



Reimagining Assistive Devices to help Children with Cerebral Palsy (CP) Communicate

GATE #02

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Findings Gate #1

Major Problem/Issues

Recognizing the unique abilities of each child

Identifying physical and mental challenges faced by the child

Importance of Interventions

Encouraging independent activities

Encouraging participation

Selecting Appropriate Assistive Devices

Child Centred

Stigma-free

Affordability



Project Description

Primary Research

One major problem facing therapists and caregivers is that the children with CP have sets of **abilities** and **challenges** with **fine motor skills** and **speech impairments** which limit their ability to **function** and **communicate**.



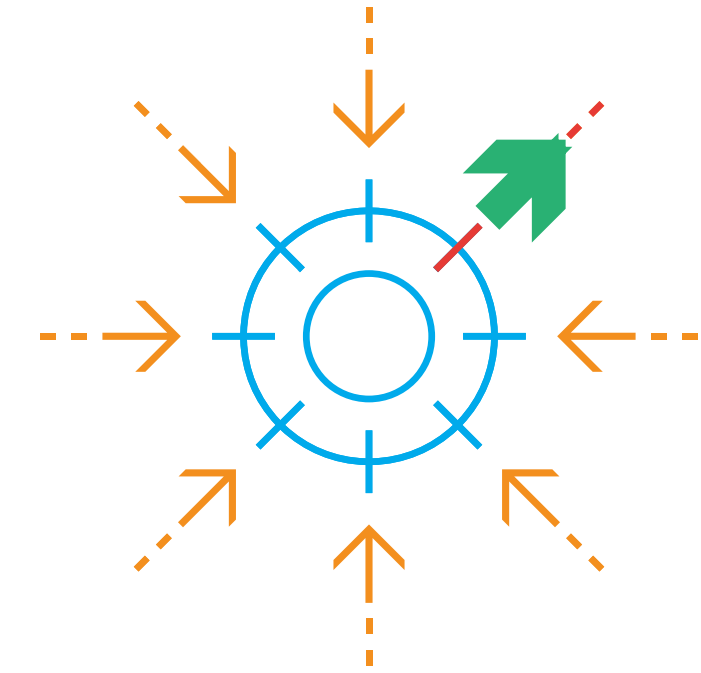
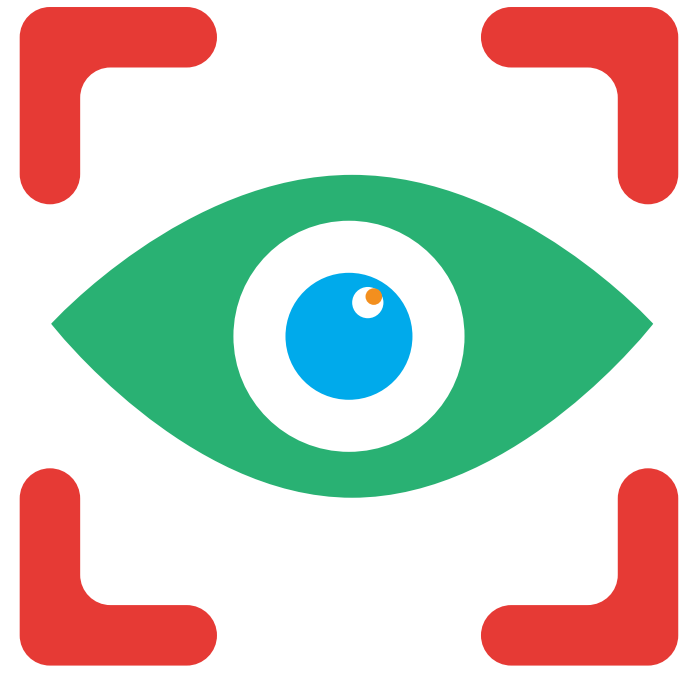
Project Aim

Aim

The aim of this research is to find out more about how non-speaking children with CP communicate in their daily life.



Methodology



Primary Research Methods

Empirical Data:
Observation
Semi-structured
Interviews w/SMEs

Subject Matter

Non-Verbal Children with CP
Parents / Caregivers
Subject Matter Experts

Research Focus

Communication &
Activities





Observation (Appendix A)

Location: Art Class Observations at Beverly School for children with developmental and /or physical disability.

