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IJLCD Winter Lecture

What makes language interventions work – exploring the active ingredients

12 February 2025

#IJLCDWinterLecture






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Welcome and housekeeping

#IJLCDWinterLecture

Housekeeping

- Justyna Szeller (RCSLT Host) is on hand to help with any **technical queries**; you can get in touch with her via the **chat button**
- You can send in **questions** to our speakers today by using the **Q&A button**
- This event is being recorded and will be made available on the RCSLT website along with the presentation slides

Housekeeping

- Following the lecture there will be time for Q&A
- After the Q&A you will be asked to complete a post-lecture evaluation
  - This will be available to you all via a QR code
  - Please submit your completed evaluation as soon as possible

IJLCD 2024 Editors' Prize

- Mark Jayes (Associate Editor) will be awarding the 2024 Editors' Prize
- He will begin by explaining the process that he and Saloni Krishnan (another Associate Editor) followed to select the top article

IJLCD 2024 Editors' Prize

- We lead the editorial team through a robust process to select the top article
  - After considering all the articles published in 2024, each editor nominated their top pick and these were individually ranked by the team
  - Attention was given to early career (rather than established) researchers. Articles were *excluded* if one of the authors is/has been a recent editor of the IJLCD

IJLCD 2024 Editor's Prize

- Awarded to Loretta Gasparini and colleagues

RCSLT International Journal of Language & Communication Disorders

RESEARCH REPORT | Open Access

Identifying early language predictors: A replication of Gasparini et al. (2023) confirming applicability in a general population cohort

Loretta Gasparini, Daisy A. Shepherd, Jing Wang, Melissa Wake, Angela T. Morgan

First published: 01 July 2024 | https://doi.org/10.1111/1460-6984.13086

Introductions

- On behalf of the *International Journal of Language & Communication Disorders*, Clare McCann and I want to extend a very warm welcome to Professors Pauline Frizelle and Cristina McKean who will deliver IJCLD's annual winter lecture, and to all of you who have joined us today

RCSLT

What makes language interventions work – exploring the active ingredients

Professor Cristina McKean
Professor of Child Language Development & Disorders
Department of Education, University of Oxford

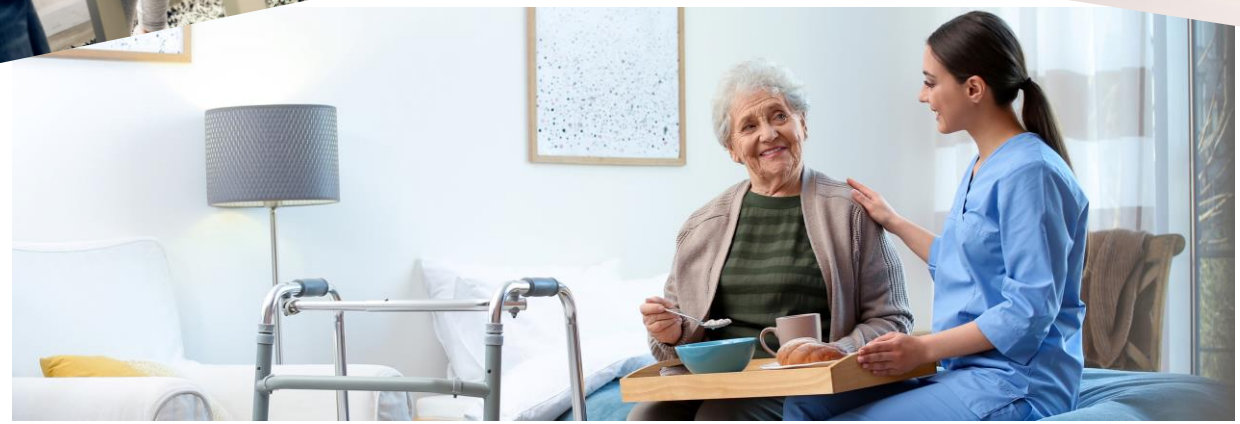
Professor Pauline Frizelle
Department of Speech and Hearing Sciences, University College Cork

#IJLCDWinterLecture

What makes language interventions work – exploring the active ingredients

- What are active ingredients and why are they important?
- What do we know about active ingredients in (D) LD interventions?
- New insights
  - BEST - Specifying active ingredients for efficient intervention
  - Down syndrome - How much is enough – and can you have too much?
  - DLD – Comparing varying schedules of delivery
- New Directions – TICLD

Active ingredients and dosage



Warren et al., 2007

Four Quantitative Components

- Dose
- Dose Frequency
- Total intervention duration
- Cumulative intervention intensity

One Qualitative Component

- Dose Form

Warren 2007 Proctor-Williams 2009; Frizelle et al 2021a Frizelle et al 2021b

Quantitative Active Ingredients

Dose

- Dose: the number of properly administered teaching episodes during a single intervention session
  - average rate of teaching episodes per unit of time
  - the length of the intervention session,
  - the distribution/density of episodes over the session.

