

Evidence Based Practice Training:

Technology-aided Instruction and Intervention (TAII)



Adapted from Sam, A., & AFIRM Team. (2015). Technology-Aided Intervention and Instruction. Chapel Hill, NC: National Professional Development Center on Autism Spectrum Disorder, FPG Child Development Center, University of North Carolina. Retrieved from <https://afirm.fpg.unc.edu/technology-aided-instruction-and-intervention>

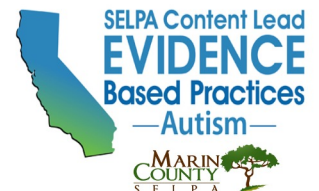
What is CAPTAIN



The California Autism Professional Training And Information Network (CAPTAIN) is an interagency network developed to support the understanding and use of evidence based practices (EBPs) for individuals with Autism across the state of California.



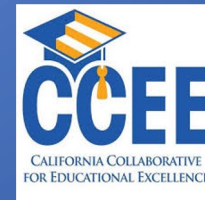
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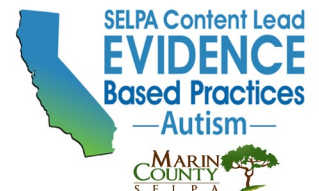
What is CAPTAIN

Marin County SELPA in partnership with CAPTAIN, are members of the Statewide System of Support as the Special Education Content Lead for Autism

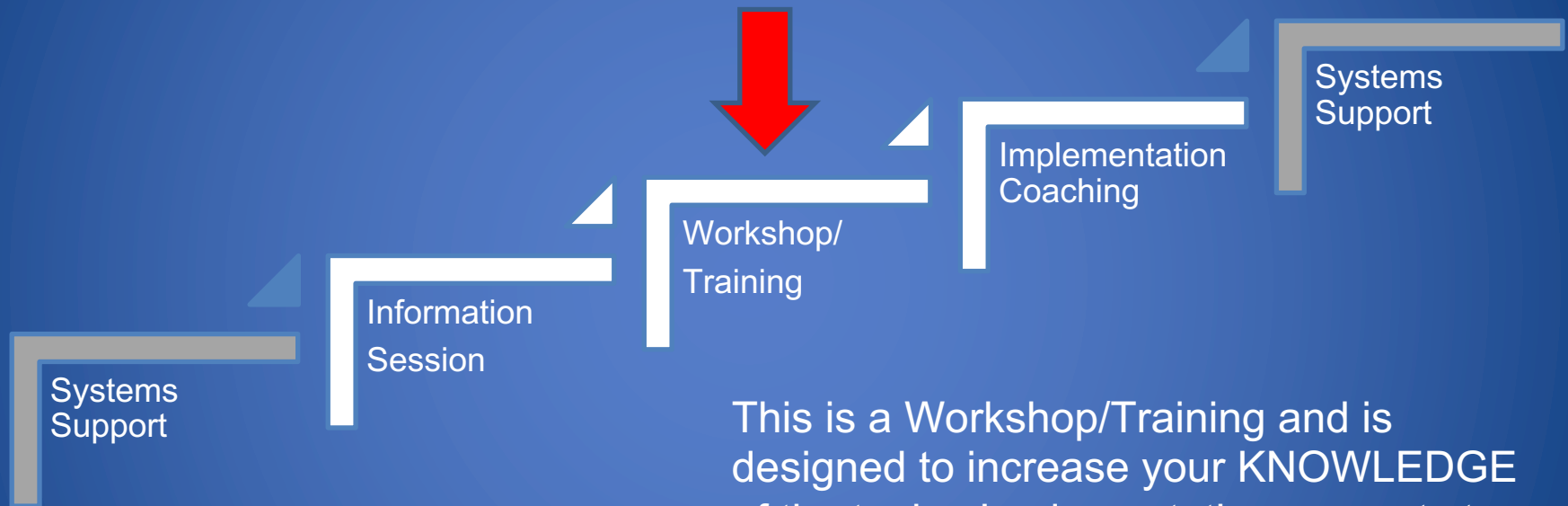
This project is funded by the California Department of Education and the California Collaborative for Educational Excellence.



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Levels of Professional Development to Reach Implementation

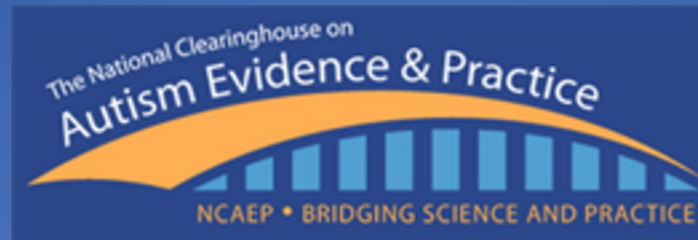


This is a Workshop/Training and is designed to increase your KNOWLEDGE of the topic. Implementation supports to assist you with use of this EBP will be outlined following the TRAINING/WORKSHOP

Before We Begin...

Please complete the **Pre-Training Survey**
sent to your email

What are Evidence Based Practices?



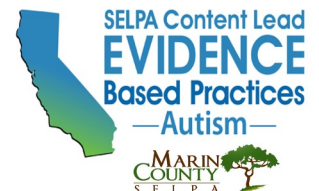
NCAEP definition of an EBP:

“Focused intervention practices that have evidence of efficacy in promoting positive outcomes for learners with Autism.”

Steinbrenner, J. R., Hume, K., Odom, S. L., Morin, K. L., Nowell, S. W., Tomaszewski, B., Szendrey, S., McIntyre, N. S., Yücesoy-Özkan, S., & Savage, M. N. (2020). Evidence-based practices for children, youth, and young adults with Autism. The University of North Carolina at Chapel Hill, Frank Porter Graham Child Development Institute, National Clearinghouse on Autism Evidence and Practice Review Team.



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Evidence Based Practice Matrix (28 EBPs)

Table 3.7 Matrix of evidence-based practices, outcomes, and age categories

| Evidence-Based Practices See Table 3.1 to link abbreviations to EBPs | Academic/Pre-academic | | | Adaptive/Self-help | | | Challenging/Interfering behavior | | | Cognitive | | | Communication | | | Joint attention | | | Mental health | | | Motor | | | Play | | | School readiness | | | Self-determination | | | Social | | | Vocational | | |
|---|-----------------------|------------|-------------|--------------------|------------|-------------|----------------------------------|------------|-------------|-----------|------------|-------------|---------------|------------|-------------|-----------------|------------|-------------|---------------|------------|-------------|-----------|------------|-------------|-----------|------------|-------------|------------------|------------|-------------|--------------------|------------|-------------|--------|--|--|------------|--|--|
| | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | 0-5 years | 6-14 years | 15-22 years | | | | | | |
| ABI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| AAC | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| BMI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CBIS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| DTT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| EXT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FBA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| FCT | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MMI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| NI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PII | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PBII | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PP | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| R | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| RIR | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SI | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SN | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| SST | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TA | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TAII | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| TD | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VM | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| VS | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Selecting EBPs

Before beginning a new practice with a learner, it is important to follow four planning steps

1. Identify the behavior
2. Collect baseline data on the behavior
3. Establish an observable and measurable goal
4. Choose an EBP
 - Consider the child and family characteristics
 - Consider the teacher and team characteristics
 - Consider other available resources

High Quality Training:

Autism Focused Intervention Resources and Modules (AFIRM)

Designed to help you learn the step-by-step process of planning for, using, and monitoring EBPs with learners with Autism from birth to 22 years of age



Autism Focused Intervention
Resources & Modules

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[AFIRM Modules](#)

[Timely Toolkits](#)

[Earn CE Credits](#)

[Selecting EBPs](#)

[Resources](#)

AAA

Technology-aided Instruction and Intervention

Technology-aided Instruction and Intervention (TAII)

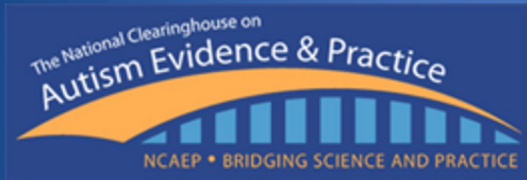


Technology-aided instruction and intervention refers to instruction or intervention in which technology is the central feature supporting the acquisition of a goal for the learner.