The Aim Of The Art Class:

Help to express child's feelings
Improve Child's Fine Motor Skills

Method:

Silent Observer
Note Taking
Teacher Q/A
Feedback from TAs.

Empirical Data



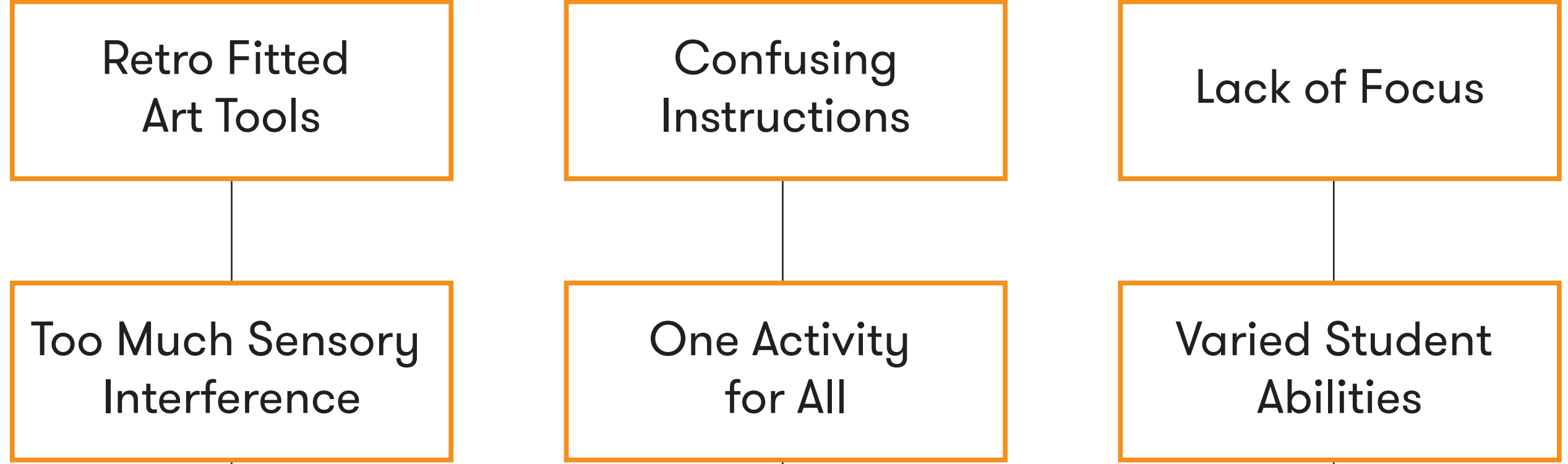


Overview

Empirical Data



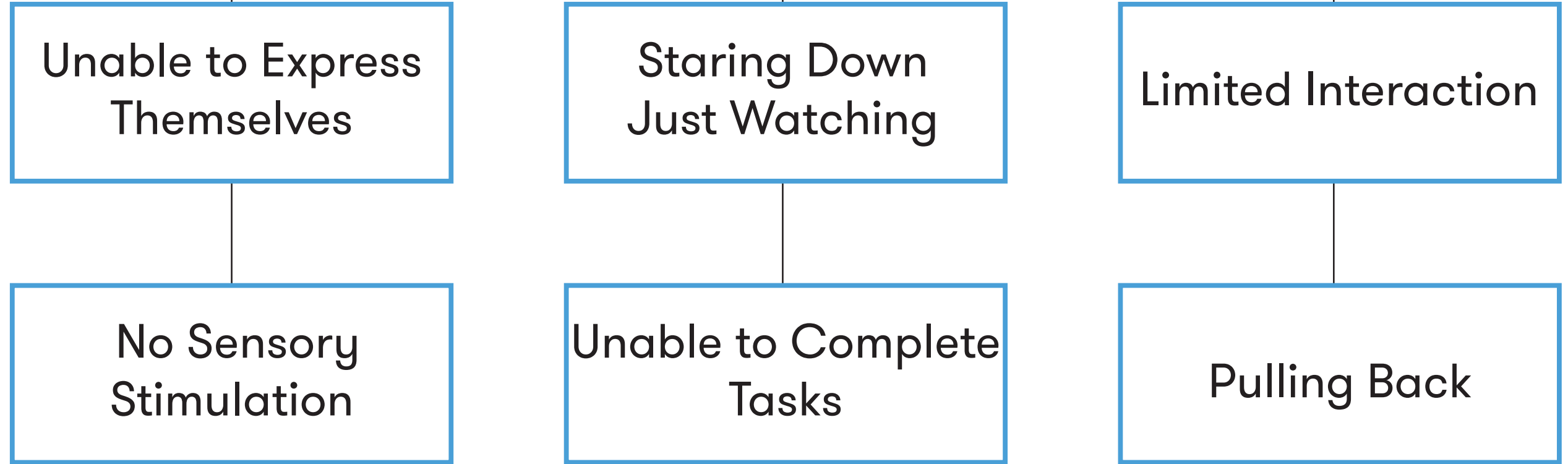
CAUSES



CORE PROBLEMS

Lack of Students Engagement in Art Class Activities