Dose frequency

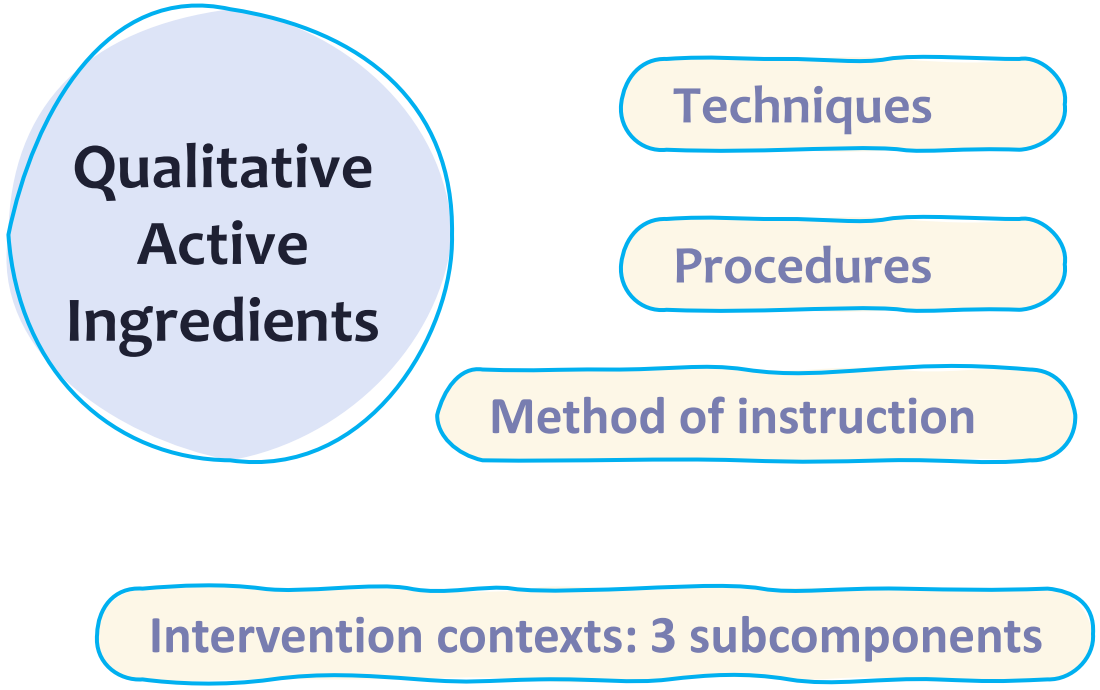
- the number of intervention sessions per unit of time (i.e., a day, a week)

Total intervention duration

- the total period of time for which a specified intervention is provided.

Cumulative intervention intensity

- Dose X Dose Frequency X Total Intervention Duration.



- The commonly used **techniques, procedures, methods of instruction** and **intervention contexts** that constitute teaching episodes
- The specific actions/teaching behaviours thought to have benefit
- The combination and order of technique delivery
- The manner in which techniques are delivered, i.e., with or without explicit instruction (explicit vs. implicit)
- The activity within which the technique/teaching behaviour is being delivered
- Where the activity sits in the child-centred, clinician-directed continuum
- The degree of variability/uniformity in the linguistic input or materials used

Proctor-Williams 2009; Frizelle et al 2021a Frizelle et al 2021b

Why is dosage important?

- Is what I am providing enough to make a meaningful change?
- Is there a point where what I am doing is not going to make a difference anymore?
- How can I make the best use of the available time I can offer?
- Are my decisions about dosage based on custom and practice and available resource or on evidence?

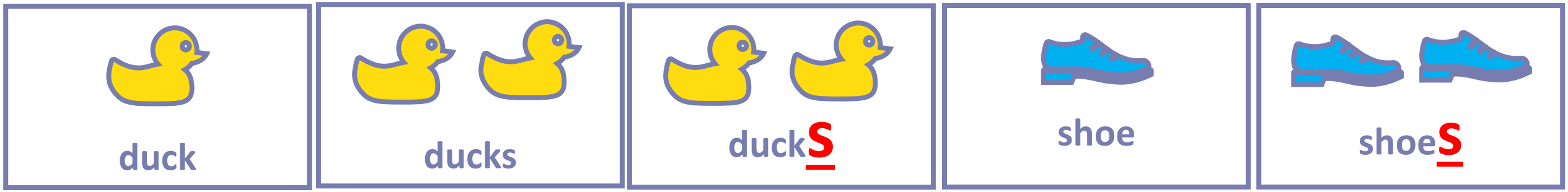
Why is dosage important?

Using theory to drive efficacy & efficiency

Manipulations of qualitative active ingredients of an intervention influence the amount and nature of learning which takes place during an intervention.

Deciding precisely how to make such modifications MUST be driven by our knowledge and theories regarding

- learning mechanisms relevant to the targeted domain
- the nature of the underlying impairment



Using theory to drive efficacy & efficiency

Manipulations of qualitative active ingredients of an intervention influence the amount and nature of learning which takes place during an intervention.

