

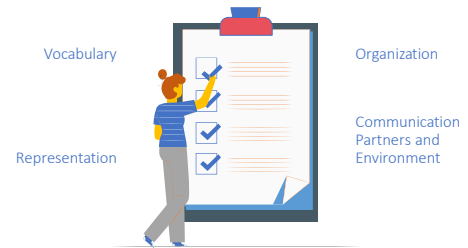


## An Investigation into the Approaches SLPs Use When Determining Access Solutions for Children with Motor Impairments Who Use AAC

Dawn J. Sowers | Doctoral Think Tank | May 10-12, 2022

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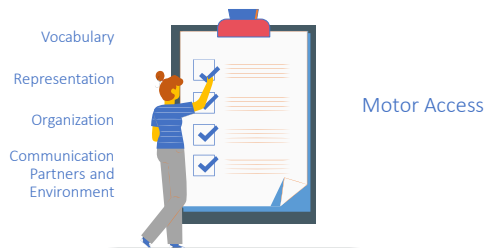
## Best Fit = Best Outcomes



Beukelman & Light, 2020

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Beukelman & Light, 2020

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## Motor access is critical to the success of AAC

- Skilled motor access allows effective interface with the AAC system
- This is a primary mechanism by which a child gains experience in language provided by the AAC system
- Without this integral part, the impact of AAC intervention will be significantly limited

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## Costs

- Prolonged periods focusing on learning the access method
- Mental and physical fatigue
- Communication breakdowns and limited strategies to overcome them



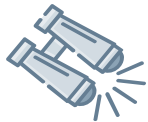
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## Children with Motor Impairments

- Constraints in body function and structure may limit resources for skilled motor access
- Alternative access options may require additional learning and may use less traditional motor movements



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The focus ideally will be on the interaction and the language construction and complexity

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Now that we have talked about why access matters...

Why does the process matter? Isn't the information we have enough?



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Process Matters!

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### Evidence-Based Practice

Stakeholder Perspectives

Research Evidence

Clinical Experience

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### Speech–Language Pathologists

Expert AAC SLP

Binger et al., 2006

Experience, Knowledge & Skills Matter

Deitz et al., 2012

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### Research Questions

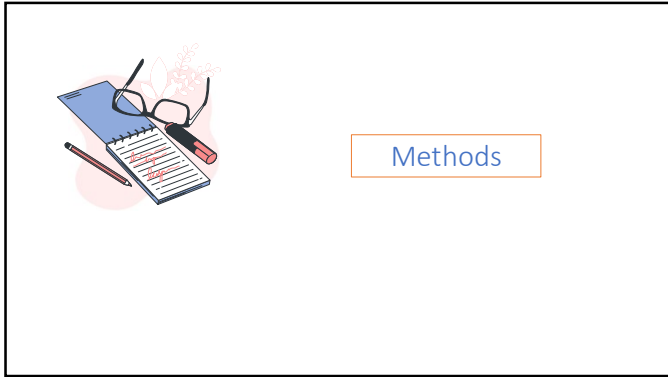
What factors seem to drive their decision-making?

What characteristics of the AAC system do the expert SLPs manipulate to optimize access?

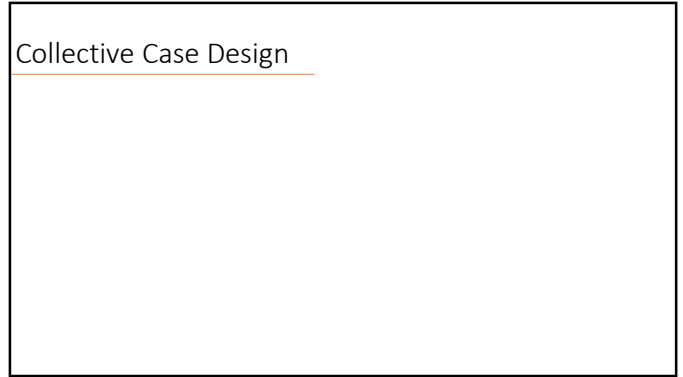
What types of training or sources of information have expert SLPs used to gain knowledge and skills?

