ASD and Assistive Technology: Organization

Objectives
- Gain understanding of the common organizational challenges for individuals with ASD.
- Gain understanding of features of technology that may support the common organizational challenges of ASD.
- Gain understanding of the need and process to feature match student needs to technology features.
- Become informed about assistive technology tools that may contain features to support organizational challenges in individuals with ASD.

In the world beyond school...
What are the characteristics of a successful independent learner and productive citizen?

Success in School
Top 10 skills as identified by a survey of 8,000 teachers
- Listen to others
- Follow the steps
- Follow the rules
- Ignore distractions
- Take turns when you talk
- Ask for help
- Get along with others
- Stay calm with others
- Be responsible for your bx
- Do nice things for others

(Elliot & Grisham, 2006)
Prepares Young People for Success in Adulthood

Common list of soft skills employers want:

- Social skills/interests/involvement
- Communication skills
- Interpersonal abilities
- Problem solving
- Teamwork
- Adaptability/flexibility

Executive Functioning Defined

- Cognitive processes that enable individuals to engage in goal-directed or problem-solving behavior (Council for Exceptional Children, 2011)

- Allow us to organize our behavior over time and override immediate demands in favor of longer-term goals (Dawson & Guare, 2010)

- “CEO of the brain,” “orchestra conductor,” “GPS system”

In Brief: Executive Function: Skills for Life and Learning

https://www.youtube.com/watch?v=efCq_vHUMqg

Specific Executive Functions

<table>
<thead>
<tr>
<th>Executive Function</th>
<th>Definition</th>
<th>Signs of Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Control</td>
<td>The ability to modulate emotional responses by bringing rational thought to bear on feelings.</td>
<td>Easily upset or excited, overreacts, frequent mood changes, doesn’t regulate emotion appropriately to situation</td>
</tr>
<tr>
<td>Inhibit</td>
<td>The ability to stop one’s own behavior at the appropriate time, including stopping actions and thoughts. The flip side of inhibition is impulsivity: if you have weak ability to stop yourself from acting on your impulses, you have lack of &quot;impulsive control.&quot;</td>
<td>Distractable or impulsive, cannot delay gratification, delay certain activities or responses for the sake of others</td>
</tr>
<tr>
<td>Goal Setting/Planning</td>
<td>The ability to manage current and future-oriented task demands.</td>
<td>Sets unrealistic goals, starts work at last minute, fails to anticipate consequences, difficulty identifying steps to take for task/project completion</td>
</tr>
<tr>
<td>Organize</td>
<td>The ability to impose order on work, play, and storage spaces.</td>
<td>Scattered, disorganized approach to solving problems, or managing materials, unable to establish order in a place or activity</td>
</tr>
<tr>
<td>Initiate</td>
<td>The ability to begin a task or activity and to independently generate ideas, responses, or problem-solving strategies.</td>
<td>Trouble getting started, may appear defiant</td>
</tr>
</tbody>
</table>

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7/14/17
Specific Executive Functions (cont’d)

<table>
<thead>
<tr>
<th>Executive Function</th>
<th>Definition</th>
<th>Signs of Difficulty</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Memory</td>
<td>The capacity to hold information in mind for the purpose of completing a task.</td>
<td>Forgets assignments, materials, classroom procedures, remembers only part of directions, difficulty following lengthy instructions, appears as if they do not pay attention</td>
</tr>
<tr>
<td>Shift</td>
<td>The ability to move freely from one situation to another and to think flexibly in order to respond appropriately to the situation. The ability to shift is often called cognitive flexibility</td>
<td>Difficulty coping with changes in routine, thinking “outside of the box”, smoothly transitioning from one task to another</td>
</tr>
<tr>
<td>Self-Monitor</td>
<td>The ability to monitor one’s performance and to measure it against some standard of what is needed or expected</td>
<td>Doesn’t notice how others react to behavior, asks for help rather than trying first, avoids problem-solving games</td>
</tr>
</tbody>
</table>

(Gioia, Isquith, Guy, & Kenworthy, 2013; Cooper-Kahn, 2008)

Four Areas of Organization

- Self-management
- Time management
- Information management
- Materials management

WATI ASNAT Section 8 Organization

Underlying Characteristics Checklists (UCC)