Deciding precisely how to make such modifications MUST be driven by our knowledge and theories regarding

- learning mechanisms relevant to the targeted domain
- the nature of the underlying impairment

Designing and delivering optimal dosage regimen therefore requires us to engage with theories underpinning the interventions we use and consider how they might best be applied for our individual client.

What makes language interventions work – exploring the active ingredients

- What are active ingredients and why are they important?
- What do we know about active ingredients in (D) LD interventions?
- New insights
  - BEST - Specifying active ingredients for efficient intervention
  - Down syndrome - How much is enough – and can you have too much?
  - DLD – Comparing varying schedules of delivery
- New Directions – TICLD

What do we know about active ingredients in interventions for children with (D)LD?

What are the Quantitative implications?

No longer enough for interventions to be effective but we need them also to be efficient.

Will one intervention technique achieve the same result as another but with half the number of sessions / amount of input? What works most efficiently?

What do the systematic reviews tell us?

Spaced versus concentrated?

Significant variation in the literature – not always adequately described

concentrated?

spaced?

Re-encoded during sessions, consolidated between sessions

Within Session dose – targeting morphosyntax

Manipulating Recasting

(Proctor Williams & Fey, (2009))

- 30 recasts across 5 sessions vs 30 across 2 sessions
- No difference in spaced vs concentrated approach - Ineffective at both densities
- Dose very low

(Plante et al., 2019)

- 24 doses per 30 min session, 24 doses per 15 min session
- +ve outcomes but were no differences in how children performed between conditions
- high-density dose delivery method a more efficient delivery method.
- No spaced advantage

Dose Frequency across sessions –targeting morphosyntactic abilities

- Expansions, cloze procedures and models – Bellon-Harn et al (2012)
  - concentrated (4 times a week X 6 weeks) 24 sessions
  - spaced treatment schedule (twice a week X 12 weeks) 24 sessions
  - +ve outcomes but were no differences in how children performed across conditions

- Enhanced conversational recasts - Meyers-Denman et al., (2016)
  - concentrated (3 x 10-minute sessions within a 4-hour period, 5 days a week) = 30min
  - spaced condition (1 x 30 min session 5 times a week) = 30 minutes
  - +ve outcomes but were no differences in how children performed across conditions

- Explicit instruction, focused stimulation, recasting, imitation. Smith-Lock et al (2013).
  - Spaced - 8 one-hour sessions over an 8-week period
  - Concentrated 8 one-hour sessions given over an 8-day period
  - showed significant improvement in the group that received the spaced treatment, not for the concentrated treatment group
  - **Dose not controlled for**

Dose Frequency –targeting word learning

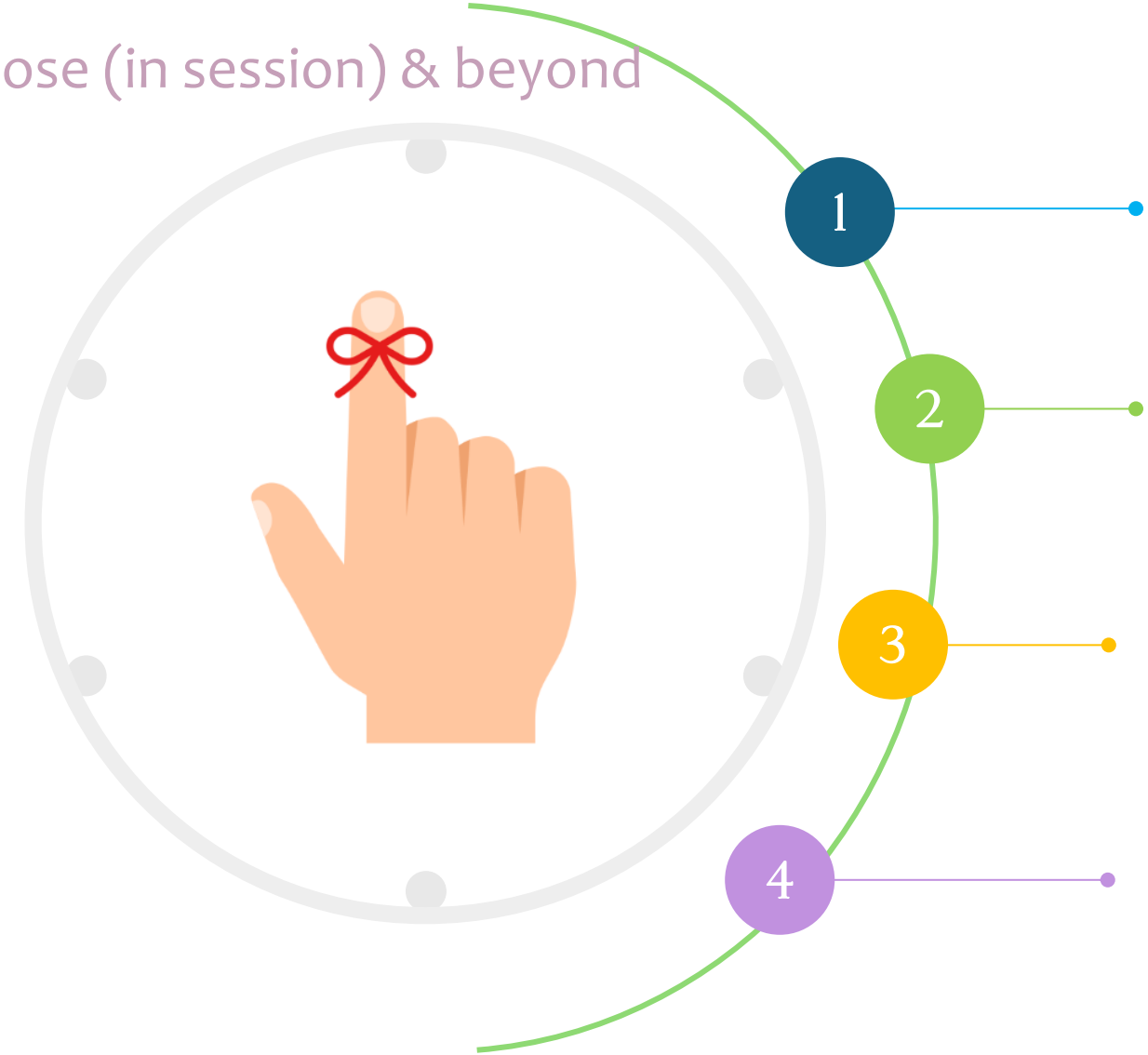
- Context of book reading, target word, word definitions, supportive context sentence, synonym – Storkel et al., 2017; 2019
  - 1 of four word-learning treatment intensities: 12, 24, 36, or 48 exposures
  - dose per session depended on the treatment intensity e.g. for 12 exposures the target word was repeated 3 times in each book and the book was read 4 times
  - Response to treatment improved as intensity increased from 12 to 24 to 36
  - results indicated 36 exposures to be the optimal dose