How do expert SLPs approach the AAC assessment process for motor access when working with children with motor impairments?

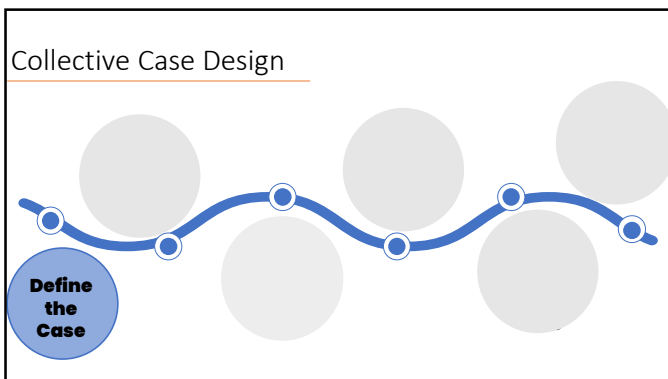
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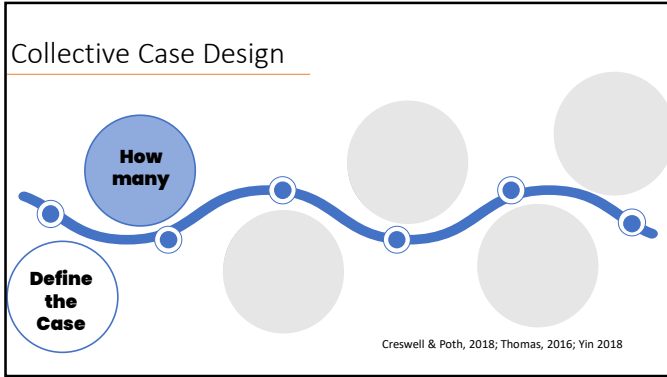


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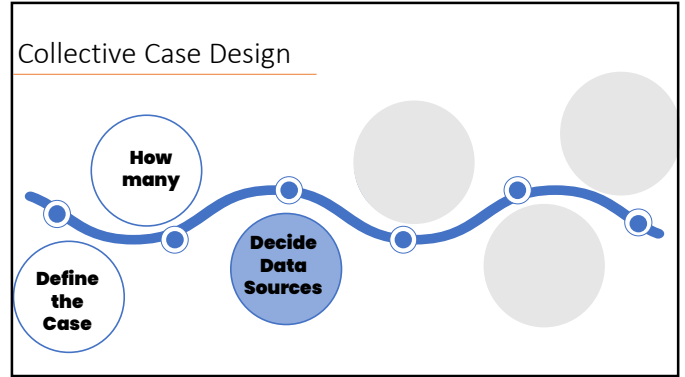
A blue circle on the left contains the text "Define the Case". To its right, a light blue rectangular box contains a list of bullet points:

- Speech Language Pathologist
- 3 years experience
- Works in non-educational setting
- 50% of caseload is AAC
- Experience working with children with motor impairments

