

Why we do
what we do:
Balanced
Literacy for
All Students

Jane Farrall

Thanks to

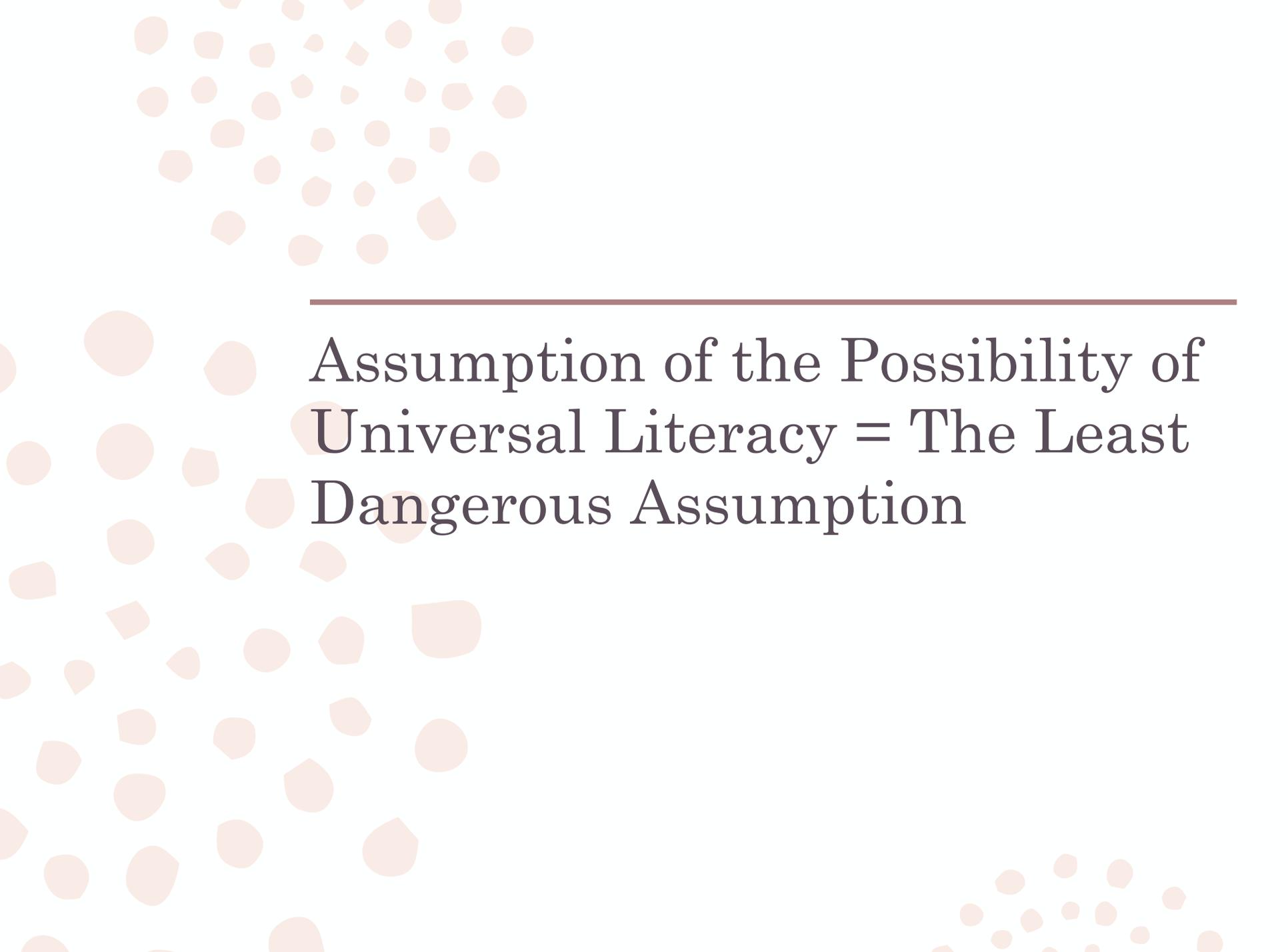
- Centre for Literacy and Disability Studies, especially Professor Karen Erickson
<http://www.med.unc.edu/ahs/clds>
- Professor David Koppenhaver <http://www.litdis.com/>
- Dr Sally Clendon <https://au.pinterest.com/salclendon/>

The Least Dangerous Assumption

- Donnellan (1984)
- “the criterion of least dangerous assumption holds that in the absence of conclusive data, educational decisions ought to be based on assumptions which, if incorrect, will have the least dangerous effect on the likelihood that students will be able to function independently as adults.”

Our Least Dangerous Assumption Is To Presume Competence

- Human intelligence is a multi-faceted construct rather than a uni-dimensional characteristic and measuring it with a test is invalid and leads to mistaken conclusions about a person's capacity to learn.
- Assessments of students' I.Q. are seriously flawed when they have difficulty communicating and movement challenges.
- Research shows that a growing number of children and adults labeled retarded show they are more capable when they have a means to communicate and are provided with high quality instruction.
- To presume incompetence could result in harm to our students if we are wrong.
- Even if we are wrong about students' capacities to learn general education curriculum content, the consequences to the student of that incorrect presumption are not as dangerous as the alternative.



Assumption of the Possibility of
Universal Literacy = The Least
Dangerous Assumption

“No student is too
anything to be able to
read and write”

David Yoder, DJI-AbleNet Literacy Lecture, ISAAC 2000

Words from Erin Sheldon

- Let's focus on doing those things that we know work!! Rather than asking if its possible, lets do what the research tells us we need to do to make it happen. Then we can look back on what we did and decide if it worked!
- The only way we will know if any of our children can learn to read or write is to get them the literacy instruction and create the opportunities for them to learn.
- I say that we are on the 50 year literacy plan with Maggie. I will give up on her developing literacy in 50 years, when I figure she's at retirement age and deserves a break, but not before. I will be happily pleased if she is reader and writer before then, but this is not a short-term plan for me!
- Facebook, 8th February 2014

“Reductionist Interventions”

- Katims (2000) reviewed literacy instruction in special education and identified reductionist interventions as ones which are
 - Sequenced and hierarchical
 - Employ drill and practice to train
 - Focus on skills such as:
 - *Letter names and sounds;*
 - *Word decoding;*
 - *Sight words; and*
 - *Filling out written forms.*
- Reductionist interventions are approaches that assume prerequisites and therefore setup barriers to literacy instruction

Some Outcomes of Reductionist Approaches

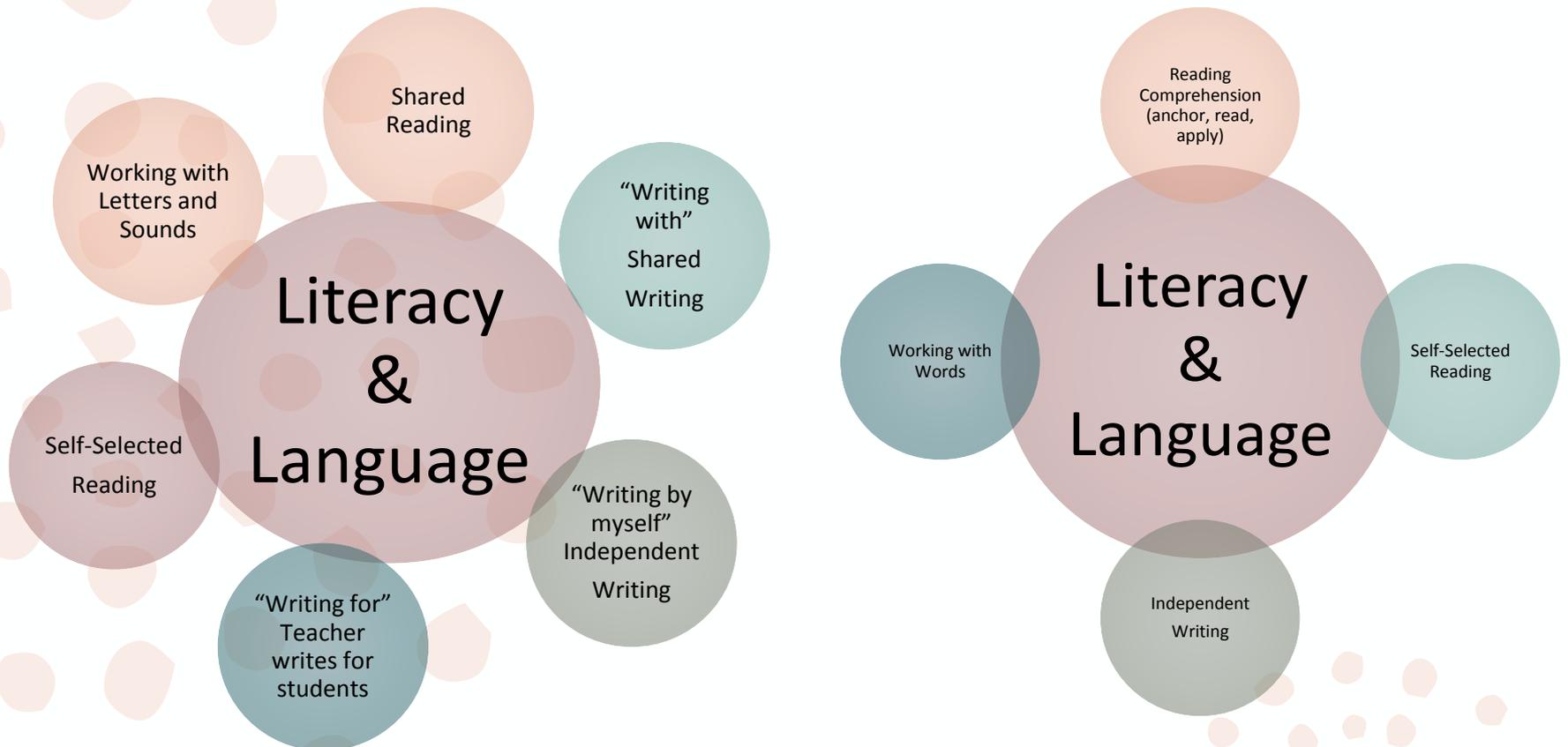
- Christopher, a teenager with autism, can read passages fluently at a Year 9 level. He doesn't understand that what he reads has meaning.
- Michael, a teenager with Down Syndrome, can only read aloud when pointing to words. He doesn't know that you can read silently.
- Chloe, a young woman with cerebral palsy, can sign every letter of the alphabet but doesn't know that the signs relate to the printed letters.