EFFECTS



Empirical Data Summary

Empirical Data

Retro Fitted
Art Tools

Attractive assistive devices that appeal to a child's senses.

Lack of Focus

Intuitive and easy to use thus encouraging independent activity.

Varied Student
Abilities

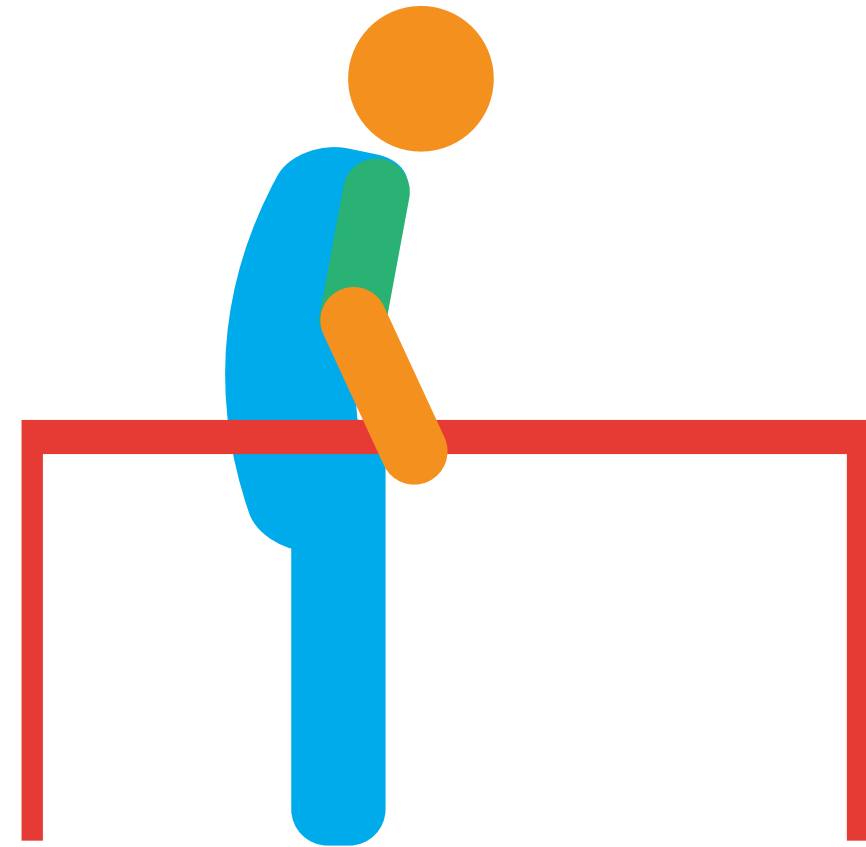
Tailored to each child's ability level.