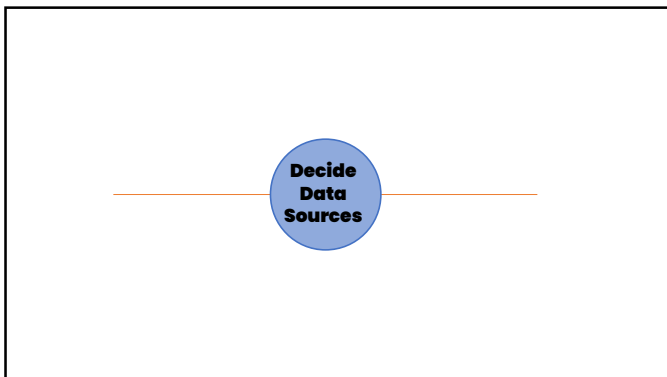
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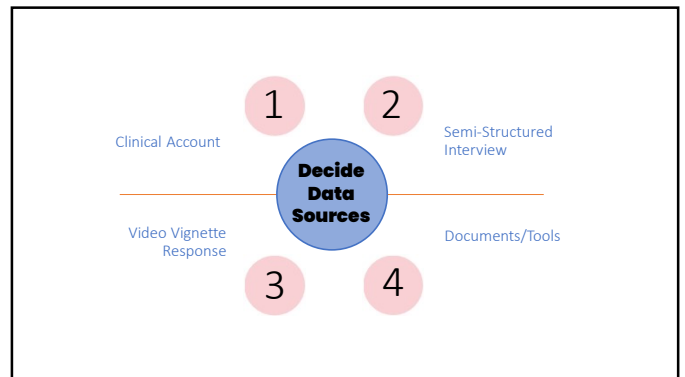
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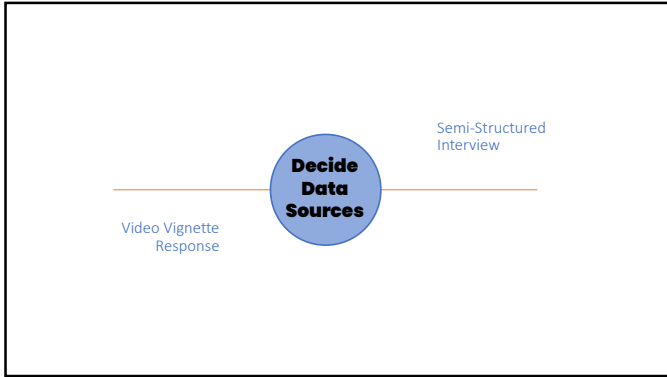
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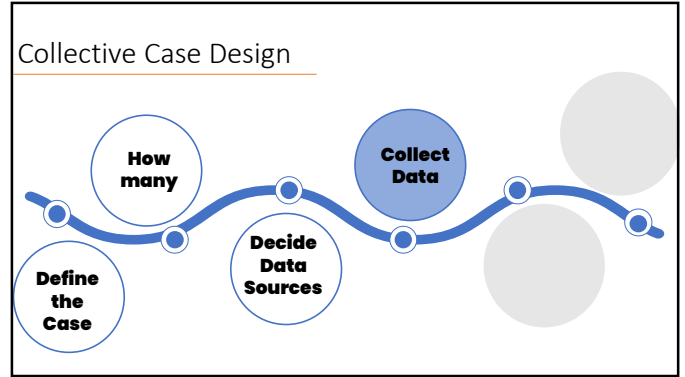
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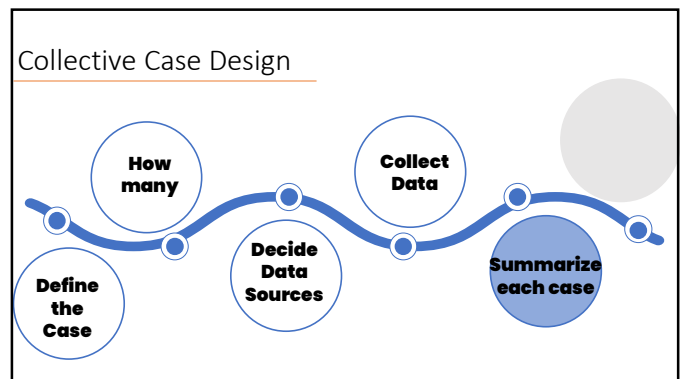


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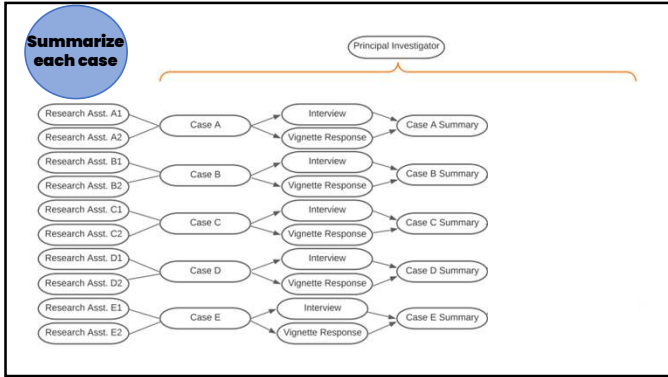
**Collect Data**