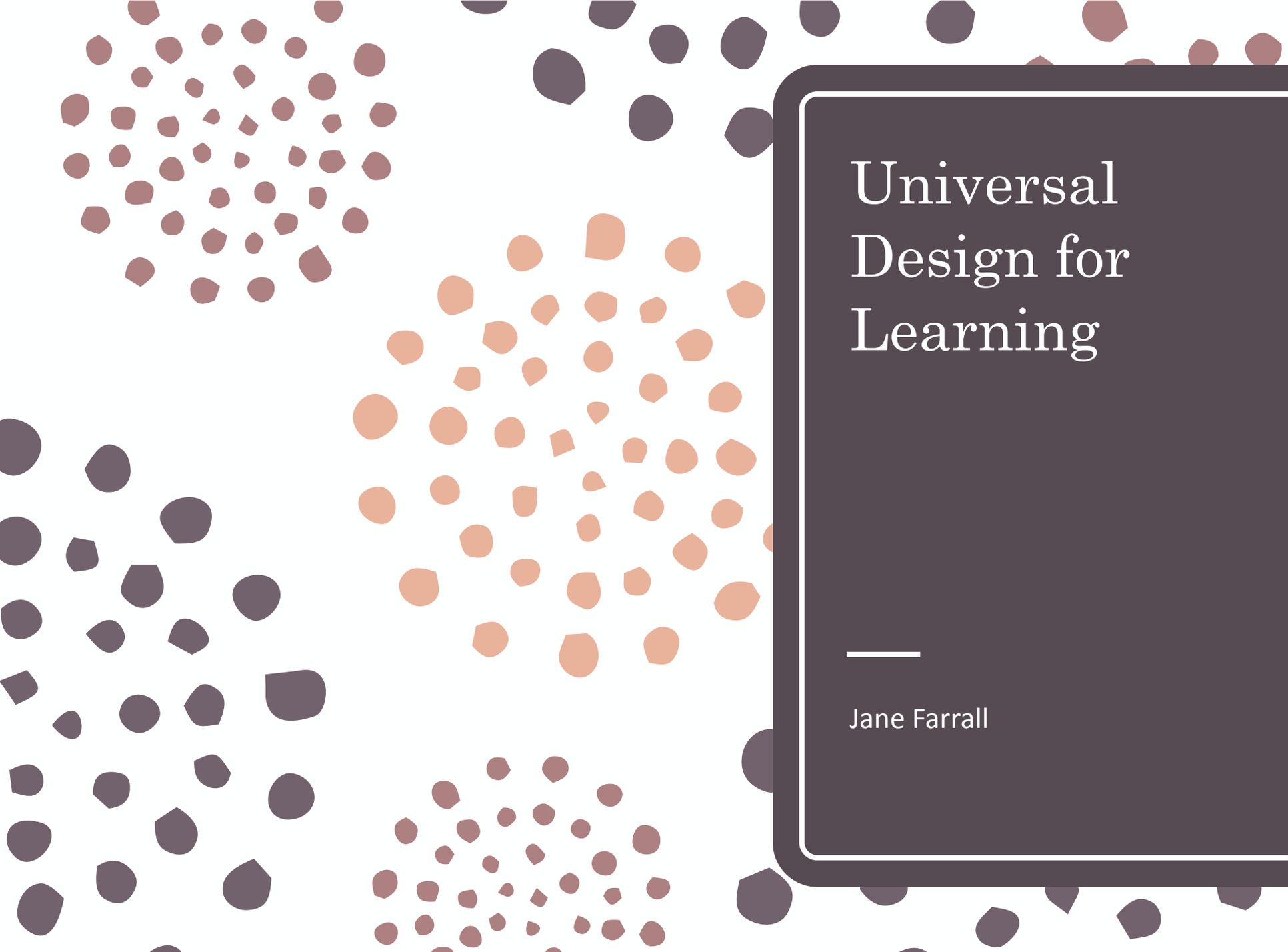
If we only teach parts
of literacy, then
students will only learn
parts.

A Balanced Diet

– Emergent Readers and Writers

– Conventional Readers and Writers





Universal Design for Learning

Jane Farrall

What is Universal Design for Learning?

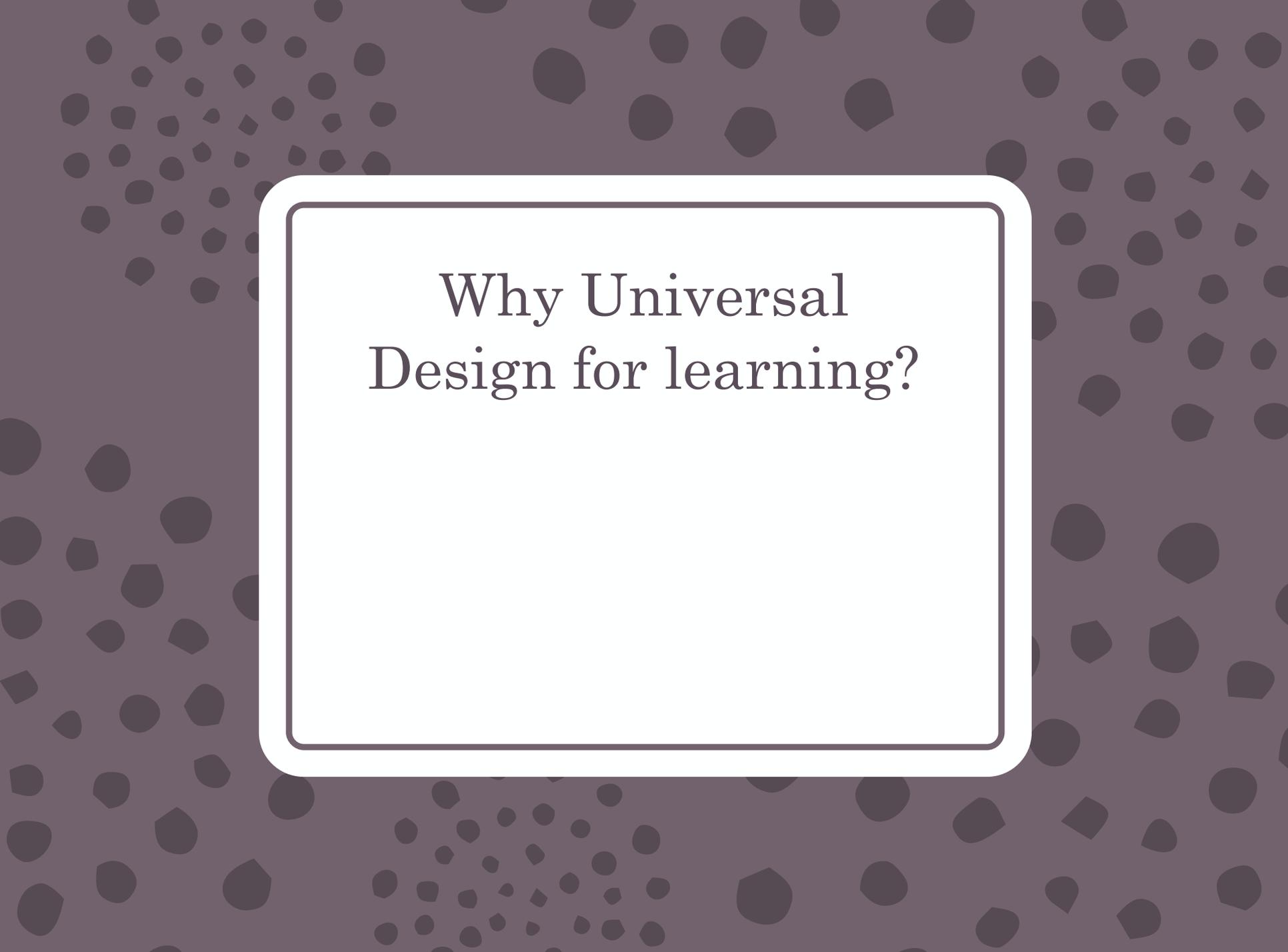
- Universal Design for Learning is a scientifically valid framework for guiding educational practice that:
 - Provides flexibility in the ways information is presented, in the ways students response or demonstrate knowledge and skills and the ways in which students are engaged; and
 - Reduces barriers in instruction, provides appropriate accommodations, supports, challenges and maintains high achievement expectations for all students, including students with disabilities and students who are limited English proficient.

Why Universal Design for Learning?

- Students come to the classroom with a variety of needs, skills, talents and interests
- The typical curriculum – which includes goals, instructional methods, classroom materials and assessments – has many barriers and roadblocks.
- Students and teachers are expected to make all of the necessary adjustment.
- UDL places the burden to adapt on the curriculum itself.

Principles of UDL

- Provide multiple, flexible means of:
 - Representation
 - Expression
 - Engagement



Why Universal
Design for learning?