Follow up study building on this work manipulated 36-word exposures

- 4 X 9 (dose = 4, dose frequency = 9)
- 6 X 6 (dose = 6, dose frequency = 6)
- 9 X 4 (dose = 9, dose frequency = 4)
- +ve outcomes regardless of the dose and dose frequency format
- similar rates of learning, but only 40% of the words that were correctly defined at the end of treatment were retained 5 /6 days later

Take Home- Effective intervention delivery – Quantitative Implications

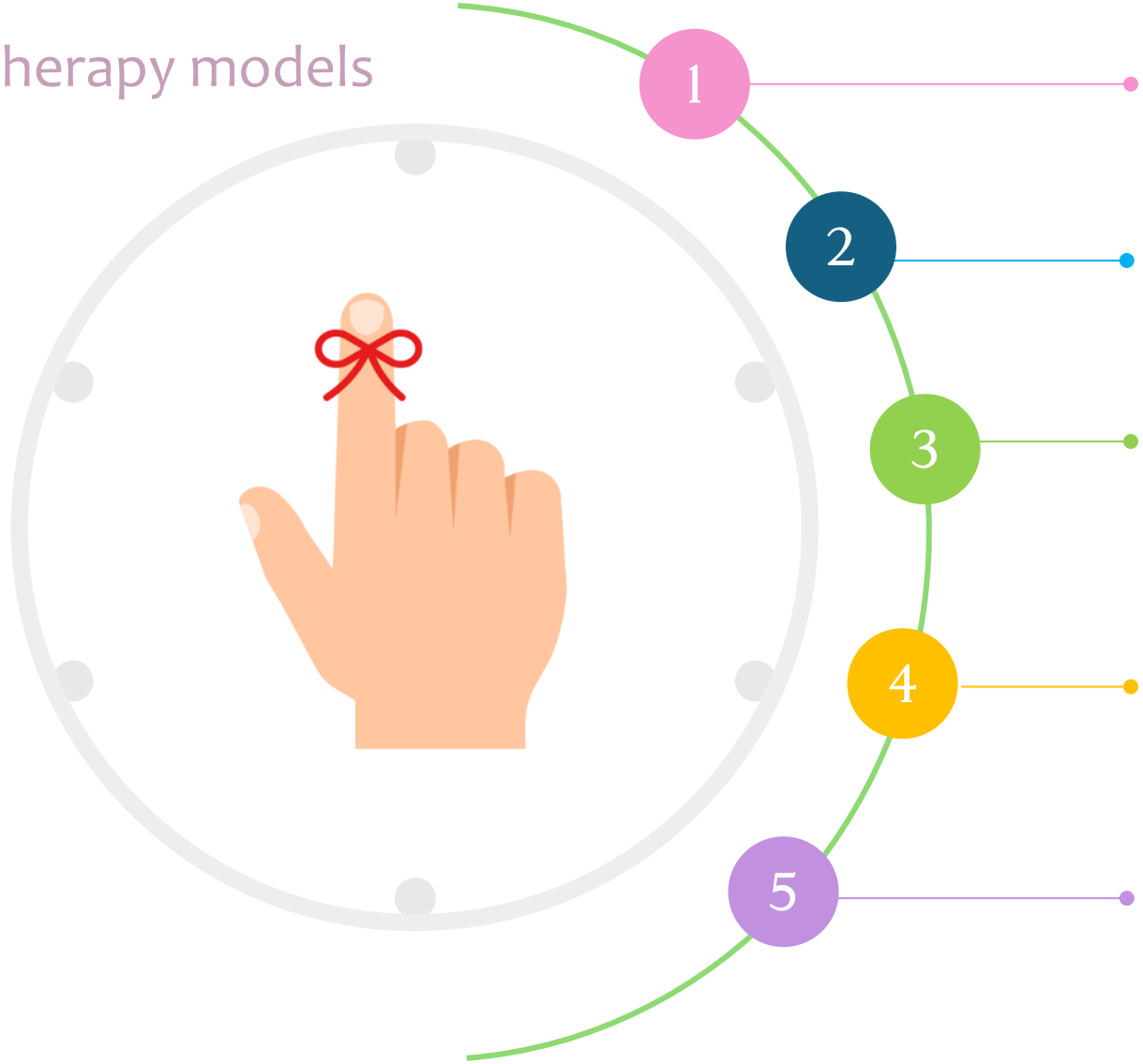
Dose (in session) & beyond



1. **Maintain high levels of within session dose/ overall dose**
2. **Be clear about what constitutes a dose**
3. **Think about what your cumulative intervention dosage will be. Is it sufficient to effect change?**
4. **Think about the dose density considering the overall session length what is achievable within a session?**

Take Home- Effective intervention delivery – Quantitative Implications

Therapy models



1. Weekly/ fortnightly sessions – yes but keep the dose high
2. **More not always better**
3. **No magic number ☹ - intervene to a pre-specified criterion**
4. **Ethicality of providing treatment at a dosage that will not effect change????**
5. **Service delivery models need to be driven by evidence**

Effective intervention delivery- What are the Qualitative implications?

Qualitative active ingredients - Linguistic Variability (morphosyntax)