Core Components: Learning Objectives

- Define evidence-based practices
- Define Technology-aided Instruction and Intervention
- Identify different types of TAI and goals that can be addressed
- Describe exploration and initial implementation of TAI
- Policy considerations before implementation
- Learn how to use the EBP Implementation Brief

Evidence Based for TAII Across Ages and Domains



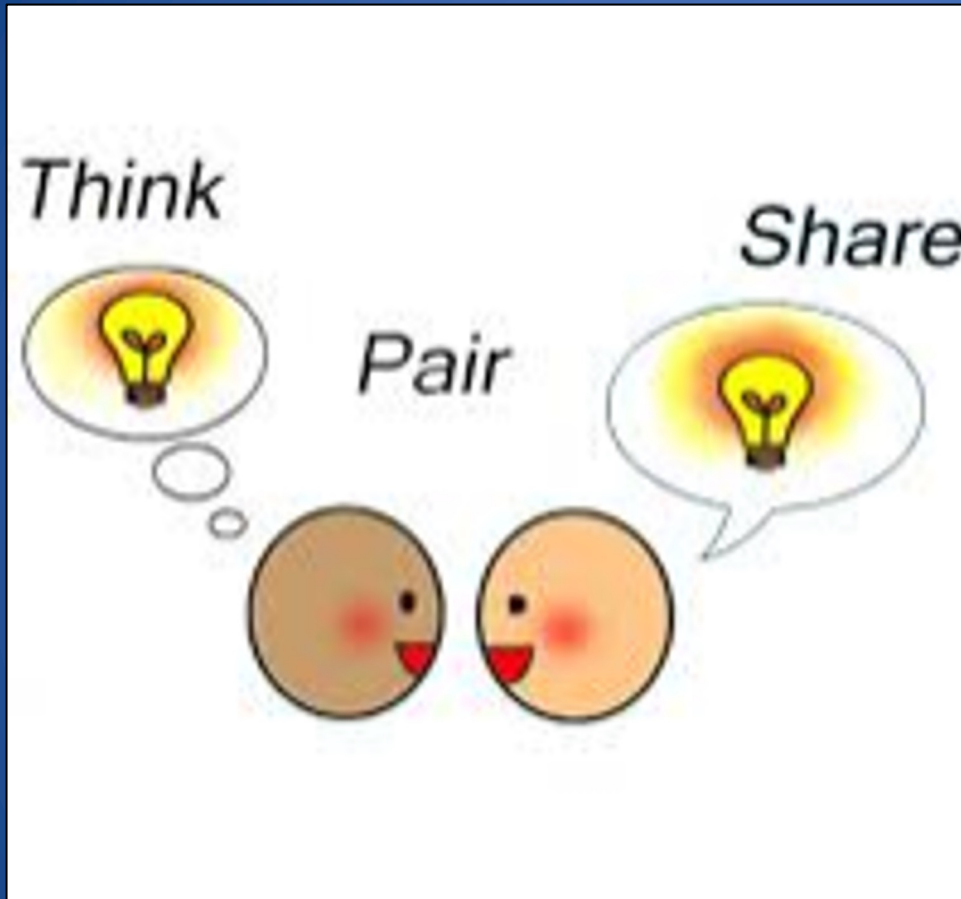
| Name of EBP | | Technology-Aided Instruction and Intervention (TAII) | | | | | |
|--------------------|----------------------------------|---|--------------|-------------------|---------------|-------------|--------------|
| Definition of EBP | | <p>Technology-Aided Instruction and Interventions (TAII) are those in which technology is the central feature of an intervention. Given the rapid rise in the inclusion of technology in interventions, this evidence base is more focused to include technology that is specifically designed or employed to support the learning or performance of a behavior or skill for a learner. Interventions that use a more general form of technology to deliver an alternative EBP (e.g., displaying a visual support on a mobile device, video modeling, alarm on a phone as part of self-management) are not included in this evidence base. TAII includes technologies such as robots, computer or web-based software, applications for devices, and virtual networks. The common features of these interventions are the technology itself (as noted) and instructional procedures for learning to use the technology or supporting its use in appropriate contexts.</p> <ul style="list-style-type: none"> Manualized Interventions Meeting Criteria: MindReading software, FaceSay™ (Symbionica, LLC) software Note: Augmentative and alternative communication (AAC) that incorporates technology is part of the evidence base for AAC and not TAII. | | | | | |
| Outcome Areas | | Age Ranges | | | | | |
| | | 0-2 | 3-5 | 6-11 | 12-14 | 15-18 | 19-22 |
| | | Toddlers | Preschoolers | Elementary School | Middle School | High School | Young Adults |
| Communication | Communication | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Social | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Joint attention | | ✓ | ✓ | ✓ | ✓ | ✓ |
| | Play | | ✓ | ✓ | | | |
| Cognitive | Cognitive | ✓ | ✓ | ✓ | ✓ | ✓ | |
| | School readiness | | ✓ | ✓ | ✓ | ✓ | |
| | Academic/Pre-academic | | ✓ | ✓ | ✓ | ✓ | ✓ |
| Adaptive/self-help | Adaptive/self-help | ✓ | ✓ | ✓ | | | ✓ |
| | Challenging/Interfering behavior | | ✓ | ✓ | ✓ | | |
| | Vocational | | | | | | |
| | Motor | ✓ | ✓ | ✓ | | | |
| Mental health | Mental health | | ✓ | ✓ | ✓ | | |
| | Self-determination | | | | | | |



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Think - Pair - Share



Share/discuss the benefits of using EBPs.

What information did you gain from reviewing the TAI intervention fact sheet.



Goals Addressed by TAI

Goals to increase:

- Accuracy of Spelling
- Adaptive/ Life Skills
- Communication (Sgd)
- Emotional Regulation
- Motivation
- Vocabulary Acquisition
- Engagement
- Face Recognition
- Independence
- Transitioning
- Knowledge Acquisition
- Organization skills
- Social Skills
- Task Completion
- Self-injurious behavior

How can TAI support independence?

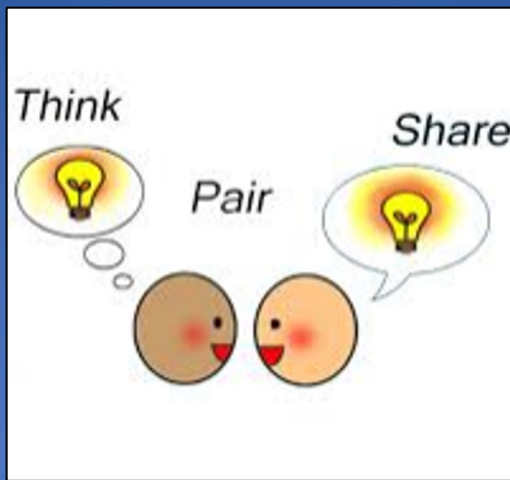


Allows learners with Autism to:

- work at their own pace,
- work at their own level of understanding,
- repeat lessons until mastery is achieved,
- reduce social demands, and
- provide a communication system.



Allowing learners to use a computer and headphones to complete assignments can help keep them on task by blocking out the competing sounds and distractions in the classroom.



Checking In

Which goals can be addressed with TAIL?

Check all that apply.