- Data was recorded over live videoconference
- 90 – 120 minutes
- Transcribed by Principal Investigator

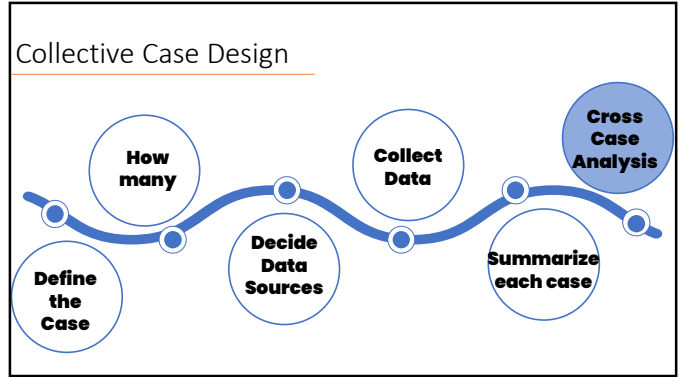
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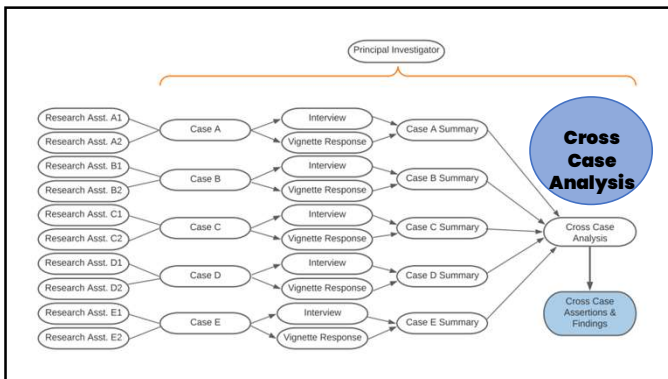
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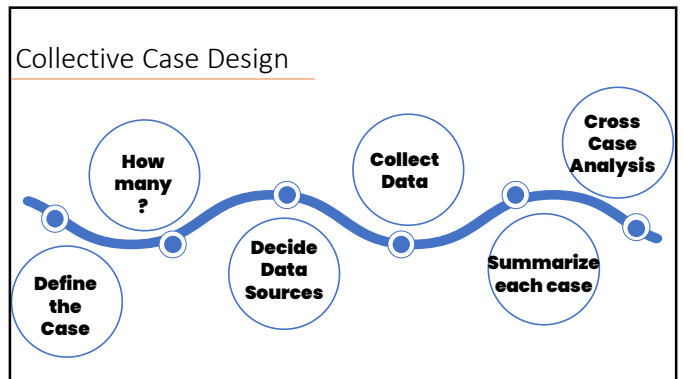
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### Case A



- 01** | Knowledge and skills in switch scanning is possible as an SLP
- 02** | The importance of "accessibility supports" being matched to the individual
- 03** | Promoted incorporating the child's current communication system as a "jumping off point" and place for comparison

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### Case B



- 01** | Meeting criteria of expert doesn't equate to confidence in decision-making
- 02** | Being an independent practitioner brings unique challenges (availability of equipment, other professionals)
- 03** | Mounting and positioning across environments as early consideration

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### Case C




- 01** | Engaging with medical professionals may be important for access success
- 02** | Use of external visual supports to bring attention to area of screen can be useful
- 03** | Only SLP who mentioned a policy barrier influencing process

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### Case D

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**01** | Highlighted need for mentoring and education with over 200 on waitlist for specialty clinic


**02** | She wants children to be able to advocate for themselves about their access equipment and needs

**03** | Discussed partnering with OT and allowing OT to work on access skills in independent sessions

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### Case E

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**01** | Discussed the slow process of coming to do a decision