Highly variable **linguistic** input facilitates grammatical morpheme learning (plural, 3rd person singular) in children with DLD (Plante et al 2014)

- Low variability condition –12 different verbs twice each during recasts
- High variability condition - 24 different verbs once during their treatment.
- Dose equal across conditions
- Results indicated that only the group in the high variability condition showed significant change in their use of target v's control morphemes

Qualitative active ingredients - Complexity

A complexity-based approach appears to enhance treatment effects but whether effects are driven by variability or complexity (as the underlying element) has yet to be established. From a clinical perspective variability may be easier to operationalise. Van Horne 2017; 2018)

- hypothesis - children who begin with hard first condition might be slower to show initial gains but may then speed up as they learn to generalise.
- ½ children began Tx with easier to inflect verbs (easy first)
- ½ children began harder to inflect verbs (hard first),
- inflection difficulty was determined by frequency, phonological complexity and telicity (completeness of the event described by the verb, telic – *drop*, atelic - *wiggle*)
- Overall, the hard group first made greater gains
- similarities between a high-variability approach and a hard first approach

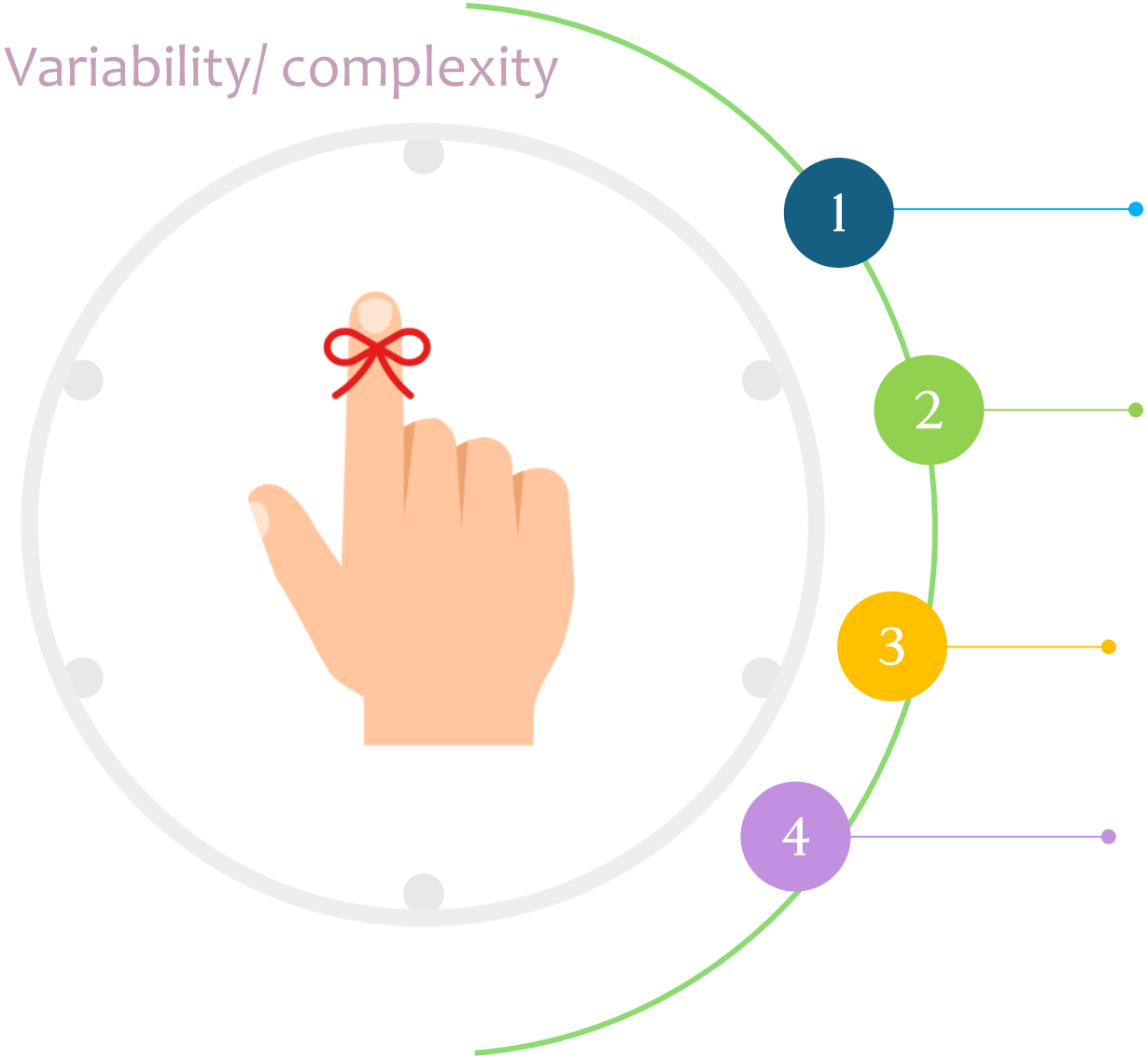
Qualitative active ingredients - Object Variability