- ▶ Increase the number of vocabulary words a learner masters
- ▶ Increase independence while transitioning to a new task
- ▶ Improve social skills
- ▶ Increase communication

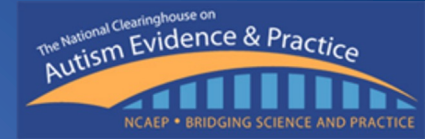
Who can implement TAI?

Teachers, special educators, therapists, paraprofessionals and early interventionist in educational and community-based environments.



Parents/ family members can also use TAI in the home.

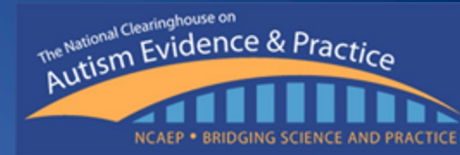
What is Technology-aided Instruction and Intervention (TAII)



- TAII are those in which technology is the central feature of an intervention.
- Focused to include technology that is specifically designed or employed to support the learning or performance of a behavior or skill for a learner.
- Includes technologies such as robots, computer or web-based software, applications for devices, and virtual networks. The common features of these interventions are the technology itself (as noted) and instructional procedures for learning to use the technology or supporting its use in appropriate contexts.

What is TAII?

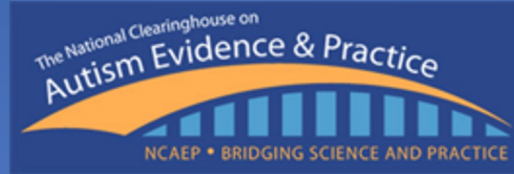
(Continued)



- Interventions that use a more general form of technology to deliver an alternative EBP (e.g., displaying a visual support on a mobile device, video modeling, alarm on a phone as part of self-management) **are not included in this evidence base.**
- Augmentative and alternative communication (AAC) that incorporates technology is part of the evidence base for AAC and not TAII.
- Manualized Interventions Meeting Criteria: MindReading software, FaceSay™ (Symbionica, LLC) software are part of TAII

The TAI MIMCs

Manualized Intervention Meeting Criteria as an EBP (MIMC)



- A MIMC is operationally defined as interventions that a) are manualized, b) have unique features that create an intervention identity, and c) share common features with other practices grouped within the superordinate EBP classification
- Two programs that are grouped within TAI EBP as MIMCs are:
 1. Mindreading (Golan & Baron-Cohen, 2006)
 2. FaceSay® (Hopkins et al., 2011)

To Learn More About These MIMCs:

Note: These two TAI MIMCs do not necessarily have a “manual” but rather have software documentation and sufficient evidence

1. FaceSay® (Hopkins et al., 2011)

Website: [.http://www.facesay.com](http://www.facesay.com)

1. Mindreading (Golan & Baron-Cohen, 2006)

Article:

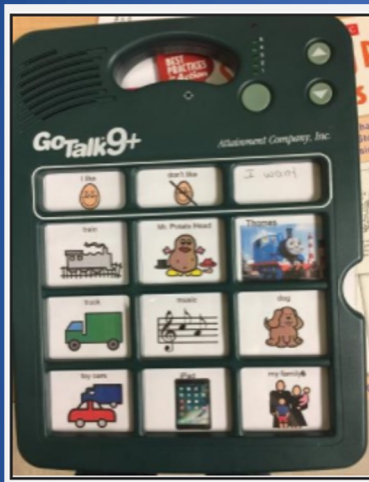
<https://drive.google.com/file/d/1XHP9gZ1CUinPryIAIY1VS0O-W1DC3abi/view?usp=sharing>

What is technology?

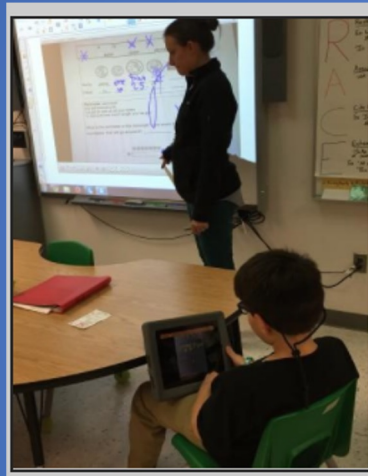
“Any electronic item, equipment, application, or virtual network that is used intentionally to increase/maintain, and/or improve daily living, work/ productivity, and recreation/leisure capabilities of children with Autism”



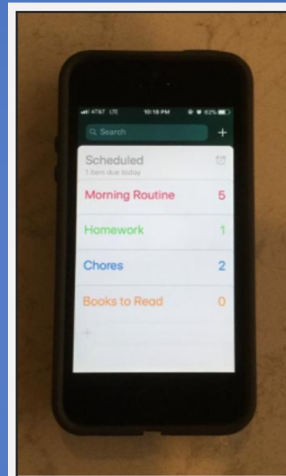
Examples



Speech
Generated Device



Interactive
Whiteboard



Mobile
Device



Computer Assisted
Instruction

Examples

Speech Generated Device- Portable

web-based vocabulary matching game to increase vocabulary acquisition.

Vibrating pager that goes off at the end of a work session to remind the learner to transition to the next work task.

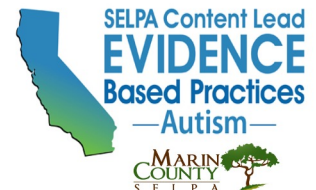
Animated video series such as The Transporters to improve emotion recognition and contextual understanding of emotions.

Speech-generating device to communicate his/her wants and needs.

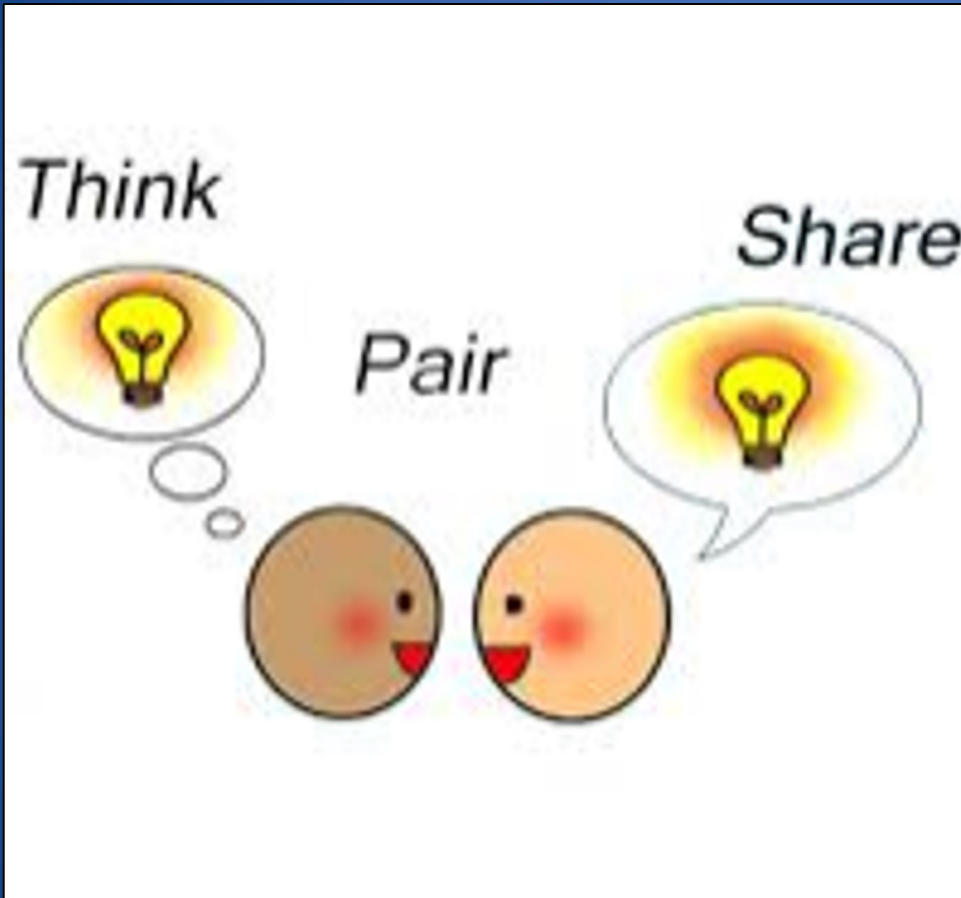
Note: Speech Generated Devices move to Augmentative and Alternative Communication (AAC)