**02** | Emphasized need for backup methods to meet child and family goals

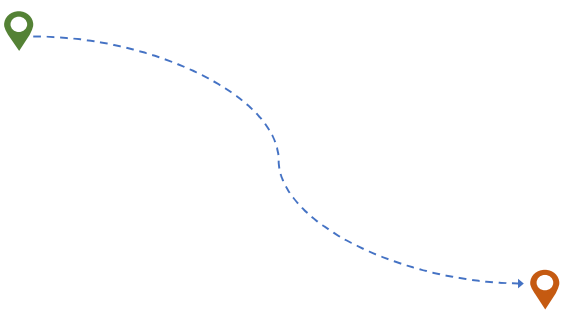
**03** | Offered the most information about teaching strategies including demonstration and explanation

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Results



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Starting Point


- Initial Access Method
- Low tech vs high tech

What is successful access?

Finish Line

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### Successful Access ??



Language or Communication Measures

- Increasing type and frequency of communication
- As much language as possible
- Goals set by family and child

Motor Access

- Accuracy
- Independence
- Effortless
- Comfortable
- Efficient
- Effective
- Consistent
- In the background

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### Education

- Lack of pre-service preparation
- Benefitted from mentorship during career
- Reliance on informal and formal continuing education and networking

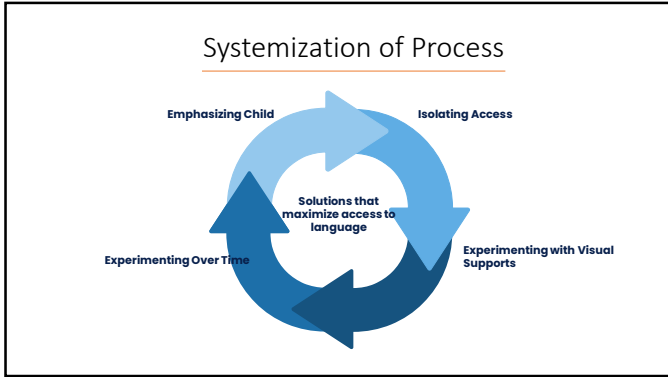
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### The Process

Individually, SLPs described decisions as "best guesses" or "gut instinct" and the process as "trial and error" and "not a formula".

When analyzed across all the cases systemization became evident

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### Emphasizing the Child

- The child’s capabilities drive initial access decisions
- The child’s feedback drives details of the setup
- The child’s (and family’s) preferences drives the recommended solution

As much feedback from our AAC users as we can get because it’s their device and when we can direct feedback from them as to whether or not they like or do not like a feature, then, of course, that trumps all. Barring that, we have to use behavioral indications as to whether a feature increases or decreases communication frustration (SLP A).

You know, I’m here to give the options, but it’s really based on the kid or client and the family (SLP C).

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### Isolating Access

That’s usually the way I like to start just so it’s not muddled with not knowing if it’s just because it’s new. The communication piece is so much more cognitively complex. I like to take that piece of it out first (SLP E).

Early games we are working on the two [switches] to know this one is getting that thing to move around and this one is going to make it reveal or open, you know trying to teach the two separate from language (SLP B).

- SLPs use non-communicative activities to provide experience and practice
- Cognitive “complexity”
- Often finalize positioning and range
- Isolation helps determine access timing and target size

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- Changes to contrast of display background or button background
- Providing highlighting or framing of buttons as intermediary feedback during visual search
- Potential use of selection indicators such as a shrinking dot or clock
- Effort to increase visual attention

I typically... [am] changing the background color of the device to increase the contrast. Fine tuning the specific access features like dwell time and feedback (SLP A)

Give some feedback of some visual, like highlighting ...definitely as part of it. They respond better, but I’ve also had some where that becomes a big distraction (SLP C).