Increasing variability in how an object is represented has potential to improve children's ability to generalize their lexical knowledge and therefore increase intervention efficacy (Aguilar et al. 2018)

- ½ children trained using 3 different objects for each new word targeted
- ½ children trained with 3 identical objects representing each target word.
- No group differences when tested on items used in Tx
- High variability group performed better on generalization items

Take Home- Effective intervention delivery – Qualitative Implications

Variability/ complexity



Think about linguistic variability and object variability

If you are targeting a morpheme e.g., 3rd person singular, then vary the verbs that you use rather than using lots of repetition of the same verbs

Avoid using too many common verbs, by using 'harder' verbs, we are helping children to extract the morphosyntactic rule

If targeting vocabulary, vary how the target referent is represented – use different images, makes more explicit the characteristics of a given object!

Qualitative active ingredients - working in groups?

Enhanced conversational recasting appears to be more effective than merely recasting in the presence of a child. (Eidsvag et al. 2019)

- Comparing modelling with enhanced conversational recast treatment
- individual treatment (children are only exposed to their own morphology target)- one morpheme over 5 weeks
- treatment carried out in a pair (children additionally exposed to their partner's target) different target morphemes for each child
- +ve tx effects for both conditions
- children in the paired condition showed no significant gains in their ability to produce other child's target morpheme

Take Home- Effective intervention delivery – Qualitative Implications

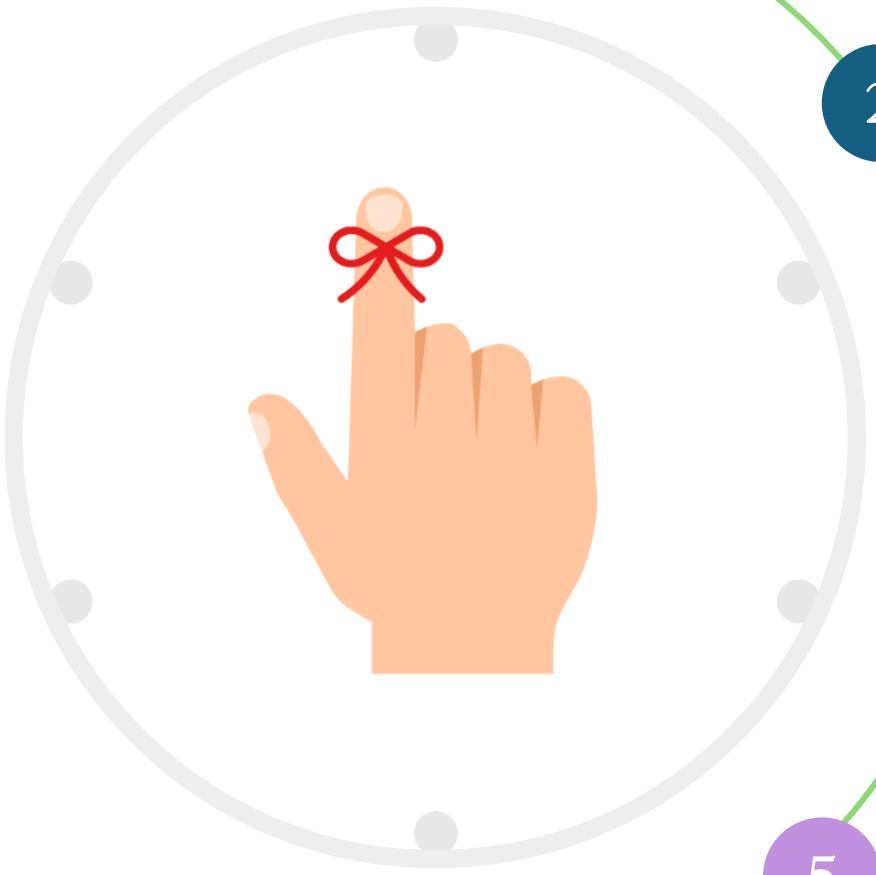
Working in pairs?

