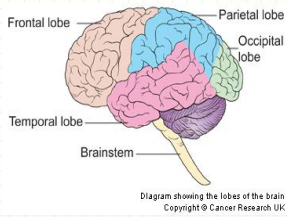
Include an Incentive System (cont.)

- Closely supervise the student following the steps
- Prompt as needed
- Evaluate progress and make changes, if needed
- Start with a daily meeting and then meet less frequently, as appropriate
- Reward students for using the plan and fade supervision and prompts
- Some students may eventually internalize the routine, but some may require continued prompting

Brain Areas Impacted by FASD

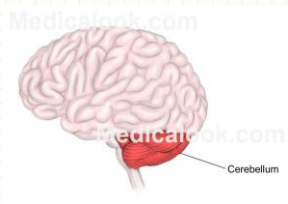
- Cerebrum, especially the frontal lobes
- Cerebellum
- Corpus Callosum
- Basal Ganglia
- Hippocampus

Frontal Lobes



Responsible for executive functions, impulse control, and judgment.

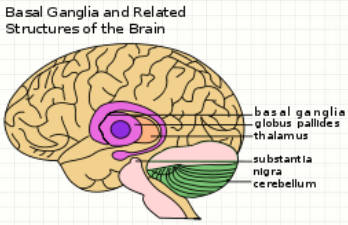
Cerebellum



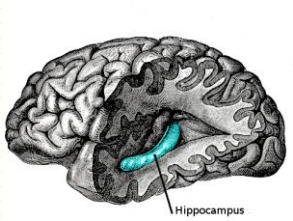
Responsible for coordination, movement, behavior, and memory.

Basal Ganglia

Processes memory, time perception, setting goals, and predicting outcomes



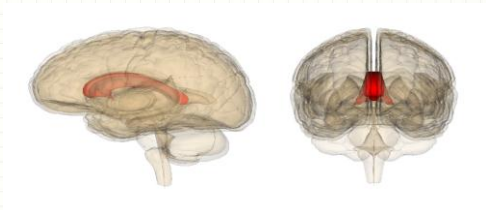
Hippocampus



Involved in learning and memory

Corpus Callosum

Processes information between the right and left hemispheres



Brain-based Teaching Strategies

- Multisensory teaching that integrates visual, auditory and kinesthetic-tactile senses to enhance memory and learning
- Teach to student's learning style
- Use evidence-based approaches documented by neuroscience, e.g., Eric Jensen
- Incorporate movement when introducing and practicing newly learned concepts
- Reduce stress

Visual (Spatial) Learners

- Underlining
- Different colors
- Highlighting
- Symbols
- Flow charts and timelines
- Charts and graphs

Visual (Spatial) Learners (cont.)

- Pictures, videos, posters, slides
- Different spatial arrangements on the page
- Flashcards
- Textbooks with diagrams and pictures
- Gestures and descriptive language

Auditory (Verbal/Linguistic)

- Lectures
- Tutorials
- Discuss topics with other students or teacher
- Explain new ideas to other people
- Add rhymes or tunes when studying
- Employ mnemonic devices

Auditory (Verbal/Linguistic) (cont.)

- Use a tape recorder
- Remember interesting examples, stories, jokes
- Describe overheads, pictures, and other visuals to a student who was absent
- Give speeches
- Engage in debates

Kinesthetic Learners

- Engage all senses (sight, touch, taste, smell, hearing)
- Try using the MindUp curriculum
- Laboratories
- Field trips
- Examples and demonstrations
- Exhibits, samples, photographs

Kinesthetic Learners (cont.)

- Real-life examples, role play and drama
- Applications
- Hands-on approaches (electronic devices)
- Trial and error
- Projects such as posters, murals, and shadow boxes

Social Skills and Behavior

- Address feelings and safety
- Create a positive classroom climate
- Reduce stress
- Directly teach social skills
- Use cues
- Plan for smooth transition between activities
- Elevate social status of student
- Take advantage of teachable moments relative to peer interactions

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Today's Overview

1. Students with FASD have brains that are damaged
2. It's crucial for adults to make adaptive changes
3. Many interventions are available and can help