### Experimenting with Visual Supports

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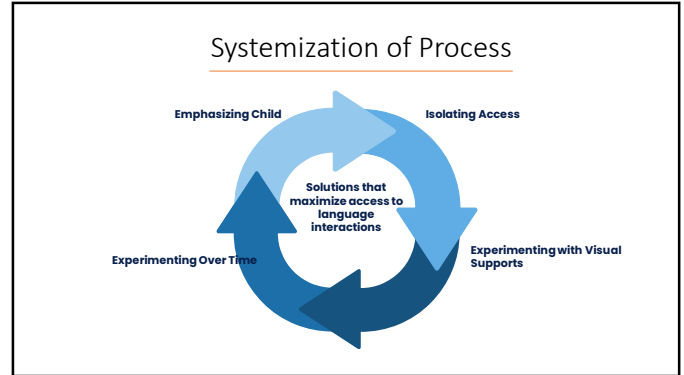
- SLPs did not expect to make a decision during the initial assessment
- Relied heavily on subsequent trials to find optimal access setup as well as balance with language
- Re-evaluation over the long term to make sure access continues to meet current needs

**Experimenting Over Time**

...as many trials as needed to just kind of keep narrowing it down and keep perfecting it until we all feel really confident that this is the right solution that we found (SLP E).

So, I never feel 100% sure. And I think that that's an okay thing because, I think, if you do that, then you're not looking to improve. And so, I think I always want to be constantly evaluating" (SLP D).

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### Implications

Expert SLPs determine access solutions in a similar way when working with children with motor impairments.

- Despite relying on mentors and continuing education as opposed to coursework for knowledge
- Despite self-perception of a lack of formal approach

These findings may help inform teaching practices to support improved preparation in AAC and access for this population.

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What are the best ways to elicit feedback from the child regarding preferences for access?

How can children and families be supported in the decision-making process?

### Implications

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## Implications

What is best practice for motor access skills to be learned?

- How much practice in non-communicative tasks is needed?
- What is the most beneficial way to implement practice of the skills?
- What tasks are best?



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What is best practice for motor access skills to be learned?

- How much practice in non-communicative tasks is needed?
- What is the most beneficial way to implement practice of the skills?

How long of "trialing" is enough to make a recommendation?



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### Visual Support Research

- What features support visual attention on AAC displays?
- What features hinder visual attention to AAC displays?
- Is "as much feedback" as possible the right approach?
- What about VSDs or symbol representation or alternate symbol arrangement as ways to promote skilled access?

How do best support individuals with visual impairments, including cortical visual impairments?



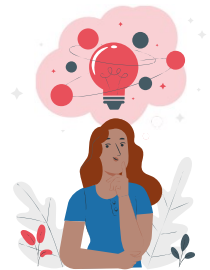
## Implications

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## Implications

How might we better define "successful access"?

- Is "depends on the individual" enough?
- Can objective measures be beneficial? Which ones?



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## Skilled Motor Access

Allows the focus to be on the interaction and the language construction and complexity

Includes the way a person moves to and between targets as well as how they make a selection

- A high level of certainty that the intended message will be selected
- Minimal physical effort
- Minimal cognitive effort (e.g., working memory, attention)
- Stability and flexibility
- Appropriate levels of independence and autonomy

Informed by Schmidt & Lee, 2019; Thelen, 2005

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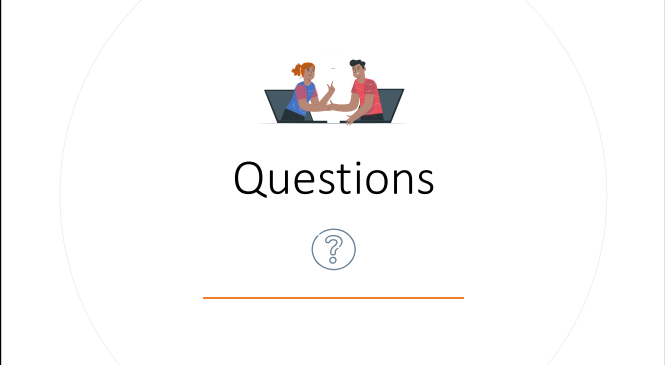
## Undergrad Research Assistants:

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## Questions

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