<table>
<thead>
<tr>
<th>Version</th>
<th>Who</th>
</tr>
</thead>
<tbody>
<tr>
<td>UCC-Early Intervention</td>
<td>3 – 72 months of age</td>
</tr>
<tr>
<td>UCC-Classic</td>
<td>Intended for those who are significantly below average cognitive functioning</td>
</tr>
<tr>
<td>UCC-High-Functioning</td>
<td>Intended for high-functioning individuals ages 6+</td>
</tr>
<tr>
<td>UCC-Self Report-Adolescent</td>
<td>12 – 18 years old</td>
</tr>
<tr>
<td>UCC-Self Report-Adult</td>
<td>Ages 18+</td>
</tr>
</tbody>
</table>

Dr. Ruth Aspy & Dr. Barry Grossman, 2007
http://www.aapcpublishing.net
**UCC Domains**

- Social
- Restricted Patterns of Behavior, Interests, and Activities
- Communication
- Sensory Differences
- Cognitive Differences
- Motor Differences
- Emotional Vulnerability
- Medical/Biological Factors

INCLUDING Individual Strength and Skills Inventory (ISSI)

---

**Cognitive Differences and Impact on Organization**

<table>
<thead>
<tr>
<th>Area of Developmental Concern</th>
<th>Possible Effect on Organizational Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central Coherence</td>
<td>Misses the broader categories- the “large” project and not just details; limited understanding of big picture to identify pieces/part</td>
</tr>
<tr>
<td>Attention</td>
<td>Using work time efficiently; sustaining attention to task; shifting attention</td>
</tr>
<tr>
<td>Working Memory</td>
<td>Difficulty recalling information; Forgets what they should be working on; Monitoring time</td>
</tr>
<tr>
<td>Planning</td>
<td>Delay in meeting timelines; Difficulty planning steps in assignment; Difficulty planning/organizing materials</td>
</tr>
<tr>
<td>Self-Monitoring</td>
<td>Evaluation of work; Identifying realistic goals; Adjusting actions/inhibiting inappropriate actions</td>
</tr>
</tbody>
</table>

---

**Social/Communication Differences and Impact on Organization**

<table>
<thead>
<tr>
<th>Area of Developmental Concern</th>
<th>Possible Effect on Organizational Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following Instructions</td>
<td>Misses out on important information; Difficulty understanding assignments/requests; Difficulty understanding written and verbal directions/steps/processes</td>
</tr>
<tr>
<td>Asking for Help or Information</td>
<td>Delay in completion of task; Prevents locating key information or materials; Impact initiating</td>
</tr>
<tr>
<td>Language Development</td>
<td>Understanding of ordinal labels; Categorical understanding of words; Difficulty with understanding spatial words (on, in, beside, etc.) Difficulty identifying relevant information from verbal information or social situations</td>
</tr>
<tr>
<td>Expressing Frustration and Emotions</td>
<td>Impacts self management; Impacts ability to move forward with activities/projects;</td>
</tr>
</tbody>
</table>
### Restrictive/Repetitive Behavior and Sensory Differences Impact on Organization

<table>
<thead>
<tr>
<th>Area of Developmental Concern</th>
<th>Possible Effect on Organizational Skills</th>
</tr>
</thead>
<tbody>
<tr>
<td>Repetitive Motor Movements</td>
<td>Execution of actions/tasks; Difficulty remaining on task</td>
</tr>
<tr>
<td>Transitioning</td>
<td>Difficulty getting started or ending task; Difficulty moving from preferred activities to non-preferred/required activities; Delay in completing tasks</td>
</tr>
<tr>
<td>Need for Routine</td>
<td>Too routinized inhibits flexible thinking; Preferred routines can interfere with more effective organizational strategies</td>
</tr>
<tr>
<td>Activity Level (under or over)</td>
<td>Impacts focus</td>
</tr>
<tr>
<td>Sensory Differences</td>
<td>Difficulty regulating/filtering sensory input; Difficulty processing auditory information</td>
</tr>
<tr>
<td>Restricted Focus</td>
<td>Impacts big picture thinking; Difficulty creating and sticking to timeline; Difficulty shifting attention within, between or among tasks</td>
</tr>
</tbody>
</table>