Subject Matter Experts (Appendix B)

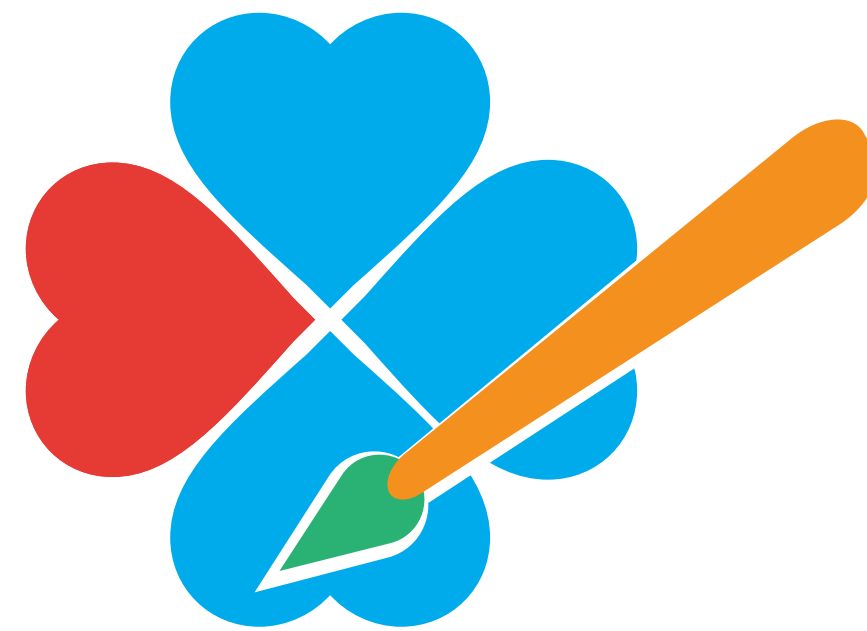
Semi-structured Interviews



PHYSIOTHERAPIST



OCCUPATIONAL
THERAPIST



ART THERAPIST



SPEECH
THERAPIST

Methods:

- Set of Questions
- Oral and Written Responses
- Snowball Sampling Method





Interview Questions

Q #1 Can you please briefly describe your job?

Can you please describe your **therapeutic function**?

Q #2 If we assume that every **kid** with **CP** shows **unique characteristics** and has **different abilities**, what techniques do you **employ** to **communicate** with a **non-speaking child** with CP?

In my research I watched on YouTube “Attitude” a documentary showing **daily life** of people with **disabilities** and I noticed that the **assistive devices** were too slow for the children and they got **frustrated**.

Q #3 Does this happen with your children? If so, how do you **encourage** the child to **continue** to **participate** in the therapy?

Q #4 In your opinion how important is it that the child can **express their feelings** with you ?
And how does this issue affect your approach?

Q #5 How do you **evaluate** the **success** or **failure** of your activities in therapy?
What are the criteria? What **techniques** are most useful?