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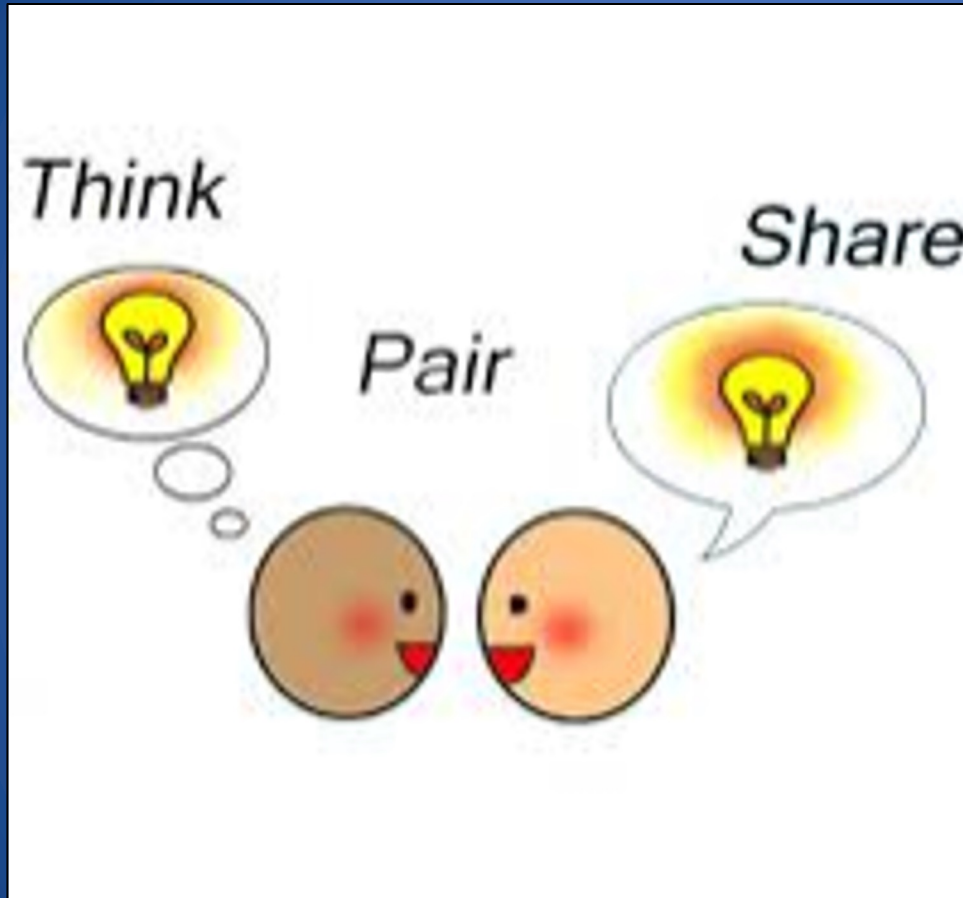


Think - Pair - Share



Discuss the Technology-aided instruction you use in your daily life and how/why they help.

Think - Pair - Share



Discuss a student who uses TAI in your classroom or who is on your caseload and how/why it helps.



Technology-aided Instruction & Intervention (TAII)

---Professional's Guide---

STEPS FOR IMPLEMENTING

1. Plan

- Conduct technology assessment for learner
- Discuss technology preferences with families and learners
- Identify available technology resources
- Review policies/rules concerning the use of technology
- Prepare needed materials
- Inform and train appropriate team members to support learner
- Schedule times to use selected TAII

2. Use

- Teach learner how to use selected TAII
- Review rules with learner of appropriate use
- Provide prompting and reinforcement if needed for using selected TAII
- Ensure the technology is used consistently and across settings

3. Monitor

- Collect data on targeted skills and use of TAII
- Determine next steps based on learner progress

Technology-aided Instruction & Intervention

This tip sheet was designed as a supplemental resource to help provide basic information about the practice.

For more information, visit:






- Identify a behavior
- Collect baseline data through direct observation
- Establish a goal or outcome that clearly states:
 - When the behavior will occur
 - What the target skill is
 - What does it look like when it is achieved

Note: Refer to AFIRM: How to Select an EBP

Use TAI Implementation Checklist



Technology-aided Instruction & Intervention (TAI)
---Implementation Checklist---


Before you start:

Have you...

- Identified the behavior?
- Collected baseline data through direct observation?
- Established a goal or outcome that clearly states **when** the behavior will occur, **what** the target skill is, and **how** the team will know when the skill is mastered.

If the answer to any of these is "no", refer to the "Selecting EBPs" section on the website.

| Observation | 1 | 2 | 3 | 4 |
|--|---|---|---|---|
| Date | | | | |
| Observer's Initials | | | | |
| Step 1: Planning | | | | |
| 1.1 Conduct technology assessment for learner | | | | |
| 1.2 Discuss technology preferences with families and learners | | | | |
| 1.3 Identify available technology resources | | | | |
| 1.4 Review policies/rules concerning the use of technology | | | | |
| 1.5 Prepare needed materials | | | | |
| 1.6 Inform and train appropriate team members to support learner | | | | |
| 1.7 Schedule times to use selected TAI | | | | |
| Step 2: Using | | | | |
| 2.1 Teach learner how to use selected TAI | | | | |
| 2.2 Review rules with learner of appropriate use | | | | |
| 2.3 Provide prompting and reinforcement if needed for using selected TAI | | | | |
| 2.4 Ensure the technology is used consistently and across settings | | | | |
| Step 3: Monitoring | | | | |
| 3.1 Collect and analyze data on performance of target behavior | | | | |
| 3.2 Determine next steps based on learner progress | | | | |