### AT Definition

**What:** any item piece of equipment or product system

**How:** acquired commercially off the shelf, modified, or customized

**Why:** to increase, maintain or improve functional capabilities

**Who:** a child with a disability

(Authority: 20 U.S.C. 1401(1))

http://www.atinternetmodules.org/

### AT Services

- Functional evaluation in customary environment
- Purchasing, leasing, acquiring
- Selecting, designing, fitting, customizing, adapting, applying, maintaining, repairing, or replacing
- Coordinating services, intervention, therapy.
- Training or technical assistance (parents, child professionals)

(Authority: 20 U.S.C. 1401(2))

### Support for Diverse Learners

- Assistive Technology
- Specialized Instruction
- Differentiated Instruction
- Universal Design for Learning
SETT =

Student
Environment
Tasks
Tools

SETT Framework Publications
http://www.joyzabala.com/Documents.htm

Process for Including the Teaching of Organization Skills Using Assistive Technology

•Find the champions of AT/ASD
•Assess with SETT process and UCC
•Design plan to teach organization skills
•Implement plan
•Evaluate implementation of plan and re-vamp as needed

Student 1: Materials Management

• Messy work and storage areas
• Lost papers and projects
• Can’t find work tools such as book, scissors or markers quickly
• Difficulty keeping digital files organized

Student: Danika

Fifth grader, likes Disney princesses and Black Beauty, and very active imagination
STUDENT: DANIKA

Can be passive and shy, hesitant to make a mistake, easily distracted

STUDENT: DANIKA

Uses a laptop for select academic tasks, tends to lose materials or unable to locate materials, peers complain about her tools and materials in their workspace

Environments

Tasks

• Transition from one location to another with needed materials
• Sustain attention to tasks
• Ask for help when unsure of what materials to use for activity
• Prepared for class with all necessary materials
• Turn in homework, classroom work, etc. to appropriate area
• Keep personal space organized
Welcome to the Student Inventory for Technology Supports (SIFTS). The SIFTS is a tool to assist school teams in matching a student’s needs with assistive technology (AT) features.

http://sifts.ocali.org

Materials Management

The student has difficulty being independently organized and prepared with necessary tools/materials.

Select the statements that best describe your student’s ability to effectively manage materials. The student has...

- difficulty managing (specifically free-meeter difficult) scarce materials and tools.
- difficulty/hindering using traditional organizational tools (folders, containers, file, etc., boxes, shadowing, file, suspension, etc.).
- difficulty deciding when materials are needed for the given task/environment.
- difficulty keeping materials in a consistent location for easy retrieval.
- difficulty keeping track of materials when transforming.
- difficulty executing/forcing search strategies for lost materials.
- difficulty effectively managing materials.

Feature Matching - Danika

<table>
<thead>
<tr>
<th>Needs</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>frequently loses tools and materials to complete assignments</td>
<td>• containment features</td>
</tr>
<tr>
<td>other students complain she does not stay within her assigned space with materials</td>
<td>• checklists</td>
</tr>
<tr>
<td>frequently loses completed assignments</td>
<td>• color coding</td>
</tr>
<tr>
<td>needs help clarifying needed materials due to distractibility</td>
<td>• visual boundaries</td>
</tr>
<tr>
<td></td>
<td>• theme-based power card</td>
</tr>
<tr>
<td></td>
<td>• digital mobile/cloud based storage</td>
</tr>
<tr>
<td></td>
<td>• cue cards (when you don’t know what to do)</td>
</tr>
<tr>
<td></td>
<td>• social narrative</td>
</tr>
<tr>
<td></td>
<td>• video modeling</td>
</tr>
</tbody>
</table>
Materials Management

- Low-tech organizers
- Checklists
- Container system
- Coding system
- Electronic filing and storage
- Portable electronic storage
- Computer-based tools

Labeling Container Systems:
Color, Picture, Words

Container Systems

Materials Color Coded System
Checklists

I need to be careful with the things I own.
It is important to keep track of
and not lose my things.

Before I leave school for the day,
I have to check for:

☐ my hat
☐ my gloves
☐ my wallet
☐ my lunch bag
☐ my school bag
☐ the books I need
☐ my agenda
☐ anything else I brought with me

What do I need to take home for
homework today?