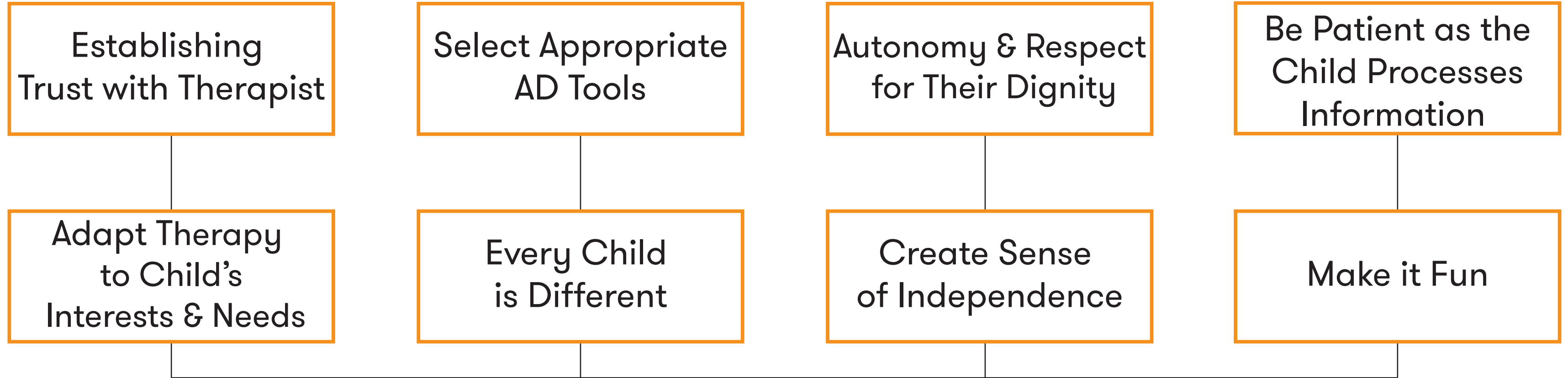




Overview

Semi-structured Interviews

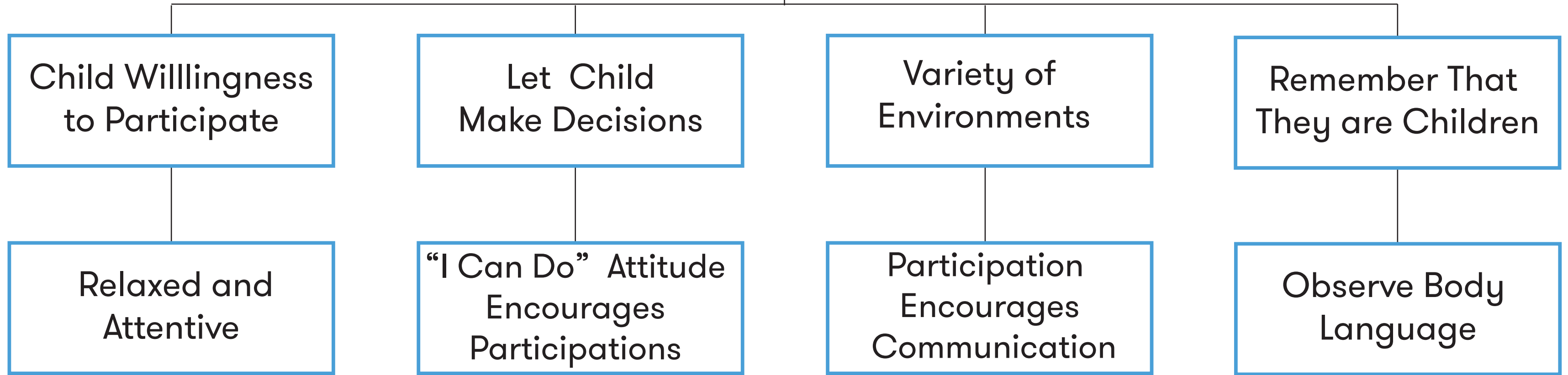
CAUSE

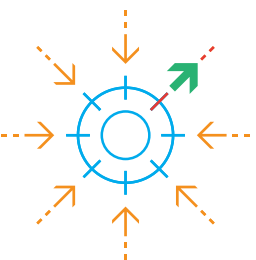


CORE PROBLEM

How do non-Speaking Children with CP communicate ?

EFFECTS



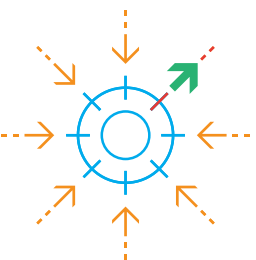


SMEs Interviews Summary

- Adapt Therapy to Child's Interests & Needs** Talk to parents and therapists as well as personal interaction.
- Autonomy/Respect for Their Dignity** Stigma free Assistive Communication Devices can be used by all children
- Be Patient as the Child Processes Information** Children with DDs may require more processing time.