Recognition Networks

- The what of learning
- Identify and interpret patterns of sound, light, taste, smell and touch

Strategic Networks

- The how of learning.
- Plan, execute and monitor actions and skills

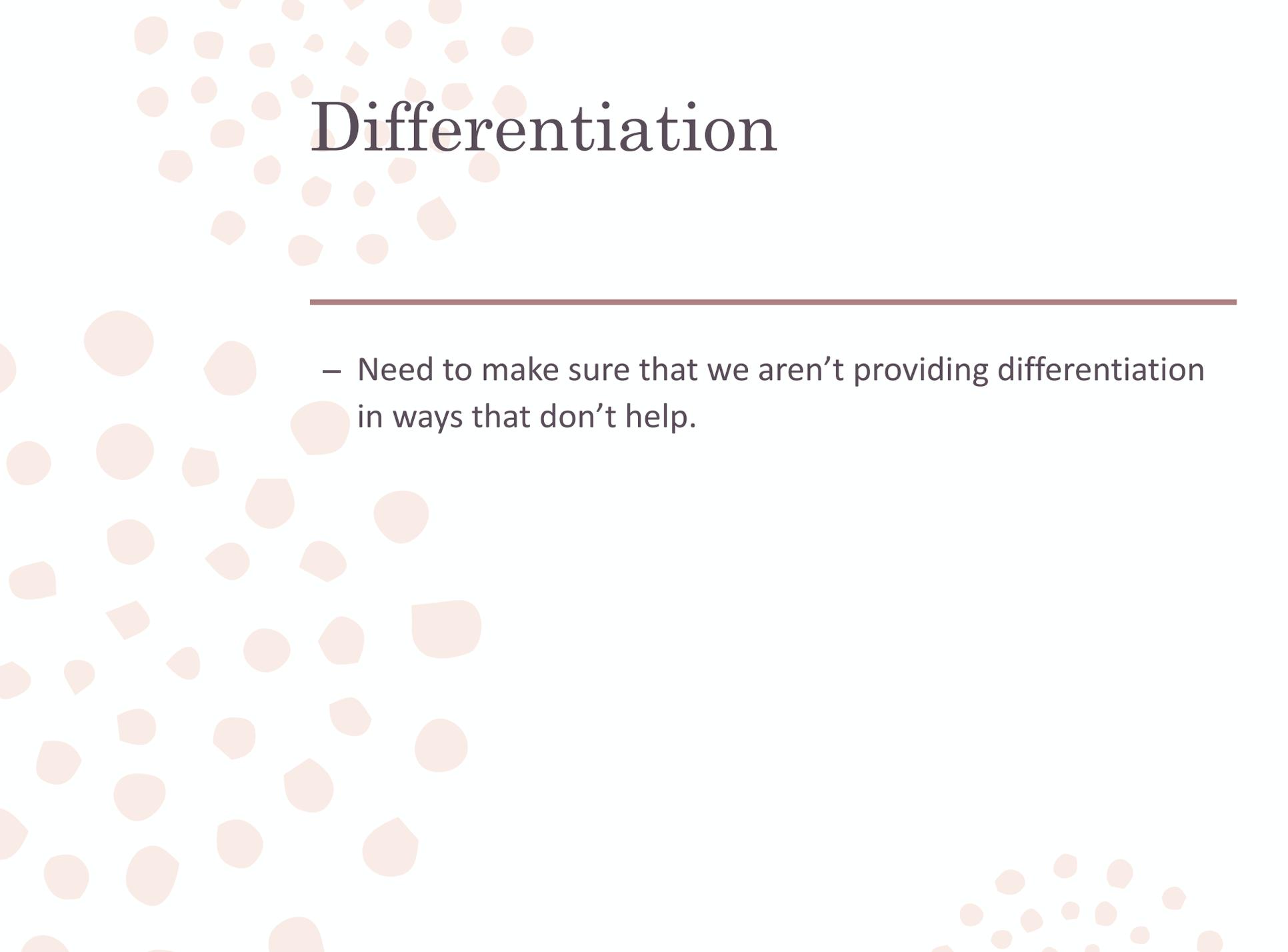
Affective Networks

- The why of learning
- Evaluate and set priorities

Differentiation

- Provide students with different avenues to acquire and express content.
- Allow them to process, construct or make sense of ideas.
- Differentiate through:
 - Content
 - Process
 - Product
 - Learning environment

Differentiation



-
- Need to make sure that we aren't providing differentiation in ways that don't help.

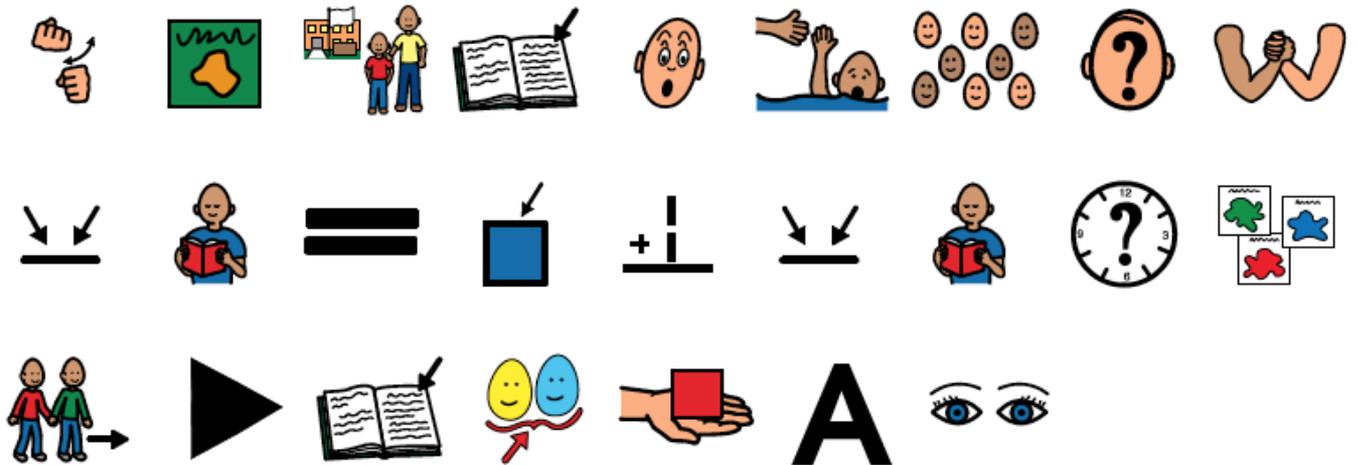
Talking Texts

- A common example of differentiation is to provide talking versions of texts so that students who struggle with literacy can understand them
- However, 48% of struggling 3rd – 9th grade students can't understand grade level text even when others read it to them. (Erickson & Koppenhaver, 2013)
- Written language format is something students need to learn to understand. It is different from spoken language structures.

Picture Supported Text

- Symbols appear to make text more universally accessible but do they?

What does this say?



Differentiation

- Making text universally accessible requires making it EASIER
- Determine the listening comprehension level of the student for text
- Text must be targeted at that level
- For students with significant language delay or intellectual disability, that means text must be EASY!

Dreamtime: How the Birds Got Their Colours

- Back in the Dreamtime (Alcheringa) all the bird tribes were the same colour, and that was black.
- One day the Peaceful Dove caught his foot on a sharp prong of wood on a broken off tree branch. The Dove called out piteously for help, and all the other bird tribes heard his cry and came to the place where the Dove lay. The Dove was in great pain and his foot had swollen up.

<http://www.okulture.com/Black%20Opal/index-19.html>

Dreamtime: How the Birds Got Their Colours

- The other birds gathered and provided shelter for him with their wings. Some brought water for him to drink and some bathed his foot with water. All except Crow, who was in a bad mood and was angered by the attention the other birds were giving the little Dove.
- Crow harangued the other birds and told them that they were wasting their time, the Peaceful Dove was done for. And indeed the foot was festering and swelling more all the time. But the other birds paid the Crow no heed, and finally they had had enough of him and chased him away.

Dreamtime: How the Birds Got Their Colours

- Then the Galah had an idea. She rushed forward and bit the Dove's swollen foot with her sharp, hooked beak. The Dove cried out in pain and a myriad of colours, all the colours in nature flowed out of the Dove's foot and splashed all over every bird gathered 'round.
- Some got only a little colour, and some got one or two colours only. Some were splashed with many colours, and the Rainbow Lorikeet was splashed with a so much colour that he looked like the rainbow itself!

Dreamtime: How the Birds Got Their Colours

- The Galah was splashed with rosy pink and grey, and the little Peaceful Dove was almost drained of colour till he was a light mottled grey-brown.
- And so it was that all the bird tribes got their beautiful coloured plumage, except for the selfish, bad-tempered Crow who remains in his original black to this day.

www.tarheelreader.org



Tar Heel Reader

Welcome

Welcome to the Tar Heel Reader, a collection of free, easy-to-read, and accessible books on a wide range of topics. Each book can be speech enabled and accessed using multiple interfaces, including touch screens, the IntelliKeys with custom overlays, and 1 to 3 switches. [Click here to learn more about alternative access methods.](#)

You may write your own books using pictures from the huge collection at [Flickr](#) or pictures you upload. All books should be complete, edited, and revised to the best of your ability before publishing them to the site. While you are working on them, please save them as drafts.

Note the little well icon  in the upper left corner of the page; clicking it will allow you to access the main menu. You can also click the settings icon  to change settings on some pages.

Ready to get started?