Autism Focused Intervention Resources and Modules

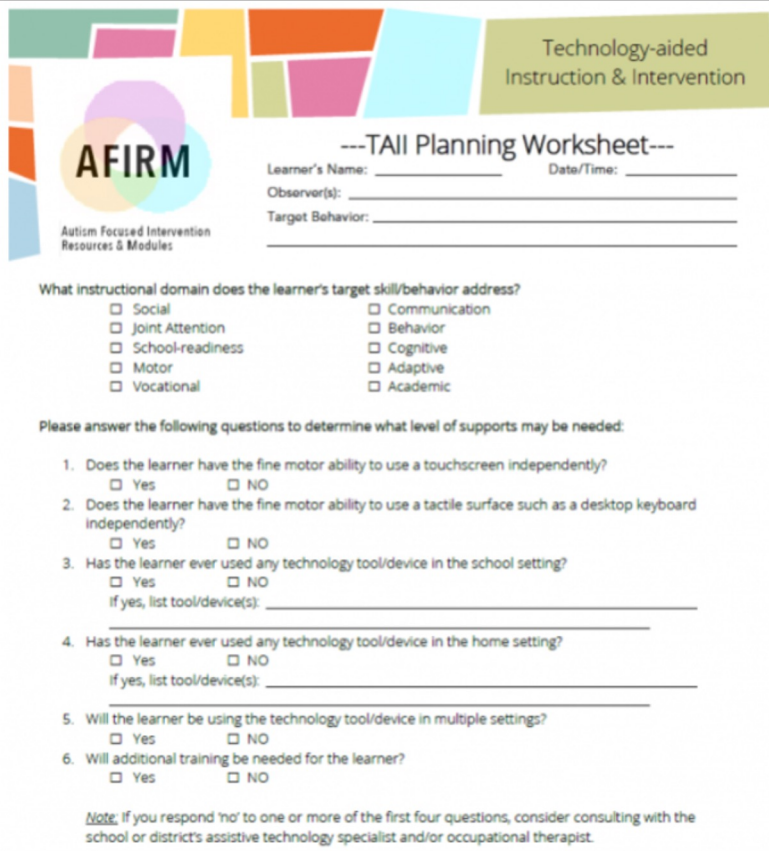
TAll Implementation Checklist

STEP 1: Planning

| | Observation | 1 | 2 | 3 |
|-------------------------|--|---|---|---|
| | Date | | | |
| | Observer's Initials | | | |
| Step 1: Planning | | | | |
| 1.1 | Conduct technology assessment for learner | | | |
| 1.2 | Discuss technology preferences with families and learners | | | |
| 1.3 | Identify available technology resources | | | |
| 1.4 | Review policies/rules concerning the use of technology | | | |
| 1.5 | Prepare needed materials | | | |
| 1.6 | Inform and train appropriate team members to support learner | | | |
| 1.7 | Schedule times to use selected TAll | | | |

Planning

1.1 Conduct Technology Assessment for Learner How? By using the TAI Planning Worksheet



The image shows a worksheet titled "Technology-aided Instruction & Intervention" and "---TAI Planning Worksheet---". It includes a logo for AFIRM (Autism Focused Intervention Resources & Modules) and a section for "What instructional domain does the learner's target skill/behavior address?". Below this is a list of six questions to determine the level of supports needed, each with a "Yes" or "No" checkbox and a space to list tools or devices if applicable. A note at the bottom states: "Note: If you respond 'no' to one or more of the first four questions, consider consulting with the school or district's assistive technology specialist and/or occupational therapist."

Technology-aided Instruction & Intervention

AFIRM
Autism Focused Intervention Resources & Modules

---TAI Planning Worksheet---

Learner's Name: _____ Date/Time: _____
Observer(s): _____
Target Behavior: _____

What instructional domain does the learner's target skill/behavior address?

| | |
|---|--|
| <input type="checkbox"/> Social | <input type="checkbox"/> Communication |
| <input type="checkbox"/> Joint Attention | <input type="checkbox"/> Behavior |
| <input type="checkbox"/> School-readiness | <input type="checkbox"/> Cognitive |
| <input type="checkbox"/> Motor | <input type="checkbox"/> Adaptive |
| <input type="checkbox"/> Vocational | <input type="checkbox"/> Academic |

Please answer the following questions to determine what level of supports may be needed:

1. Does the learner have the fine motor ability to use a touchscreen independently?
 Yes NO
2. Does the learner have the fine motor ability to use a tactile surface such as a desktop keyboard independently?
 Yes NO
3. Has the learner ever used any technology tool/device in the school setting?
 Yes NO
If yes, list tool/device(s): _____
4. Has the learner ever used any technology tool/device in the home setting?
 Yes NO
If yes, list tool/device(s): _____
5. Will the learner be using the technology tool/device in multiple settings?
 Yes NO
6. Will additional training be needed for the learner?
 Yes NO

Note: If you respond 'no' to one or more of the first four questions, consider consulting with the school or district's assistive technology specialist and/or occupational therapist.

Planning

1.2 Discuss Technology Preferences with the Learner and Family Members

As part of your information gathering to help with planning, speak with the learner directly and/or with the learner's family to find out what types of technology the learner uses at home, technology preferences, and learner's behavior using technology at home.



Planning

1.3 Identify Available Technology Resources

- Make a list of the tools available in the classroom. For example, do you have a computer, laptop, or tablet in the classroom?
- Think about what tools may be available within the school building. For example, does the media center have tablets or laptops they loan out to classrooms?
- After exploring school resources, investigate resources available within the district. Does your district have an assistive technology person/center?
- Consider AT on the student's IEP to access needed technology to access the curriculum and derive educational benefit.

Planning

1.3 Identify Available Technology Resources

How?
Use the
TAll Planning
Form

Technology-aided
Instruction & Intervention

Identify available technology resources:

| Location | Available Options | Notes |
|--|---|-------|
| <input type="checkbox"/> Classroom | <input type="checkbox"/> Desktop <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Whiteboard <input type="checkbox"/> Other: | |
| <input type="checkbox"/> School | <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Other: | |
| <input type="checkbox"/> District | <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Other: | |
| <input type="checkbox"/> Home/Personal | <input type="checkbox"/> Desktop <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Mobile device <input type="checkbox"/> Other: | |

What if there are no technologies available?

| Questions | Available | Notes |
|--|---|-------|
| <i>Are there funds available to purchase technology?</i> | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| <i>Is there a state or local technology lending library?</i> | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

Planning

1.4 Review Applicable Policies/Rules Regarding the Use of Technology

How?
Use the TAIL
Planning Form

Technology-aided Instruction & Intervention

Identify policies/rules regarding the use of technology:

| Questions | Applicable | Policies/Rules |
|---|---|----------------|
| Are there any classroom rules regarding technology use? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Are there any school rules/policies regarding technology use? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Are there any district policies regarding technology use? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Does the learner's family have any rules/preferences regarding use of technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

Prepare materials:

| Questions | Applicable | Notes |
|---|---|-------|
| Are any other materials needed to facilitate use of the technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Are visual supports needed to help the learner use the technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Do written directions need to be provided on how to use the technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

Continue →

Planning

1.5 Prepare Needed Materials

In addition to the technology tool you have selected, you may want to consider some additional materials to help support the learner's use of the selected technology.

Considerations for preparing materials:

- Are any other materials needed to facilitate use of the technology?
- Are visual supports needed to help the learner use the technology?
- Do written directions need to be provided on how to use the technology?

For example:

- if using a tablet, a special bumper case may be needed to help protect it from damage if it is dropped
- screen protectors can help protect screens from damage
- tracking tools can be used to help locate a missing device
- visual supports might be helpful to remind the learner the basic steps to access the specific functions needed to use the TAIL



Quick Tip

If the learner needs additional instructions to use technology, please visit the [Task Analysis](#) module, the [Visual Supports](#) module, and/or the [Modeling](#) module.

Planning

1.6 Identify, inform and train appropriate team members to support learner; train learner

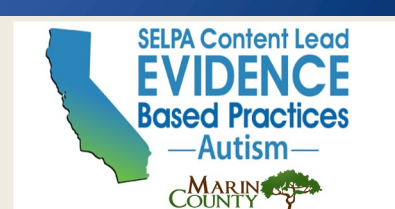
How?

Use the TAI Planning Form

| Team Members | Notes |
|--|-------|
| <input type="checkbox"/> Learner | |
| <input type="checkbox"/> Family Member(s): _____ _____ | |
| <input type="checkbox"/> Special education | |
| <input type="checkbox"/> General education | |
| <input type="checkbox"/> Specials (e.g., PE, music, library, computer, etc.) | |
| <input type="checkbox"/> Paraprofessionals/Teacher Assistants | |
| <input type="checkbox"/> Speech therapist | |
| <input type="checkbox"/> Occupational therapist | |
| <input type="checkbox"/> Physical therapist | |
| <input type="checkbox"/> Lunchroom workers | |
| <input type="checkbox"/> Custodians | |
| <input type="checkbox"/> Other(s): _____ | |



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Planning

1.7 Schedule Times to Use TAI

How?