<https://blog.schoolspecialty.com/benefits-art-students-special-needs/>



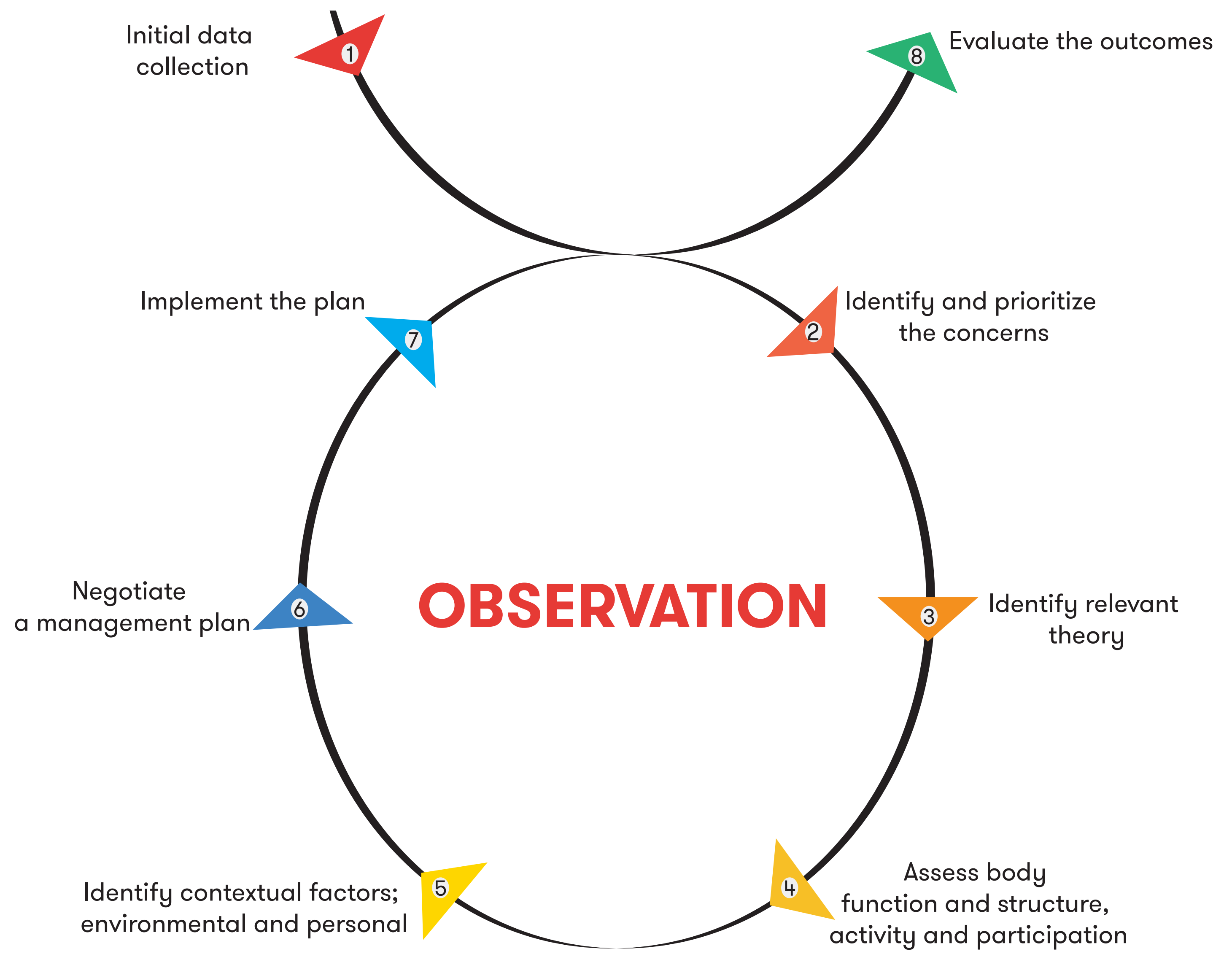
The Intervention Process

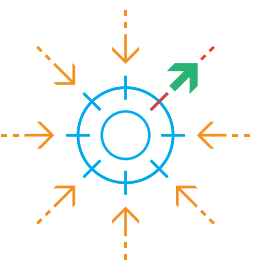
Model adapted from the Canadian Occupational Performance Process Model (CAOT, 2002).

Barriers

However !