1. ____________________________
2. ____________________________
3. ____________________________
4. ____________________________
5. ____________________________
6. ____________________________
7. ____________________________
8. ____________________________

Checklist

Mrs. Jones' Math Class

I Need:
☐ green textbook
☐ green notebook
☐ green pencil case
☐ calculator

Routine:
☐ go to school
☐ put homework in green basket
☐ get assignment
☐ copy notes
☐ listen to teacher
☐ raise hand to answer question

Electronic File Management Systems
**Learning Management Systems**

- Schoology
- Blackboard
- canvas
- Desire2Learn
- Edmodo
- Moodle

---

**Approaching Self-Management: What’s First?**

- All of these strategies can't be initiated at the same time.
- Prioritize! Consider environments, tasks, support needed.
- Introduce one strategy, collect data and adjust as needed to increase positive outcomes.

---

**Student 2: Information Management**

- Breaking a large project into smaller steps
- Organizing notes or review items
- Completing multi-step tasks
- Initiating tasks
- Holding items in working memory

---

**Student: Cody**

Junior in high school, loves mobile devices, special interest in trains, enrolled in AP science and math courses.
**STUDENT: CODY**

Difficulty with working memory, sequencing, planning, and accessing relevant text based information

---

**STUDENT: CODY**

Difficulty completing multi-step projects/assignments, struggles with research projects, unable to keep up with notetaking in class and record relevant information

---

**Environments**

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**Tasks**

- Integrate and evaluate multiple sources of information presented in different media or formats (e.g. visually or quantitatively as well as in words)
- Conduct short as well as sustained research projects based on focused questions demonstrating understanding of the subject under investigation
- Draw evidence from literary or informational texts to support analysis, reflection, and research
- Take class notes identifying relevant information from the speakers content
SIFT Organization Domain

Welcome to the Student Inventory for Technology Supports (SIFTS). The SIFTS is a tool to assist school teams in matching a student’s needs with assistive technology (AT) features.

http://sifts.ocali.org

Feature Matching - Cody

<table>
<thead>
<tr>
<th>Needs</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>working memory challenges</td>
<td>• electronic assignment keepers</td>
</tr>
<tr>
<td>difficulty locating key information in text</td>
<td>• task and sequence managers</td>
</tr>
<tr>
<td>unable to keep up with note taking and</td>
<td>• highlighting, masking, embedded notes, etc.</td>
</tr>
<tr>
<td>record relevant information</td>
<td>• digital record feature</td>
</tr>
<tr>
<td>difficulty planning and then following</td>
<td>• visual checklists</td>
</tr>
<tr>
<td>steps to complete projects</td>
<td>• task and project outliners/graphic</td>
</tr>
<tr>
<td></td>
<td>organizers</td>
</tr>
</tbody>
</table>
Information Management
- Tabs
- Sticky notes, index cards
- Highlighters
- Handheld recorders
- Key words
- Study guide
- Task analysis
- Digital highlighters and sticky notes

Information Management
- Handheld scanners/electronic extraction
- Electronic organizing
- Study grid generators/grading rubric
- Online search tools
- Online web trackers
- Online sorting file tools
- Digital graphic organizers
- Online manipulatives, interactive, tutorials, animations

Highlighting
- Highlighter Tape
- Highlighter Pens
- Software with Highlighting and Text Extraction Feature
- Kurzweil

Sticky Notes
- Traditional Sticky Notes
- Computer OS Sticky Notes
- Embedded Sticky Notes: Bubble Notes-Kurzweil
Rubrics

• iRubric
  http://www.rcampus.com/indexrubric.cfm

• Rubrics for Teachers
  http://www.rubrics4teachers.com/

• Teachers First Rubrics and Rubric Makers
  http://www.teachersfirst.com/single.cfm?id=8602

Graphic Organizers

HOLT Graphic Organizers

Organizer Tools

• List with links and descriptions for online tools
  http://cooltoolsforschools.wikispaces.com/Organiser+Tools
Note Taking: Cornell Notes

Guided Notes
Key Concepts:
- Teacher prepared handouts
- Outline lectures, audiovisual presentations or readings
- Leave blank spaces for students to fill in key concepts

PowerPoint Notes
View—Keynote Does It Too!