Use the TAI Planning Form

Identify times to use TAI:

| Daily Schedule | Monday | Tuesday | Wednesday | Thursday | Friday |
|----------------|--------|---------|-----------|----------|--------|
| Class: | | | | | |
| Class: | | | | | |
| Class: | | | | | |
| Class: | | | | | |
| Class: | | | | | |
| Class: | | | | | |
| Class: | | | | | |
| Lunch | | | | | |
| Other: | | | | | |
| Other: | | | | | |

TAll Implementation Checklist

Step 2: Using

Step 2: Using

2.1 Teach learner how to use selected TAll

2.2 Review rules with learner of appropriate use

2.3 Provide prompting and reinforcement if needed for using selected TAll

2.4 Ensure the technology is used consistently and across settings







| | | | | |
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| | | | | |

Using

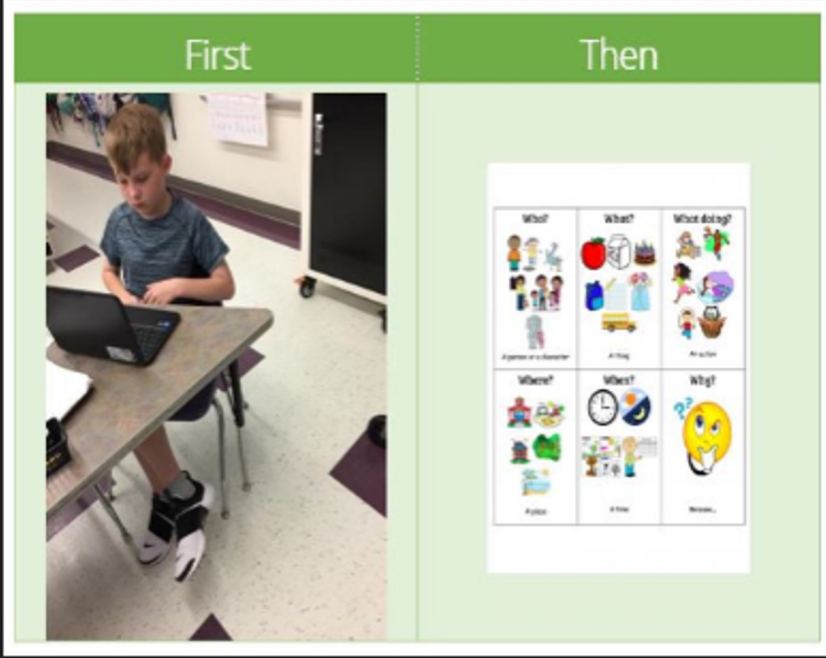
2.1 Teach Learner How to Use Selected TAI

- It is important to teach learners how to use the selected technology tool for the identified goal.
- Some learners may start using TAI independently without much practice, other learners may struggle with how to use TAI for the identified goal.
- EBPs that can support learners in using technology include:
 - Task Analysis
 - Visual Supports
 - Modeling

Example: Task Analysis

| EBP | When to use | Example |
|---------------|--|--|
| Task Analysis | Increase learners' ability to access a specific computer program or app on a mobile device | <p>HOW TO MAKE A VIDEO</p> <ol style="list-style-type: none"> 1. Touch  Camera 2. Take cover off the camera lens on the back of the iTouch 3. Slide the  from "camera" to "video" 4. Hold the iTouch up to the person, place or thing you are taking a video of 5. When you are ready touch  6. Touch  when you are done taking the video 7. Touch  or  on the home screen to see the video you took |

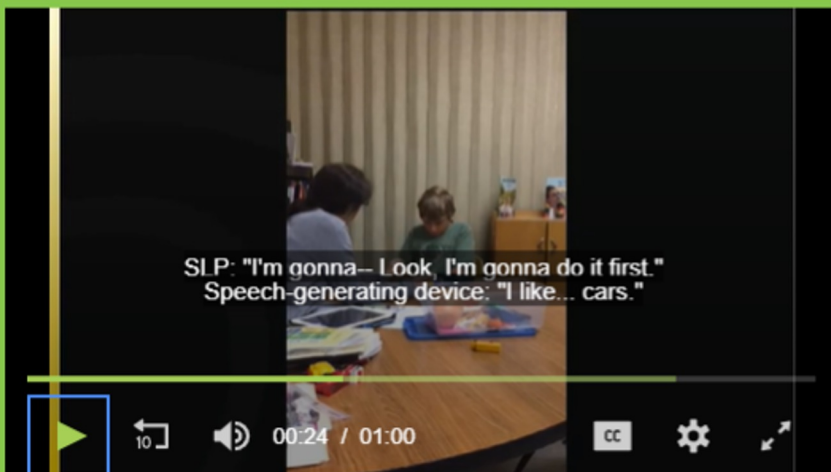
Example: Visual Supports

| EBP | When to use | Example |
|------------------------|---|--|
| <p>Visual Supports</p> | <p>Increase learners' understanding of the technology tool being used for instruction or intervention</p> |  |

Example: Modeling



Video Story: Model Using Selected Technology



▶ Video Transcript

Key Points

- Focus on the learner with ASD in the green shirt
- Notice how the speech language pathologist models using the speech-generating device
- *Video Credit: The TESELA Project*

<https://afirm.fpg.unc.edu/resources/use-taii-teach-learner-use-technology>

Using

2.2 Review Rules With Learner of Appropriate Use

- Now is the time to review the classroom, school, and/or district technology policies you identified during the planning steps with the learner.
 - For example, if the technology tool you are providing has open access to the internet, you will need to review rules about what kinds of websites learners are permitted to visit.
- Make sure other staff and/or substitute teachers are informed that the learner has permission to use the technology, at what times, and for what purpose. If needed, provide demonstrations of its use to other staff.

Using

2.3 Provide Prompting and Reinforcement if Needed for Using Selected TAI

- In many cases, using a technology tool can be motivating for learners with Autism so prompting and reinforcement may not be needed.
- However, using technology devices with multiple functions (such as the ability to surf the web, access games and videos) may create a challenge in keeping some learners focused on the particular skill or task.
- Using prompting and reinforcement initially can be helpful (See AFIRM for more info on these EBPS)

Using

2.3 Provide Prompting and Reinforcement if Needed for Using Selected TAI (Continued)

- When teaching a learner how to use a speech-generating device to make a request, be sure to provide them with a reinforcer every time the speech-generating device is used to make a request.
 - This reinforcement increases the likelihood the student will continue to use the device to express their wants and needs.
- If you do decide to use reinforcement to motivate use of the TAI, be sure to have a plan for thinning that reinforcement over time to increase independence.
 - For example, you can move from using a continuous schedule of reinforcement to an intermittent schedule of reinforcement.

Using 2.4 Ensure the Technology is Used Consistently and Across Settings

- Observe or get feedback on use in various settings or get (e.g, classrooms, recess, the cafeteria, and the home setting if applicable.)
- Use the TAI Anecdotal Data Collection form to collect data from others

Technology-aided Instruction & Intervention (TAI)

AFIRM
Autism Focused Intervention Resources & Modules

---TAI Anecdotal Notes---

Learner's Name: _____ Date/Time: _____
Observer(s): _____
Target Behavior(s): _____

Anecdotal Notes:

| Date | Time | Notes |
|------|--|-------|
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
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| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |

Using

2.4 Ensure the Technology is Used Consistently and Across Settings

(continued)

- Review data to see if adjustments should be made:
 - For example, if a tablet is being used as a speech-generating device in the main classroom but not in art class, you may need to spend time with the art teacher and demonstrate ways to incorporate its use in that classroom.
 - You could also video the learner using the device in different settings or model using it with the learner in the art classroom, to help the art teacher feel more comfortable with incorporating its use into that particular setting.