[Find a book](#) [Write a book](#)

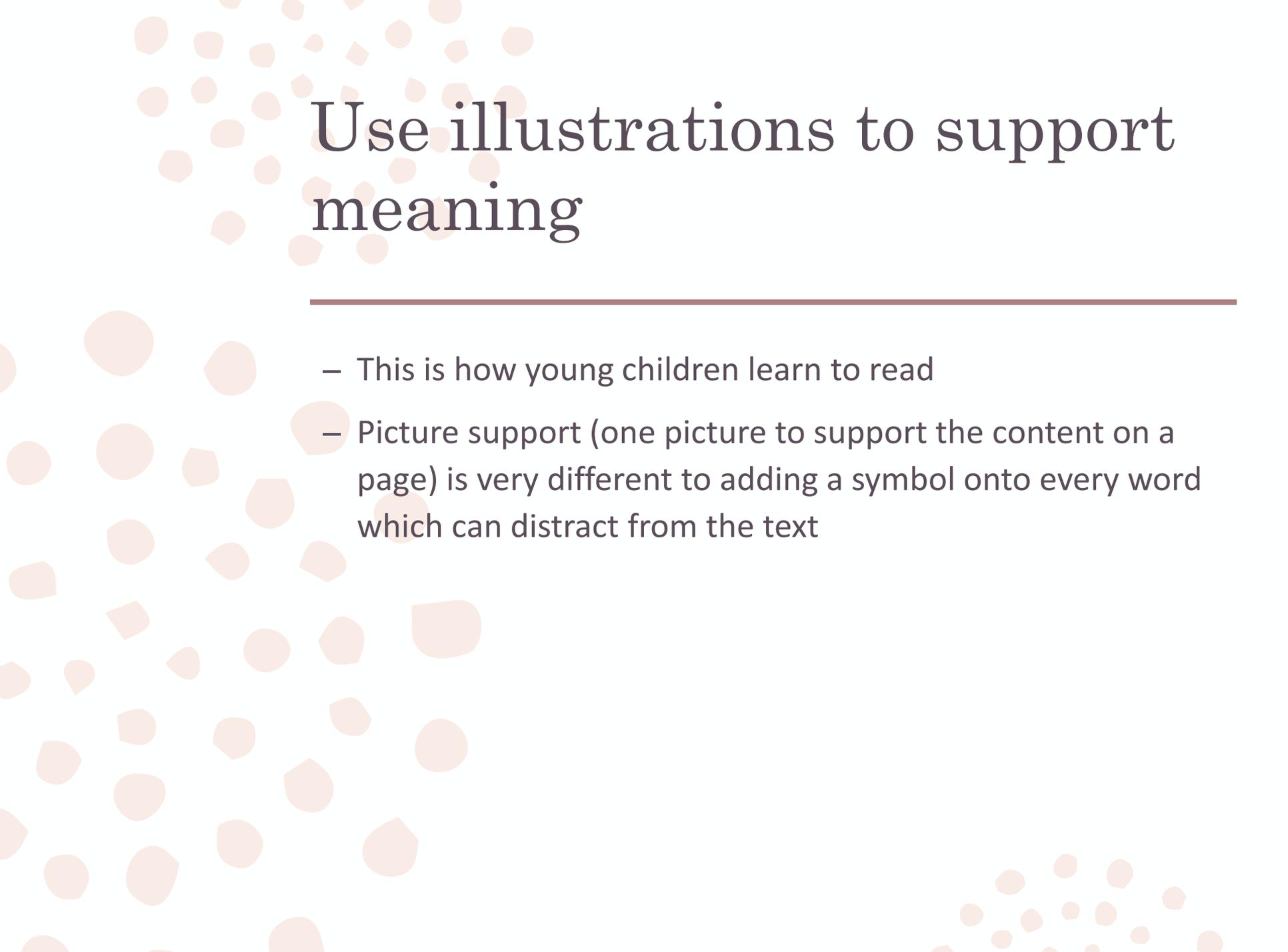
How the Birds got their Colours

From a Dreamtime Story



DLM on Tar Heel Reader

- There are a range of texts which have been broken down and simplified on Tar Heel Reader
- See this link for a list <http://dlmpd.com/clds/instructional-resources/>



Use illustrations to support meaning

- This is how young children learn to read
- Picture support (one picture to support the content on a page) is very different to adding a symbol onto every word which can distract from the text

Multiple Means of Action and Expression

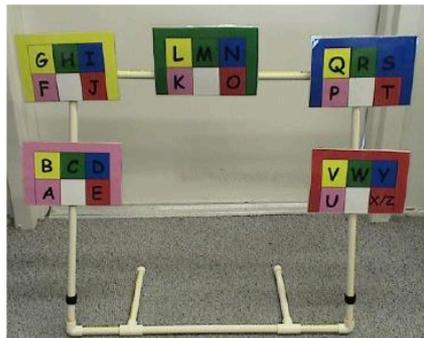
- Physical Action
- Expressive Skills and Fluency
- Executive Function

Technology Supporting Multiple and Flexible Means of Expression

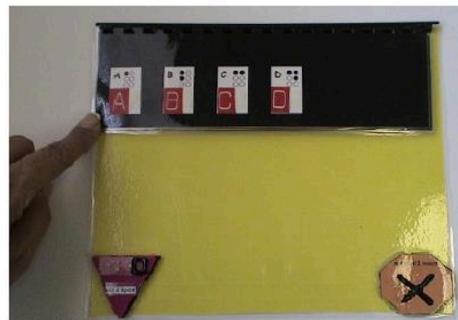
- Writing Tools
 - Making writing more accessible
 - *Talking word processors*
 - *Spell checkers*
 - *Word prediction*
 - Multimedia and Storytelling Tools
 - Provide an alternative to written responses
 - *Digital storytelling*
 - *Scrapbooks and flipbooks*
 - *Video production*

Multiple and Flexible Means of Expression in Writing

- Writing with Alternative Pencils
- Developed by the Centre for Literacy and Disability Studies
www.med.unc.edu/ahs/clds



Alphabet Eye Gaze Frame



Braille Flip Chart



Print Flip Chart

Multiple Means of Engagement

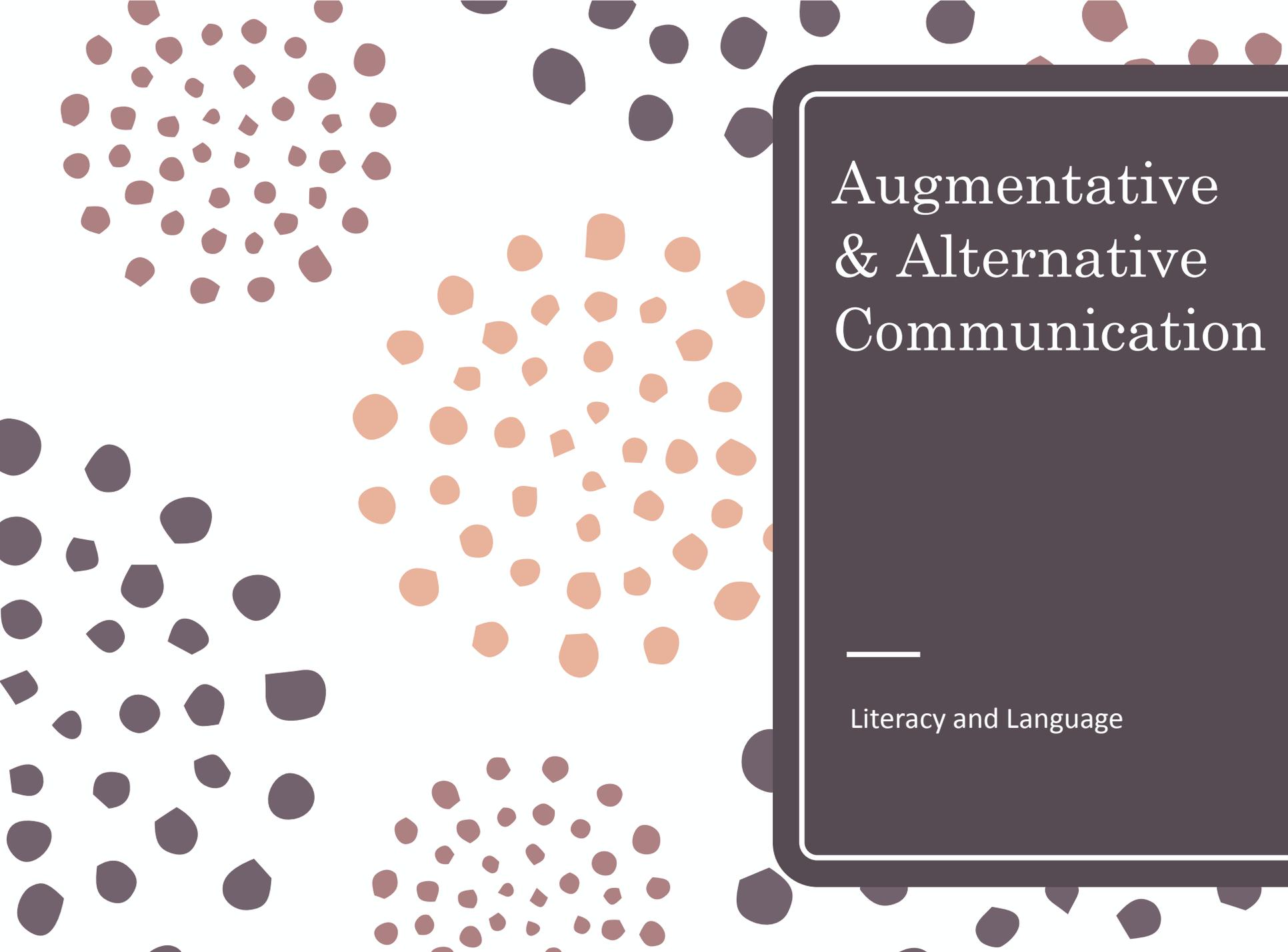
- Recruiting interest
- Sustaining Effort/Persistence
- Self-Regulation

Technology Supporting Multiple and Flexible Means of Engagement

- Collaboration Tools
 - Blogs and Wikis
 - iPads and apps
- Planning Tools
 - Graphic Organisers
- Corrective Feedback and Guidance
 - Online feedback regarding performance



Sometimes
Engagement has
NOTHING to do with
Technology



Augmentative & Alternative Communication

Literacy and Language

Communication

- Occurs all day, every day, in every aspect of our life
- Impacts greatly on our quality of life
- It is fundamental in literacy development and for participation in education;
- And, most importantly, it is a human right (United Nations Universal Declaration of Human Rights 1994)