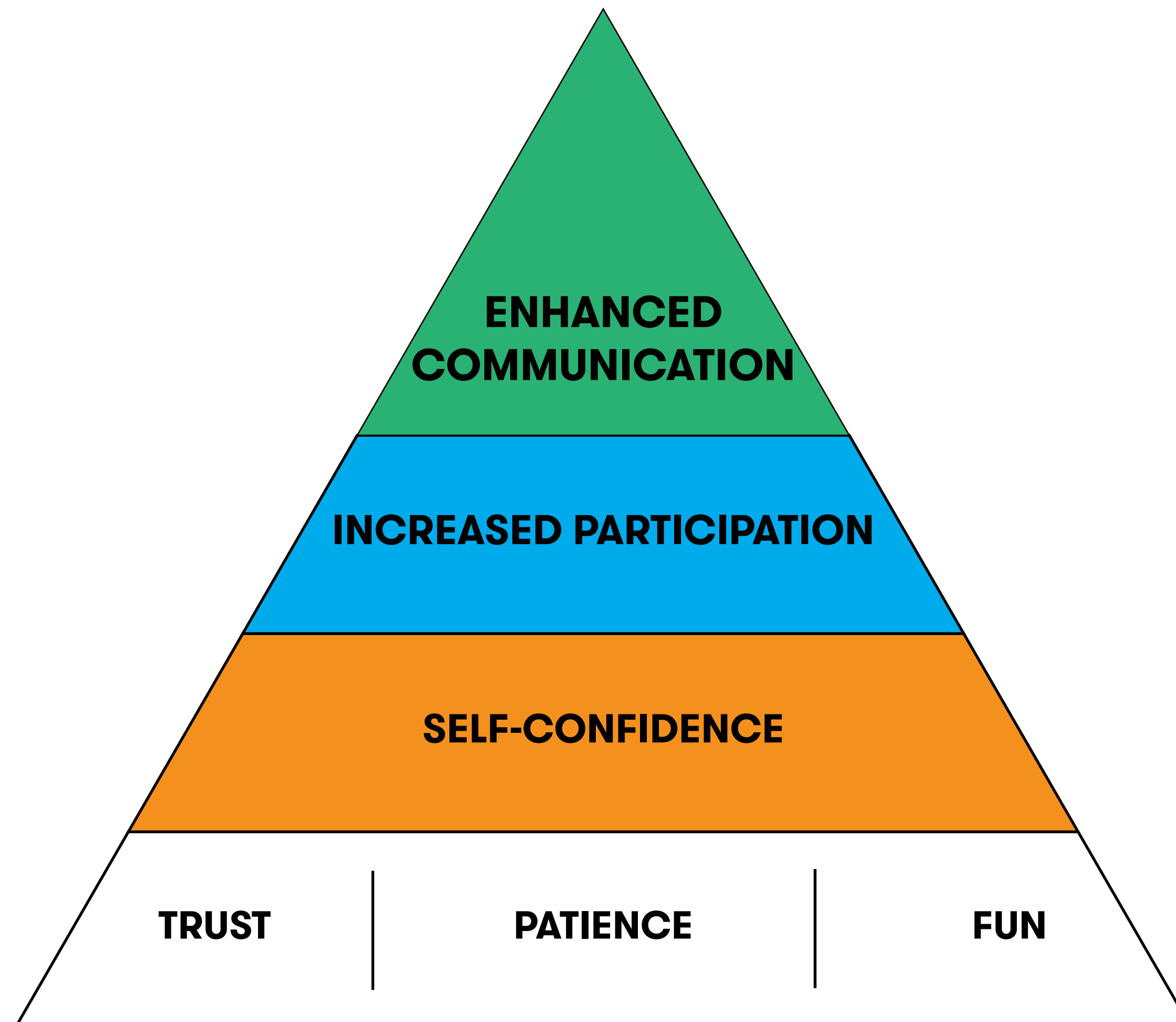
COVID19 is preventing effective onsite observation and evaluation.