Note Taking Programs
- Evernote
- Microsoft OneNote
- Zoho Notebook
- Zotero
Student 3: Time Management

- Arrives late
- Misses deadlines
- Difficulty breaking tasks into smaller parts
- Difficulty following a sequence to complete a task
- Struggles determining the amount of time needed to complete a task

STUDENT: DYLAN

High school requirements completed, attending community based postsecondary job training program, job training at humane society, loves his pets, involved in church.
STUDENT: DYLAN

Limited use of language

Uses language on a limited basis, can read and write at a 3rd grade level, has an iPhone

STUDENT: DYLAN

initiative

Late to work due to distractions, difficulty completing multi-step tasks, trouble with self-initiation, transitioning challenges, not doing well with traditional time management tools

Environments

animal humane society

Tasks

• Transition from one activity to another with ease
• Use work time efficiently
• Monitor work speed
• Follow schedule and work rules/routines
• Sustain work for given amount of time
• Arrive and depart work on time
SIFT Organization Domain

Welcome to the Student Inventory for Technology Supports (SIFTS). The SIFTS is a tool to assist school teams in matching a student's needs with assistive technology (AT) features.

http://sifts.ocali.org

SIFTS - Organization and Planning

Time Management

The student has difficulty adhering to set timelines and/or transitioning between and during activities.

Select the statements that best describes your student's ability to effectively manage time. The student has...

- Difficulty understanding and using traditional time management tools (e.g., clocks, calendars, schedules, planners, etc.).
- Difficulty arriving and/or departing on time (e.g., late to class, dressing for gym, stopping at locker).
- Difficulty when changing from one task to another in a timely manner.
- Difficulty developing timelines for a complex, multi-step job or assignment subtasks.
- Difficulty predicting timelines during the completion of a project.
- Difficulty using work time efficiently and/or difficulty estimating time left.
- Difficulty monitoring and scheduling actions to reach the goal within a reasonable time frame.

- No difficulty with time management.

Feature Matching - Dylan

<table>
<thead>
<tr>
<th>Needs</th>
<th>Features</th>
</tr>
</thead>
</table>
| multiple environments                      | • mobile solutions
|                                            | • visual/auditory/tactile reminders with time keeping functions         |
| frequently late                            | • visual/auditory supported countdown timer                              |
| difficulty sustaining work over time       | • visual task charts and schedules                                        |
| difficulty completing tasks, adhering to   | • virtual video support                                                  |
| schedules, transitioning                   |                                                                          |
| continues to need family member and job    |                                                                          |
| coach present to initiate tasks and activities |                                                                          |
Time Management

- Checklists
- Paper planners/Calendars
- Schedules
- Portable, adapted time keepers
- Electronic reminders
- Digital planners, cell phones
- Web based planning tools

WATI Section 9 Organization

Clock and Timer/Alarm: Apple iOS

Timer

Alarm

Timers

- Time Timer Watch
  - http://www.timetimer.com/collections/watches

- Watch Minder
  - http://www.watchminder.com/

- Apple Watch

Reminders: Text Memos

- Text Memos
  - http://www.textmemos.com

- Remind101.com
  - https://www.remind101.com

- Ohdontforget.com
  - http://ohdontforget.com

- SpectraSoft.com/appointment-software/reminders/text
Reminders: Location Reminders

Location Alerts has a simple interface that lets you set alerts quickly.

http://locationalerts.appsicum.com/

Reminders: Apple iOS

Create a List
Set reminder by location or date and time
Receive Push Notification Reminder

Outliner

Visual Schedule Planner

Books For Educators & Parents

- *Executive Skills in Children and Adolescents: A Guide to Assessment and Intervention* – Peg Dawson and Richard Guare

- *Late, Lost, and Unprepared: A Parent’s Guide to Helping Children with Executive Functioning* – Joyce Cooper-Kahn and Laurie Dietzel

- *Smart But Scattered* – Peg Dawson and Richard Guare

AT Assessment Resources

- WATI ASNAT – Chapter 9 - Organization

- ATIM Modules
  WATI - Organization Part 1-Part 4
  [http://www.atinternetmodules.org](http://www.atinternetmodules.org)
AIM Modules

- Cognitive Differences
- Social Narratives
- Visual Supports

http://www.autisminternetmodules.org