TAll Implementation Checklist

Step 3: Monitoring

Step 3: Monitoring

3.1 Collect and analyze data on performance of target behavior

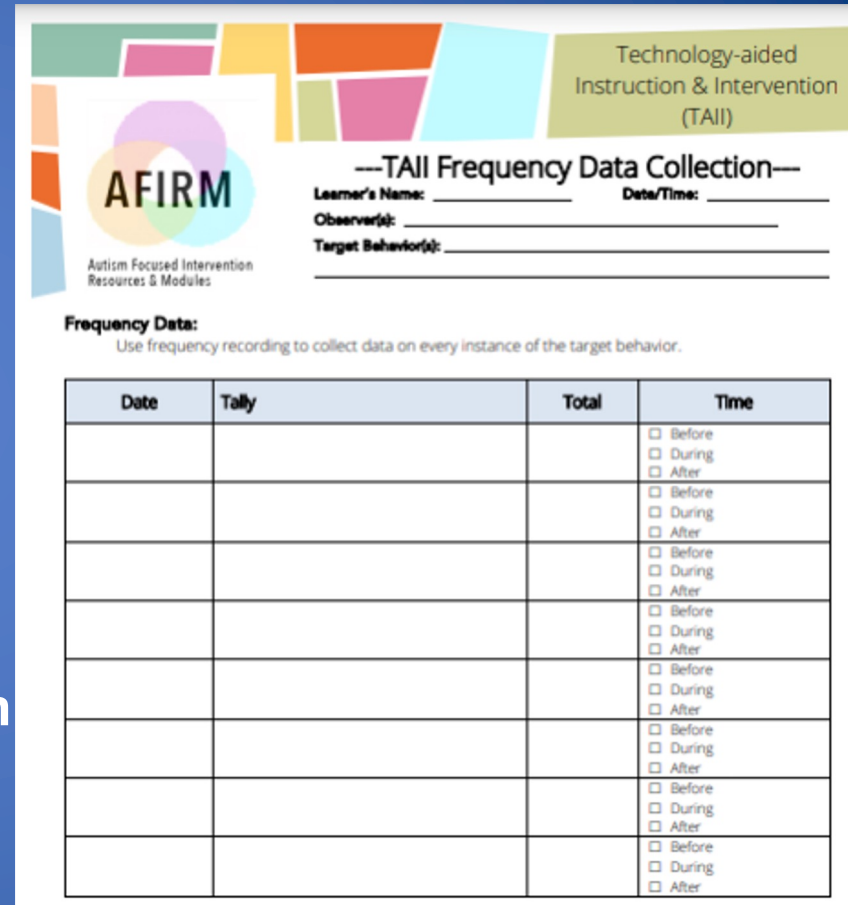
3.2 Determine next steps based on learner progress

| | | | | |
|--|--|--|--|--|
| | | | | |
| | | | | |

Monitoring

3.1 Collect and Analyze Data on Performance of Target Behavior

- Collect data with the same data collection forms used to establish your baseline before you began using TAI.
 - Using the same data collection forms allows team members to track a learner's use of the target skill/behavior before, during, and after TAI is implemented.
- Use **TAI Frequency Data Collection** form to collect data on the number of times a behavior occurs.



The form is titled "Technology-aided Instruction & Intervention (TAI)" and "TAI Frequency Data Collection". It includes fields for "Learner's Name", "Date/Time", "Observer(s)", and "Target Behavior(s)". Below these is a section for "Frequency Data" with a table for recording instances of behavior. The table has columns for "Date", "Tally", "Total", and "Time". The "Time" column has checkboxes for "Before", "During", and "After".

Technology-aided Instruction & Intervention (TAI)

---TAI Frequency Data Collection---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Behavior(s): _____

Frequency Data:
Use frequency recording to collect data on every instance of the target behavior.

| Date | Tally | Total | Time |
|------|-------|-------|--|
| | | | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After |
| | | | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After |
| | | | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After |
| | | | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After |
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| | | | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After |
| | | | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After |

Monitoring

3.1 Collect and Analyze Data on Performance of Target Behavior

(continued)

- The **TAI Anecdotal Notes** form is another tool that can be used to assist multiple users in collecting information about the learner's target behavior.
- This form could be used in addition to other types of data collection forms to provide more information
- Consider using an anecdotal data collection form to collect data from others regarding use in different settings.

Technology-aided Instruction & Intervention (TAII)

AFIRM
Autism Focused Intervention Resources & Modules

—TAII Anecdotal Notes—
Learner's Name: _____ Date/Time: _____
Observer(s): _____
Target Behavior(s): _____

Anecdotal Notes:

| Date | Time | Notes |
|------|--|-------|
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |
| | <input type="checkbox"/> Before <input type="checkbox"/> During <input type="checkbox"/> After | |

Monitoring

3.2 Determine Next Steps Based on Learner Progress

- Work with team members to determine if sufficient progress is being made based upon the data collected.
- If the learner with Autism is not using TAI independently, continue to use additional practices to support use of TAI, but fade those supports gradually.
- If the learner is showing progress and using TAI independently, then continue to use TAI and put a plan in place to fade the technology support if appropriate.
- Review the collected data with team members to determine if any adjustments are needed.

Monitoring

3.2 Determine Next Steps Based on Learner Progress (continued)

What if the learner with ASD is not showing progress with TAI?

If the learner with ASD is not showing progress with technology-aided instruction and intervention, ask yourself the following questions:

- Is the target skill or behavior well defined?
- Is the skill or behavior measurable and observable?
- Is the skill or behavior too difficult for the learner?
- Was TAI used with fidelity (see Implementation Checklist)?
- Is the student motivated by technology use?
- Is the selected technology tool appropriate for the selected goal?
- Is the selected technology tool too difficult for the learner to use?
- Are all team members using/supporting TAI in a consistent manner?



If these issues have been addressed and the learner with Autism continues to not show progress, consider selecting a different EBP to use with the learner with Autism.



Checking In



Mr. Rashid was using an event data collection form to track Sonia's use of her iPad to remind her to complete her homework assignments. He sent home the sheet and asked her mother to check off when Sonia completed her homework after being reminded by the iPad and without any prompting from her mother. There were three days this past week with no check marks on the event sampling form. Therefore, Mr. Rashid decided to provide Sonia's mother with an anecdotal form to use in addition to the event sampling data collection sheet and asked her to note down what was happening when Sonia ignored the reminder and did not complete her homework.

Did Mr. Rashid do the right thing or should he try another EBP since the event sampling data showed the TAI was not working?

- ▶ Yes
- ▶ No

Practice with Feedback

<https://afirm.fpg.unc.edu/resources/taii-planning-worksheet-pdf>



Technology-aided
Instruction & Intervention

---Planning Worksheet---

Learner's Name: _____ Date/Time: _____

Observer(s): _____

Target Behavior: _____

What instructional domain does the learner's target skill/behavior address?

| | |
|---|--|
| <input type="checkbox"/> Social | <input type="checkbox"/> Communication |
| <input type="checkbox"/> Joint Attention | <input type="checkbox"/> Behavior |
| <input type="checkbox"/> School-readiness | <input type="checkbox"/> Cognitive |
| <input type="checkbox"/> Motor | <input type="checkbox"/> Adaptive |
| <input type="checkbox"/> Vocational | <input type="checkbox"/> Academic |

Please answer the following questions to determine what level of supports may be needed:

- Does the learner have the fine motor ability to use a touchscreen independently?

 Yes No
- Does the learner have the fine motor ability to use a tactile surface such as a desktop keyboard independently?

 Yes No
- Has the learner ever used any technology tool/device in the school setting?

 Yes No

If yes, list tool/device(s): _____
- Has the learner ever used any technology tool/device in the home setting?