1

Unless the child is focused /attending to the particular morpheme you are working on, they don't seem to get any incidental benefit from being exposed to what another child is working on.

Take Home- Effective intervention delivery – Qualitative Implications

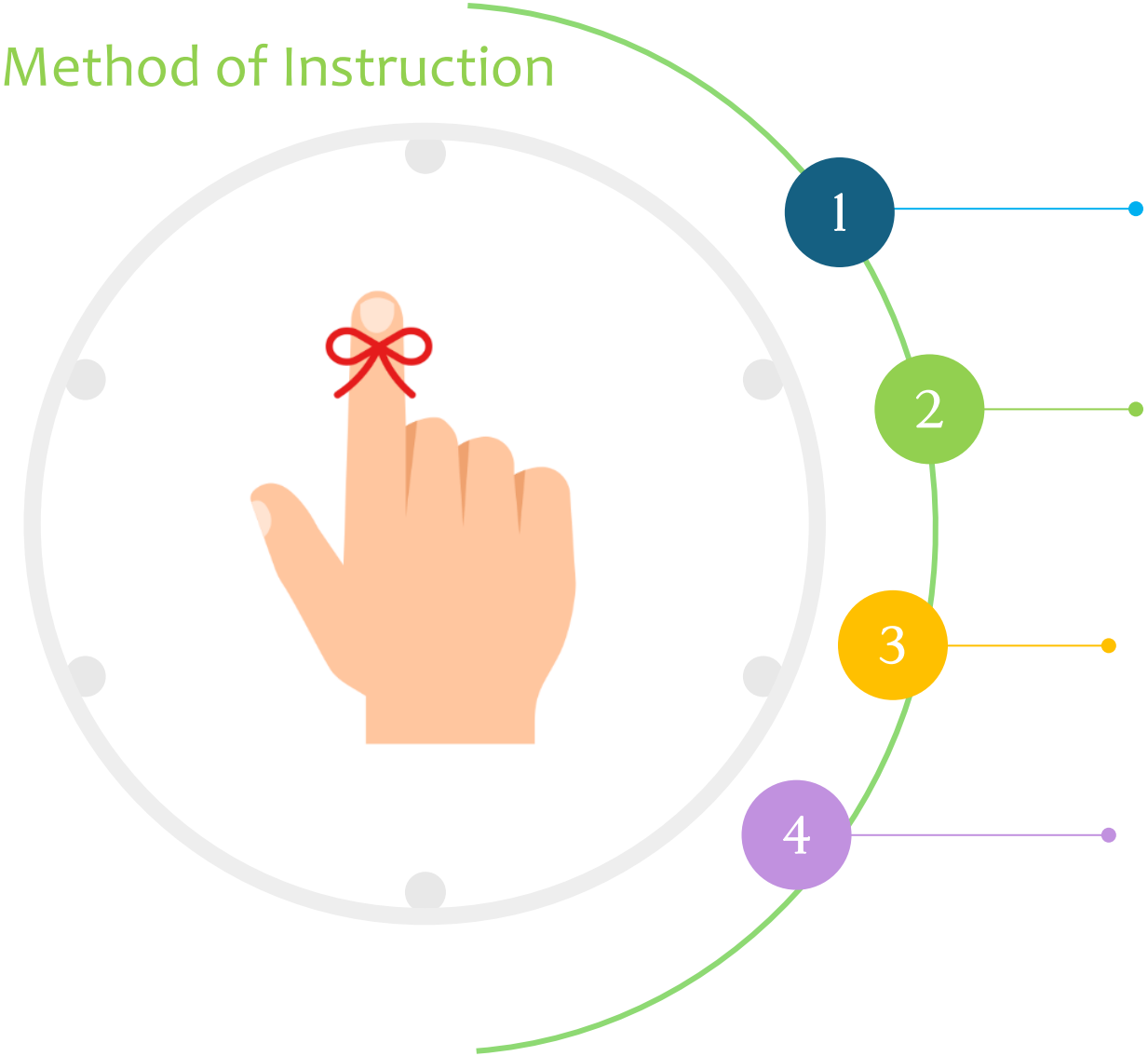
Techniques/ procedures



1. **Number of studies showing advantages for expressive practice**
2. Prompting a child to produce an utterance, with modelling or recasting is more effective than recasting alone (even at lower doses)
3. **Cued Elicitation was more effective than recasting – although dose difference likely in favour of elicitation**
4. **With higher doses the addition of modelling post recasting seems to consolidate child learning**
5. **Children with higher levels of language may not be as sensitive to the order of techniques as those who are younger/ have lower language levels**

Take Home- Effective intervention delivery – Qualitative Implications

Method of Instruction



1. Be aware of what method of instruction you are using – many techniques have elements of both
2. Even with a lower dose, an explicit approach has been found to be more effective than an implicit one.
3. Adding an element of explicit instruction to an implicit approach appears to enhance learning.
4. If children are at an age/language level that they can follow a simple explanation of a rule, then give it!!