AAC

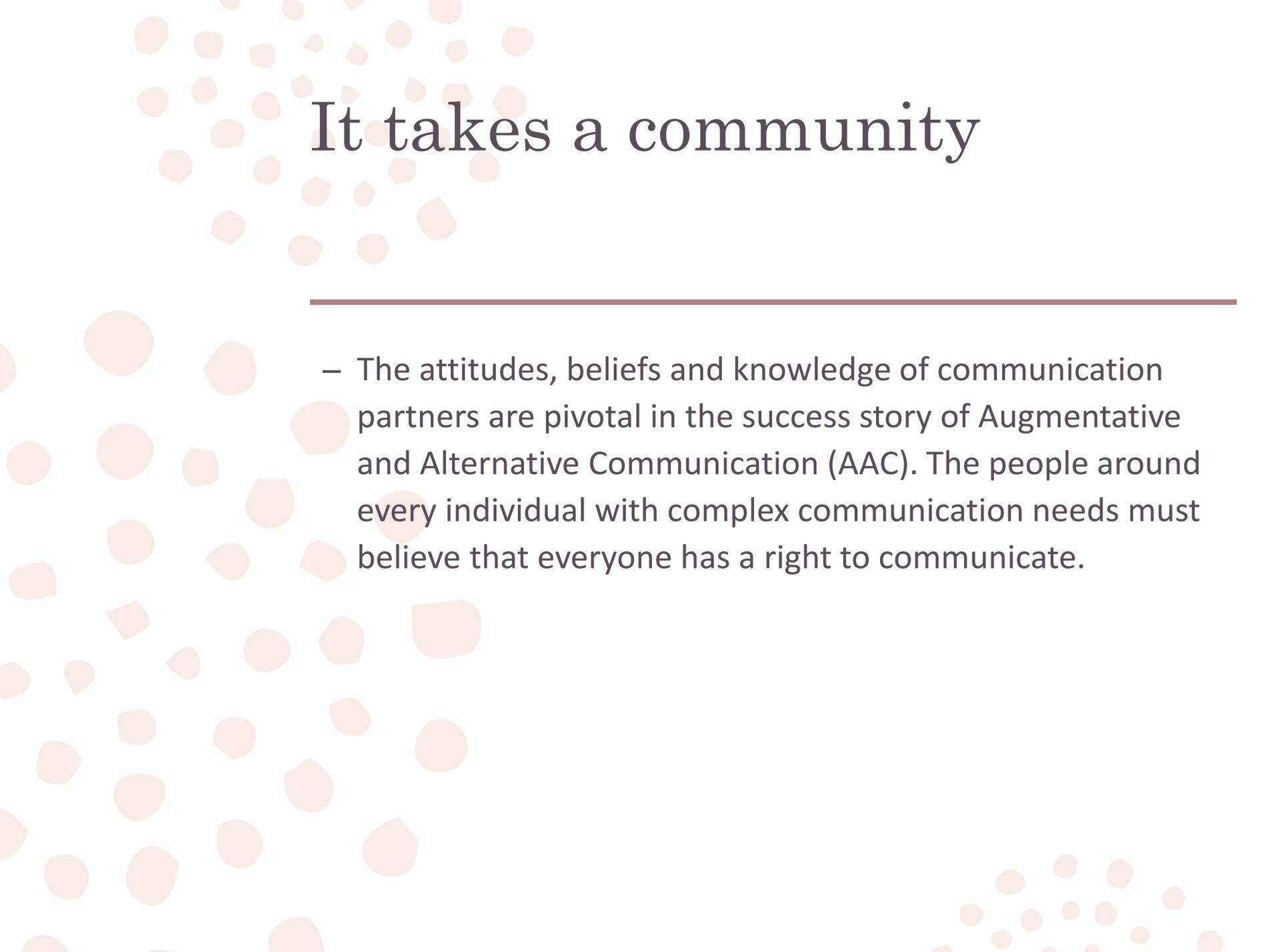
-
- What systems are you using?
 - What systems do you know?

Success vs Abandonment of AAC

- Factors impacting long-term success
 - Person who uses AAC system experiences success 91.76%
 - Degree to which the system is valued by the user and partners as a means of communication 90.58%
 - System serves a variety of communicative functions 89.85%
 - System is used for communication, not just as a toy or therapy tool (Real communication) 87.20%
 - Other areas:
 - *Appropriate device selected*
 - *Support for system*

Success vs Abandonment of AAC

- Factors leading to inappropriate abandonment:
 - Communication partners believe they can understand message without AAC (not solving anything) - 77.75%
 - Insufficient opportunities - 76.80%
 - User prefers a simpler means of communication (effort higher than outcome) 70.02%
 - Vocabulary does not meet individualized daily living needs 67.70%
 - Other areas
 - *Lack of support – training, time for programming, knowledgeable professionals*
 - *Time!!!!*
 - *Motivation*



It takes a community

- The attitudes, beliefs and knowledge of communication partners are pivotal in the success story of Augmentative and Alternative Communication (AAC). The people around every individual with complex communication needs must believe that everyone has a right to communicate.

AAC is for...

- Anyone with Complex Communication Needs (CCN)
- That is, anyone who has difficulties communicating with speech alone.
- ie people who are non-verbal, people who only have a limited number of spoken words or people whose speech is difficult to understand.

AAC Myths and Legends

- Introducing AAC will stop someone from developing speech
- Low tech before High tech
- Has a little speech so doesn't need AAC
- Too cognitively impaired for AAC
- AAC will fix all communication difficulties
- Too young for AAC
- Doesn't need AAC as they can express basic needs
- Symbol hierarchy

Symbols



Symbols

- The symbol hierarchy doesn't apply (or even really exist)!
- "Abstract and iconic symbols function the same to the early communicator" Ronski and Sevcik, 2005
- We need to use any symbol to help the individual learn what it means (Porter and Burkhart, 2010)
- There is no hierarchy of aided-visual symbols; experience plays a significant role in learning aided visual symbols and generalising their useage
- (DaFonte, 2008)There is no need to limit ourselves to an AAC system with objects or photographs

Amount of Vocabulary

- “WE USED TO THINK: Start with just a few (4-6) picture symbols and add a few more at a time, as the student [with ASD] shows that he or she can communicate appropriately with them usually by requesting
- Now we think: Really? Where is the research that defends this practice?
- This is certainly not how other kids learn new words and acquire language.”
- Professor Pat Mirenda, 2014

Amount of Vocabulary

- For individuals to learn language, we need to provide not just a few picture symbols – but a wide range of symbols that represent a robust vocabulary that supports them to learn how to put words together, supports them to contribute in every situation and supports them to develop into an autonomous communicator.
- This vocabulary needs to consist of a range of parts of speech – they need adjectives, verbs, adverbs, pronouns, prepositions, conjunctions, interjections, determiners and even some nouns. Try using a well designed core vocabulary system or Pragmatically Organised Dynamic Display (PODD)

Prerequisites??

- Moving on from the candidacy model of the 70s and 80s....
- Romski & Sevcik (1988) "relationship between cognitive, communicative and linguistic skills is not as predictable as it might have been initially viewed";
- Kangas & Lloyd (1998) - summarised research that signing may be easier to learn than speech; individuals with "severe mental retardation" can learn to be expressive with symbols at a relatively early age;
- Romski & Sevcik (2005) "some individuals with severe sensori-motor disabilities cannot demonstrate their cognitive abilities without a means by which to communicate so we cannot insist on evidence of those abilities before providing AAC services and supports."

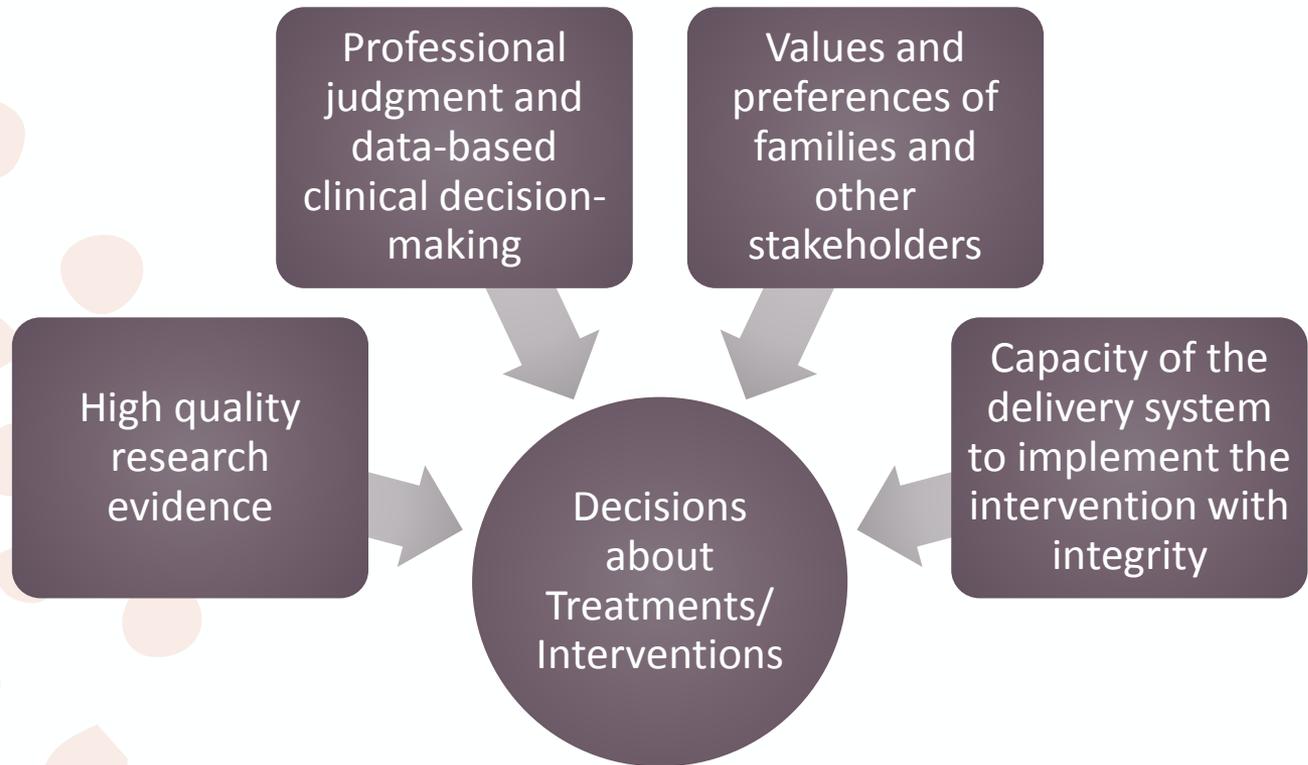
AAC Myths and Legends - Resources

- Ronski, M.A. & Sevcik, R.A. (2005). Augmentative communication and early intervention: Myths and realities. *Infants & Young Children*, 18:3, 174 – 185.
- YAACK <http://aac.unl.edu/yaack>
- DynaVox Implementation Toolkit