 Yes No

If yes, list tool/device(s): _____
- Will the learner be using the technology tool/device in multiple settings?

 Yes No
- Will additional training be needed for the learner?

 Yes No

Note: If you respond 'no' to one or more of the first four questions, consider consulting with the school or district's assistive technology specialist and/or occupational therapist.

Technology-aided
Instruction & Intervention

Identify available technology resources:

| Location | Available Options | Notes |
|--|---|-------|
| <input type="checkbox"/> Classroom | <input type="checkbox"/> Desktop <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Whiteboard <input type="checkbox"/> Other: | |
| <input type="checkbox"/> School | <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Other: | |
| <input type="checkbox"/> District | <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Other: | |
| <input type="checkbox"/> Home/Personal | <input type="checkbox"/> Desktop <input type="checkbox"/> Laptop <input type="checkbox"/> Tablet <input type="checkbox"/> Mobile device <input type="checkbox"/> Other: | |

What if there are no technologies available?

| Questions | Available | Notes |
|--|---|-------|
| <i>Are there funds available to purchase technology?</i> | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| <i>Is there a state or local technology lending library?</i> | <input type="checkbox"/> Yes <input type="checkbox"/> No | |



Practice with Feedback

<https://afirm.fpg.unc.edu/resources/taii-planning-worksheet-pdf>

| Technology-aided Instruction & Intervention | | |
|---|---|----------------|
| Identify policies/rules regarding the use of technology: | | |
| Questions | Applicable | Policies/Rules |
| Are there any classroom rules regarding technology use? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Are there any school rules/policies regarding technology use? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Are there any district policies regarding technology use? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Does the learner's family have any rules/preferences regarding use of technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Prepare materials: | | |
| Questions | Applicable | Notes |
| Are any other materials needed to facilitate use of the technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Are visual supports needed to help the learner use the technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |
| Do written directions need to be provided on how to use the technology? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

| Technology-aided Instruction & Intervention | | | | | | |
|--|--------|---------|-----------|----------|--------|--|
| Identify and train team members: | | | | | | |
| Team Members | Notes | | | | | |
| <input type="checkbox"/> Learner | | | | | | |
| <input type="checkbox"/> Family Member(s): _____ | | | | | | |
| <input type="checkbox"/> Special education | | | | | | |
| <input type="checkbox"/> General education | | | | | | |
| <input type="checkbox"/> Specials (e.g., PE, music, library, computer, etc.) | | | | | | |
| <input type="checkbox"/> Paraprofessionals/Teacher Assistants | | | | | | |
| <input type="checkbox"/> Speech therapist | | | | | | |
| <input type="checkbox"/> Occupational therapist | | | | | | |
| <input type="checkbox"/> Physical therapist | | | | | | |
| <input type="checkbox"/> Lunchroom workers | | | | | | |
| <input type="checkbox"/> Custodians | | | | | | |
| <input type="checkbox"/> Other(s): _____ | | | | | | |
| Identify times to use TAI: | | | | | | |
| Daily Schedule | Monday | Tuesday | Wednesday | Thursday | Friday | |
| Class: | | | | | | |
| Class: | | | | | | |
| Class: | | | | | | |
| Class: | | | | | | |
| Class: | | | | | | |
| Class: | | | | | | |
| Lunch | | | | | | |
| Other: | | | | | | |
| Other: | | | | | | |

Implementation Fidelity is Critical!

What does this mean?



“Implementing an intervention in the same manner in which it was done in the evidence-based research”



Implementation Fidelity is Critical!

How implementation fidelity achieved:







1. Use Implementation Checklists for the EBP to capture fidelity of implementation
2. Refer to EBP Fact Sheets
3. Use AFIRM self-learning modules on EBPs
4. Attend training on the EBPs
5. Access coaching on the EBP until fidelity is attained


TAII EBP Brief Packet

<https://afirm.fpg.unc.edu/sites/afirm.fpg.unc.edu/files/imce/resources/TAII%20EBP%20Brief%20Packet.pdf>

Tools for TAI

Additional materials to help you with applying technology-aided instruction and intervention (TAII):

-  Use the [TAII Step-by-Step Practice Guide](#) as an outline for how to plan for, use, and monitor TAI. Each step includes a brief description as a helpful reminder while learning the process.
-  Use the [TAII Implementation Checklist](#) to determine if the practice is being implemented as intended.
-  Use the [TAII Tip Sheet for Professionals](#) as a supplemental resource to help provide basic information about the practice to professionals working with the learner with ASD.
-  Use the [TAII Parent Guide](#) to help parents or family members understand basic information about the practice being used with their child.
-  Use the [Additional Resources](#) to learn more about the practice.
-  The [TAII Brief Packet](#) contains all of the resources and materials about the practice.



Technology-aided Instruction & Intervention (TAII)

Technology-aided Instruction & Intervention (TAII)
---EBP Brief Packet---

Components of the EBP Brief Packet...

This evidence-based practice overview on Technology-aided Instruction & Intervention includes the following components:

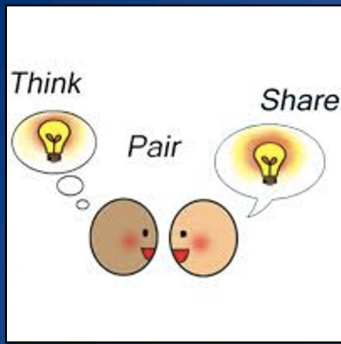
- 1. Overview:** A quick summary of salient features of the practice, including what it is, who it can be used with, what skills it has been used with, and settings for instruction.
- 2. Evidence-base:** The *TAII Evidence-base* details the NPDC criteria for inclusion as an evidence-based practice and the specific studies that meet the criteria for this practice.
- 3. Step-by-Step Guide:** Use the *TAII Step-by-Step Practice Guide* as an outline for how to plan for, use, and monitor TAI. Each step includes a brief description as a helpful reminder while learning the process.
- 4. Implementation Checklist:** Use the *TAII Implementation Checklist* to determine if the practice is being implemented as intended.
- 5. Data Collection Sheets:** Use the data collection sheets as a method to collect and analyze data to determine if progress is being made for a learner with ASD.
- 6. Tip Sheet for Professionals:** Use the *TAII Tip Sheet for Professionals* as a supplemental resource to help provide basic information about the practice to professionals working with the learner with ASD.
- 7. Parent Guide:** Use the *TAII Parent Guide* to help parents or family members understand basic information about the practice being used with their child.
- 8. Additional Resources:** Use the *Additional Resources* to learn more about the practice.
- 9. CEC Standards:** A list of *CEC Standards* that apply specifically to TAI.
- 10. Module References:** A list of numerical *References* utilized for the TAI module.

Suggested citation:
Hedges, S & AFIRM Team. (2018). *Technology-aided Instruction & Intervention*. Chapel Hill, NC: National Professional Development Center on Autism Spectrum Disorders, FPG Child Development Center, University of North Carolina. Retrieved from <http://afirm.fpg.unc.edu/Technology-aided-instruction-and-intervention>

This overview brief will support your use of the evidence-based practice: Technology-aided Instruction & Intervention.

For more information visit:
www.afirm.fpg.unc.edu

Technology-aided Instruction & Intervention National Professional Development Center on ASD 2018 1 of 26



My Takeaways

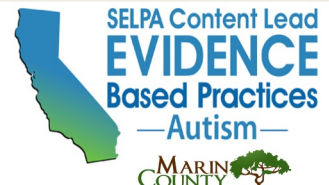
1. What are 4 things you remember from today's training?
1. What are 2 things you see yourself doing?
1. What is the 1 thing you can implement tomorrow?

After the Training...

Please complete the **Post-training Survey**
that will be sent to your email



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