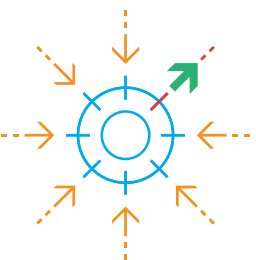
Value Triad

Success Criteria



PROGRESS SIGNIFICANTLY CORRELATED WITH PARTICIPATION





Care Triad

Accurate Observation and Assessments from Subject Matter Experts & Carers

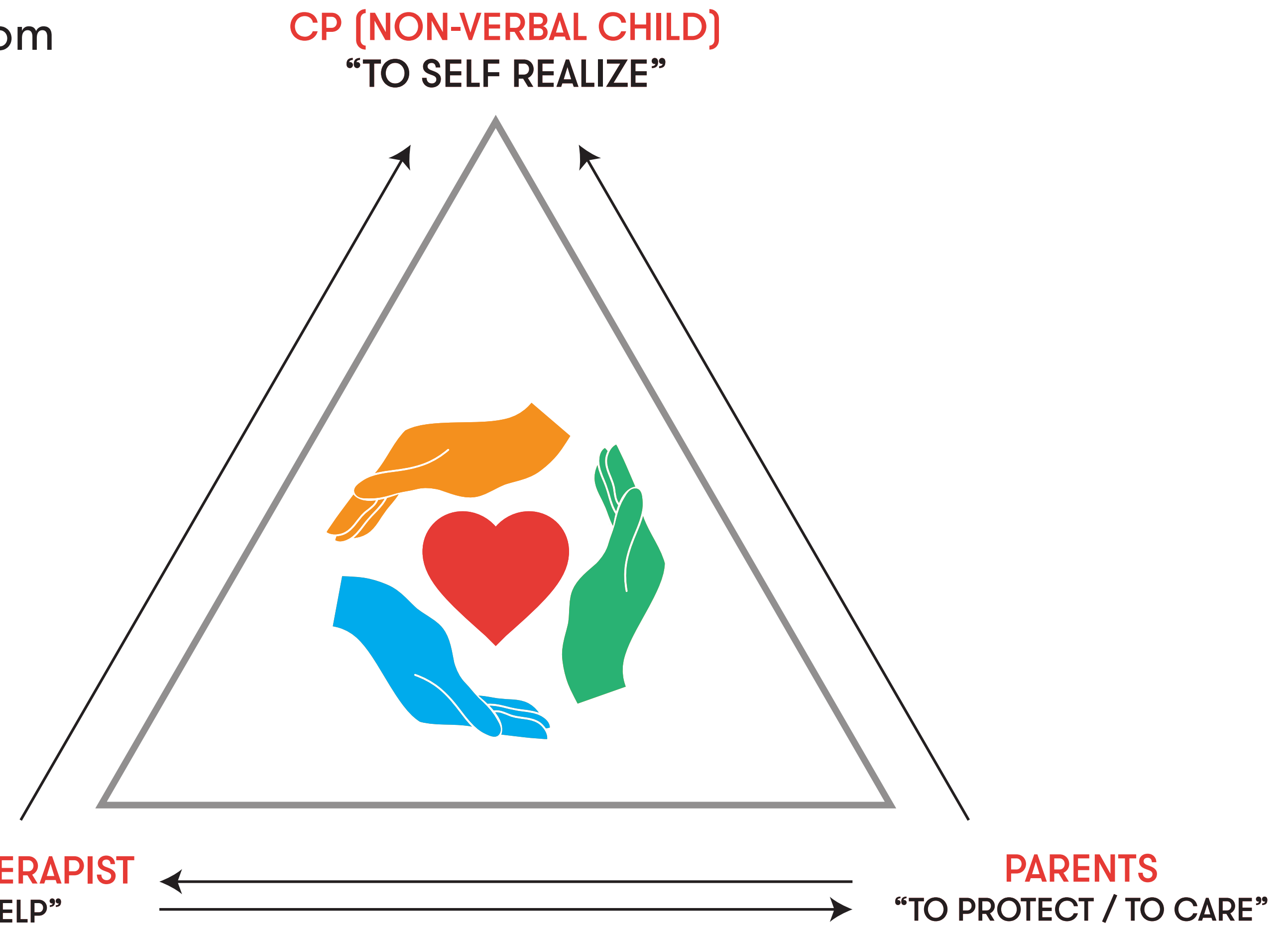
Media (Documentaries, Literature Reviews etc.)

Prototype Testing and Feedback

Revisions and Reassessment

Use of new manufacturing methods

Success Criteria



Summary

Non-Speaking Children with Cerebral Palsy face isolation and stigma within greater society. The goal of this research is to find ways to enhance communication skills in these children with uniquely appropriate assistive communication devices(ACD).

Findings

- **The need for ACDs tailored to each child's ability.**
- **Intuitive to use, fun and engaging.**
- **Self-confidence increases participation and encourages communications**

By creating objects that appear to be toys or games that have universal application, it is hoped that the child with CP would find these attractive and worthy of their curiosity. In addition, the child would feel more inclusive and less stigmatized because they see able bodied children using similar devices.





I communicate, therefore I am