AAC should be:

- Used frequently, interactively and generatively to express a wide range of communicative intents
- Occurring during at least 80% of ongoing classroom programming (as speech or manual sign use is)
- Being used to mediate communication with classmates as well as personnel (ie teachers, support officers, therapists)
- Be designed and implemented in as time and cost effective a manner as possible

Evidence Based Practice (EBP) and Decision Making



Source: National Autism Center (<http://www.nationalautismcenter.org>) and National Professional Development Center on Autism Spectrum Disorders (<http://autismpdc.fpg.unc.edu/content/evidence-based-practices>)

AAC Evidence Base

- American Speech & Hearing Association <http://www.ncepmaps.org/index.php>
- SpeechBite <http://www.speechbite.com/>
- EvidAAC <http://www.evidaac.com/welcome.php>
- Communication Matters <http://www.aacknowledge.org.uk/>

A good comprehensive AAC system

- Has a range of language
- Supports the user to develop linguistic competency
- Can be used for aided language stimulation through the day
- Can be used to communicate through the day
- Can be used for a range of communicative functions
- Supports the user to develop communication autonomy

System for today

System for tomorrow

- Participation Model (Beukelman & Mirenda, 2005)
- Initial assessment for today looking at current communication needs/abilities;
- Detailed assessment for tomorrow identifying communication systems that will support the user in new communication environments into the future;
- Follow up assessment to maintain a comprehensive system to meet the changing capabilities and lifestyle of the individual.

AAC

- Two sets of AAC-related decisions should be made from the outset: those aimed at “today” and those aimed at “tomorrow”.
- Beukelman & Mirenda, 2013

Communicative Competence

- Light (1989), Light & Mcnaughton (2014)
- Linguistic Competence (mastery of the linguistic code)
- Operational Competence (access methods, on/off)
- Social Competence
- Strategic Competence (make the most of the vocab they have)
- See Kovach (2009) for an assessment based on this structure

Linguistic Competence

- Does the user know how to combine words to get their message across?
- Does the app have vocabulary that supports language input and language development?

Operational Competence

- Does the user know how to turn the iPad on and off?
- Do they know how to change the volume?
- Do they know how to open their AAC app?

Social Competence

- Does the user understand not just when it is appropriate to communicate but what it is appropriate to communicate?
- E.g. words we don't use in at school.
- E.g. small talk

Strategic Competence

- Is the user able to make the best use of the vocabulary they have in their system?

Yes and No

—

Yes/No

- Not all yes/no questions are created equally:
 - Do you want a biscuit?
 - Is the capital city of Russia Moscow?

Ahern (2012)

<http://teachinglearnerswithmultipleneeds.blogspot.com>

Getting Started

- Prioritise questions that are:
 - Natural
 - Authentic
 - Empowering

YES

Do you want
me to take you
to your
classroom?

Did you like the
story?

Do you think
they go
together?

Do you want to
go first?

Do you want
the blue paint?



NO

Is this a shoe?

Is this the
letter B?

Are you here
today?



Other Hints

- Don't assume that you know what the child wants.
- Don't use words to fill space.
 - "Yes or no?"
 - Do you want the ball?
 - Yes or no?
 - The ball?
 - Tell me yes or no?"

Ahern (2012)

<http://teachinglearnerswithmultipleneeds.blogspot.com>

Yes/No

- Need to watch the number of yes/no questions we ask AAC users
- BUT
- Every AAC user needs to develop a good, clear Yes/No response

Good Practice Approaches to AAC

- Picture Exchange Communication System (PECS)
- Aided Language Displays (ALDs)
- PODD
- Core Vocabulary
- (Plus a few others we won't get today e.g. manual sign, tactile symbols)

Picture Exchange Communication System

- Bondy and Frost 1994
- Strong evidence base for using this with some children with ASD as a first AAC approach
- Teaches one communicative function in early stages - requesting
- Very structured program
- Teaches joint attention (Yoder & Stone, 2006)

PECS

-
- Several systematic reviews and meta- analyses have examined PECS outcomes
 - Preston & Carter, 2009
 - Sulzer-Azaroff, Hoffmann, Horton, Bondy, & Frost,2009
 - Flippin, Reszka, & Watson, 2010
 - Hart & Banda, 2010
 - Tincani & Devis, 2011
 - Ganz, Davis et al., 2012
 - Each has pros and cons

From Mirenda (2014)

Improvement Rate Differences

- Calculated Improvement Rate Difference (IRD) scores from study data
- The “difference or change in percent of high scores from baseline to intervention” (p. 67)
- $\leq .50$ = small or questionable effects
- $.50$ and $.70$ = moderate effects
- $\geq .70$ = large or very large effects

Ganz, Davis et al. (2012)

- 13 studies, 32 participants, ages 3-17
- Improvement Rate Differences calculated, as in previous work
- Uniquely examined the PECS Phase attained
- ☐ Phase 1: 1 (IRD .45)
- ☐ Phase 2: 2 (IRD .63)
- ☐ Phase 3: 8 (IRD .65)
- ☐ Phase 4: 2 (IRD .33)
- ☐ Phase 5: 0
- ☐ Phase 6: 2 (IRD .84 – significantly better)

From Mirenda (2014)

Ganz, Davis et al. (2012)

- Conclusions:
- “PECS appears to be a promising augmentative system that...has moderately positive effects on functional communication skills” such as initiating requests
- PECS effects on targets other than functional communication are “modest or uncertain” (p. 415)
 - Social skills
 - Speech development
 - Challenging behaviour

PECS

- Some studies suggest is a good short term introduction – then move onto a more comprehensive system
- Often see a decrease in challenging behaviour initially and then may see an increase after a while as it doesn't promote further language development
- Something we can implement with some of the students with ASD short term to help them understand the power of communication

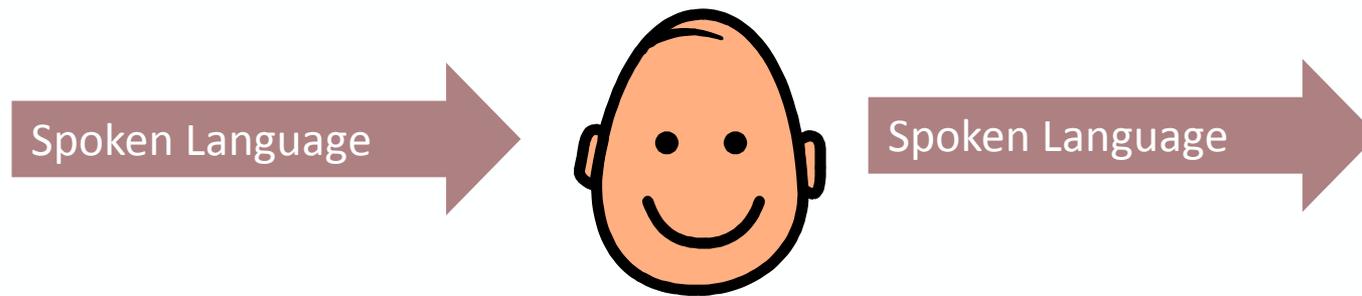
Aided Language Stimulation

- Prospective users must be provided with frequent examples of interactive, generative use to acquire any semblance or proficiency.
- No-one would dispute the fact that it would be very difficult to become a fluent speaker of French, if your instructor seldom used French in your presence.
- Likewise, it is difficult for a nonspeaker to become a proficient AAC user if other people never model interactive use of their system during all aspects of the day.

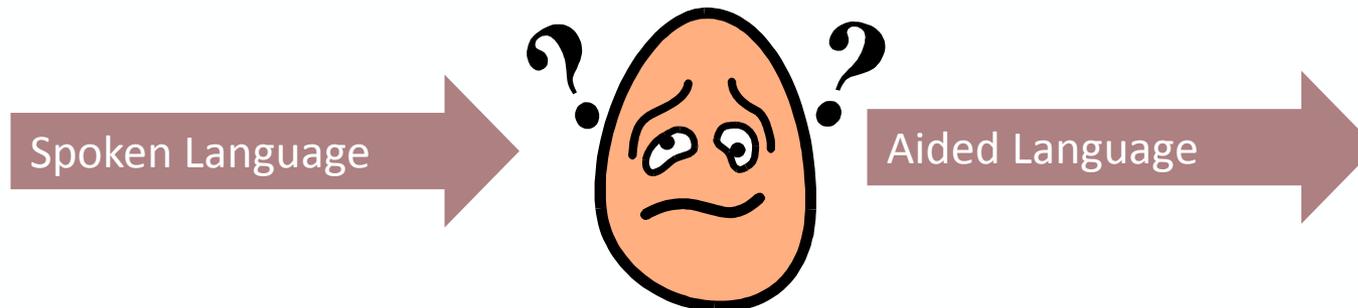
Input

Output

Spoken language development



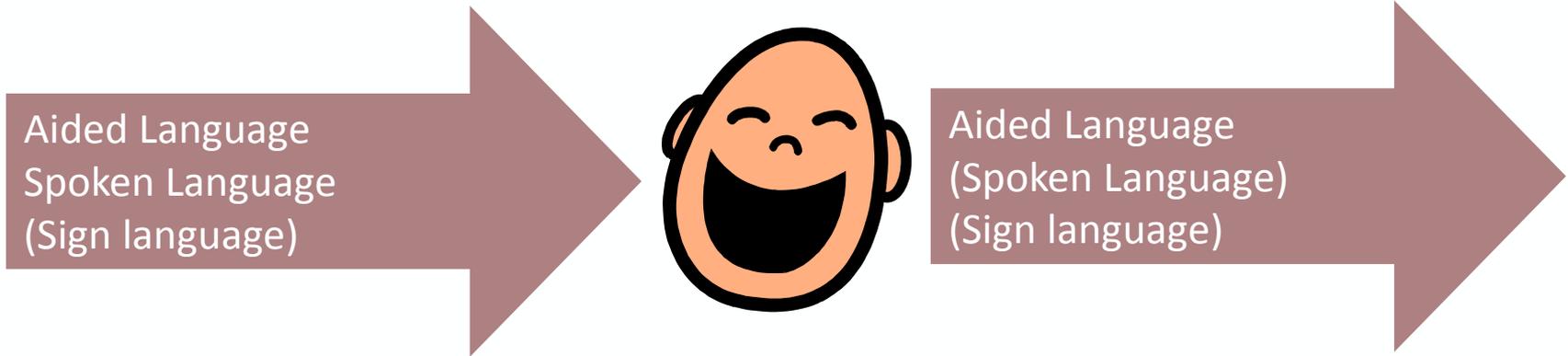
Child learning aided symbols



Input

Output

Child learning aided symbols



Aided Language

- It is critical for an individual to not only have symbols, but also to have experience with those symbols in a symbol rich environment / print rich environment. The typically developing child will have been exposed to oral language for approximately 4,380 waking hours by the time he begins speaking at about 18 months of age.

Aided Language

- If someone is using a different symbol set and only has exposure to it two times a week, for 20 – 30 minutes each, it will take the alternate symbol user 84 years to have the same experience with his symbols that the typically developing child has with the spoken word in 18 months!!!

Aided Language

- The typically developing child will demonstrate language competency around 9 – 12 years of age having been immersed in and practicing oral language for approximately 36,500 waking hours. For 9 – 12 years that child has been using and receiving corrective feedback while practicing with the spoken word.

Aided Language

- At twice a week, 20 – 30 minutes each time, it will take the alternate symbol user 701 years to have the same experience.

Aided Language Research

- Turn-taking (Beck et al., 2009)
- Receptive vocabulary (Dada & Alant, 2009; Drager et al., 2006; Harris & Reichle, 2004; Ronski & Sevcik, 1996)
- 2+ word/morpheme combinations (S-V, S-V-O, S-(is)-V- ing-O (Binger & Light, 2007; Bruno & Trembath, 2006; Ronski & Sevcik, 1996; Ronski et al., 2010)
- Grammatical morphemes (-ing, -'s, -ed, -s) (Binger et al., 2011)
- Pragmatics, increased communication turns, semantics, receptive and expressive vocab increases, syntax (multi symbol turns) and morphonology Sennott, S.C., Light, J.C. & McNaughton, D. (2016) AAC Modeling Intervention Research Review, Research and Practice for Persons with Severe Disabilities, 1 – 15

Aided Language

- In evaluating any AAC system....
- If you (as a person proficient in language) cannot use a communication system or display throughout an interaction then how can you provide Aided Language Stimulation?
- If you cannot use it, is it designed well?

Pragmatically Organised Dynamic Displays (PODD)

The logo for Pragmatically Organised Dynamic Displays (PODD) features the letters P, O, D, and D in white, bold, sans-serif font, each contained within a black square. The 'P' square has a white spiral binding on its left side, resembling a notebook. The 'O', 'D', and 'D' squares are plain black.

PODD

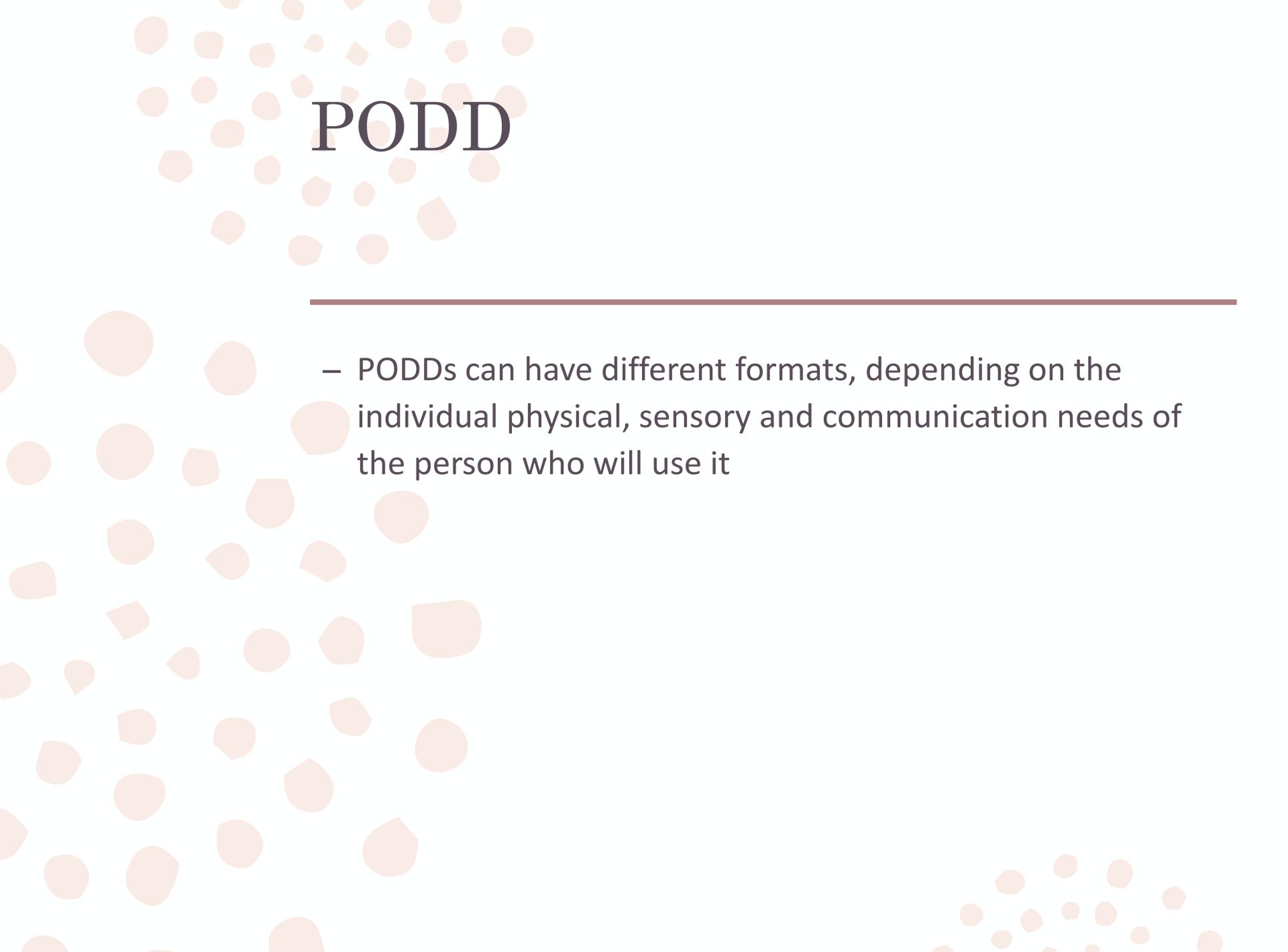
PODD

- PODD is a way of organising whole word and symbol vocabulary in a communication book or speech generating device to provide immersion and modelling for learning

PODD

- The aim of a PODD is to provide vocabulary:
 - For continuous communication all the time
 - For a range of messages
 - Across a range of topics
 - In multiple environments
- Provides some predictive language that helps early communicators be more successful

PODD



- PODDs can have different formats, depending on the individual physical, sensory and communication needs of the person who will use it

Core Vocabulary

- Using common (or core) English words on an AAC display to enable a user to construct their own sentences
- Approach used in lots of high tech systems but not used as much in low tech due to difficulty of arranging vocabulary for access

Core Vocabulary

- 75%-80% of the words we use daily come from a set of 350-400 words: these are the CORE
- “What are you eating for lunch today?”
- “I want chicken nuggets”
- (Text in red is core vocabulary, all in top 200)
- In many AAC systems, the only available words would be chicken nuggets and these are not core!!

Core Vocabulary

- FRINGE VOCABULARY

- Low frequency words

- Only useful in one or two situations

- Often related to a specific topic

- CORE VOCAB

- High frequency words

- Can be combined to get you message across in lots of different situations

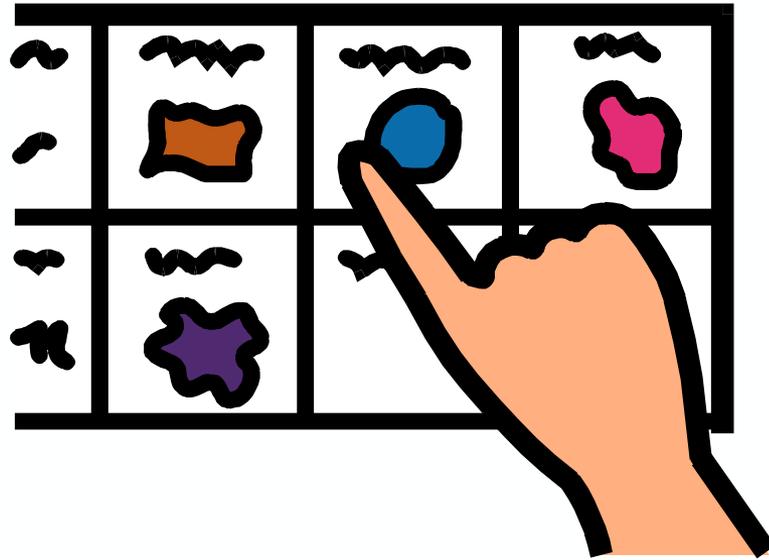
Core and Fringe

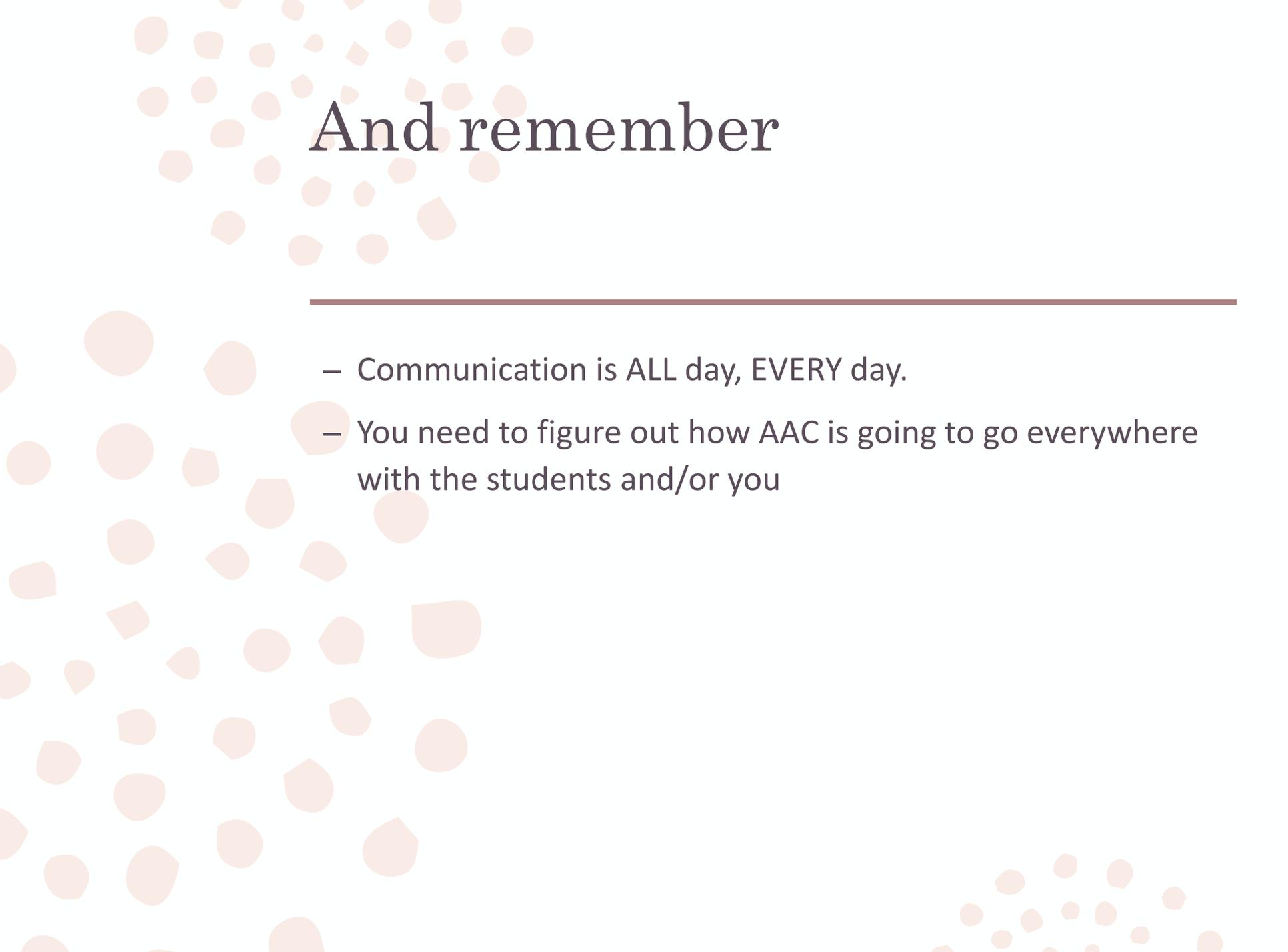
- Over a 2-year period, 12 youth with moderate-severe ID (some with ASD) were provided with 35-44 lexigrams on an SGD, including 61% fringe and 39% core vocabulary (e.g., stop, help, more, good, wait, excuse me, I'm sorry)
- BOTH types of words were learned and used, in equal proportions (Adamson et al., 1992)

Core and Fringe

- Including core doesn't mean excluding fringe!
- But -- consider a unit on plants. In his or her lifetime, how often will a student need to say
 - stem, leaf, stamen, pistil, and flower
 - Compared to
 - not, grow, tall, pretty, green, and healthy?

Practice, Practice, Practice





And remember

- Communication is ALL day, EVERY day.
- You need to figure out how AAC is going to go everywhere with the students and/or you

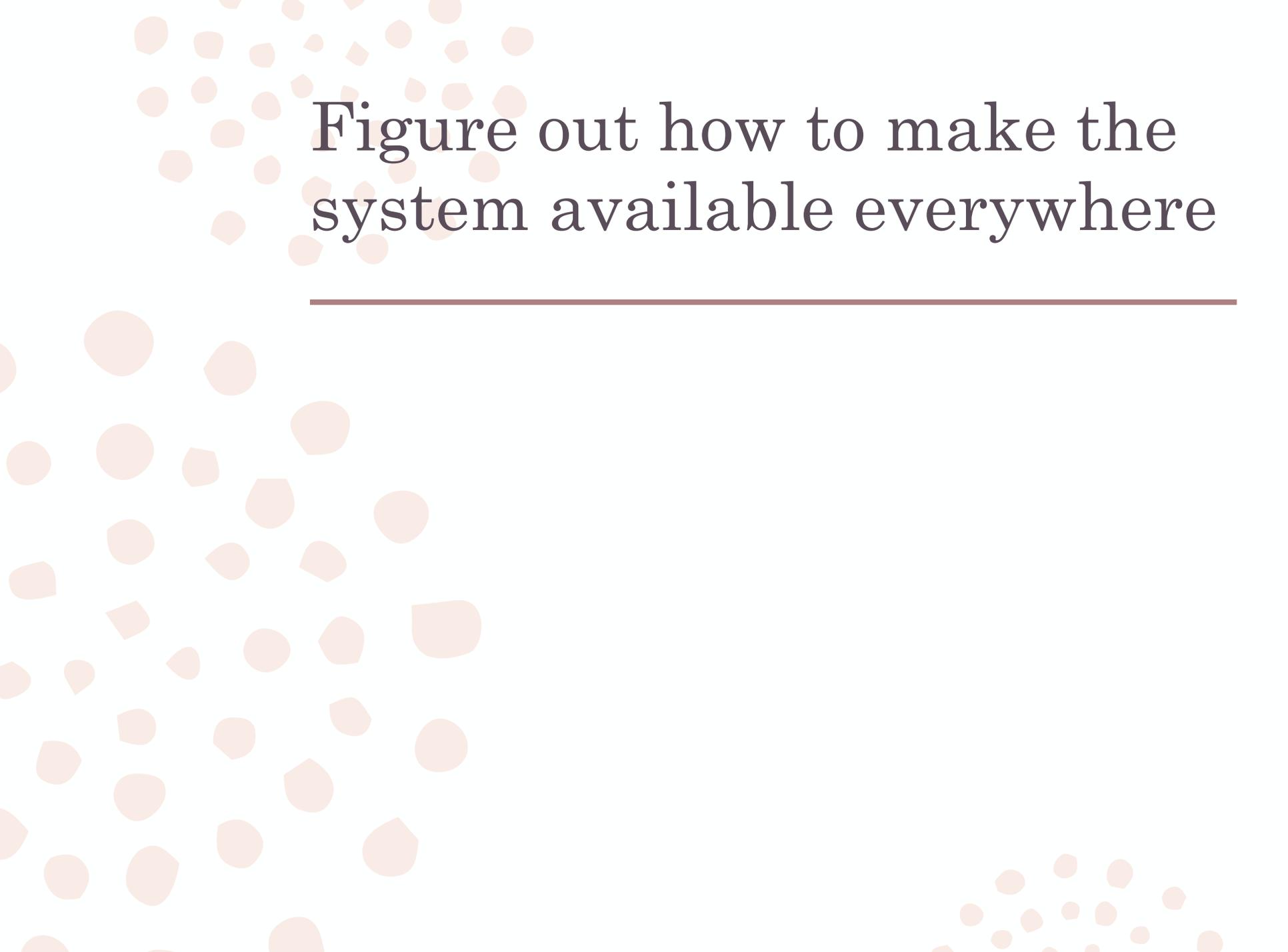


Figure out how to make the
system available everywhere

AAC

- We must provide every individual with complex communication needs with a communication system that enables their right to communicate.
- We must believe in their ability to use language and give them a system that enables them to develop and use language.

AAC

-
- If we “do not have the skills and commitment requires to provide support for AAC system use, abandonment of the system is likely”.
 - Beukelman & Mirenda, 2013