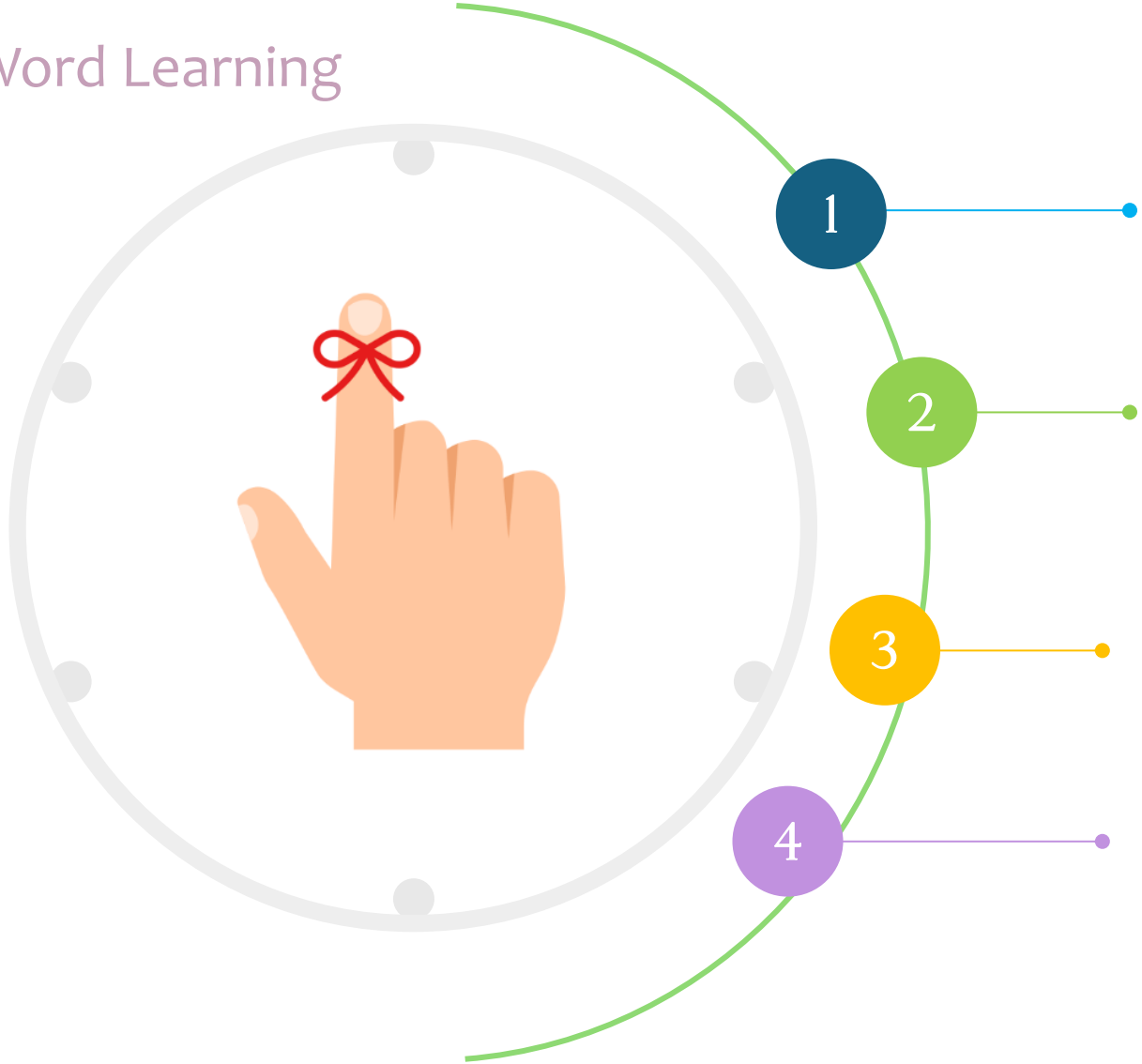
Qualitative active ingredients - Word learning?

Asking children to retrieve words (with other words intervening) helps with word learning and retention more than without intervening words. Haebig et al. 2019

- Tx session:
- Children exposed to the word with its associated picture and a simple word definition (study)
- a picture prompt where the child was asked to recall the word and the definition (retrieval)
- initial exposure again with definition as feedback (study)
- When children were asked to retrieve it was either immediately after the first step, or with two words intervening.
- Children performed better when there were words intervening – despite the fact that this condition had a reduced expressive dose

Take Home- Effective intervention delivery – Qualitative Implications

Word Learning

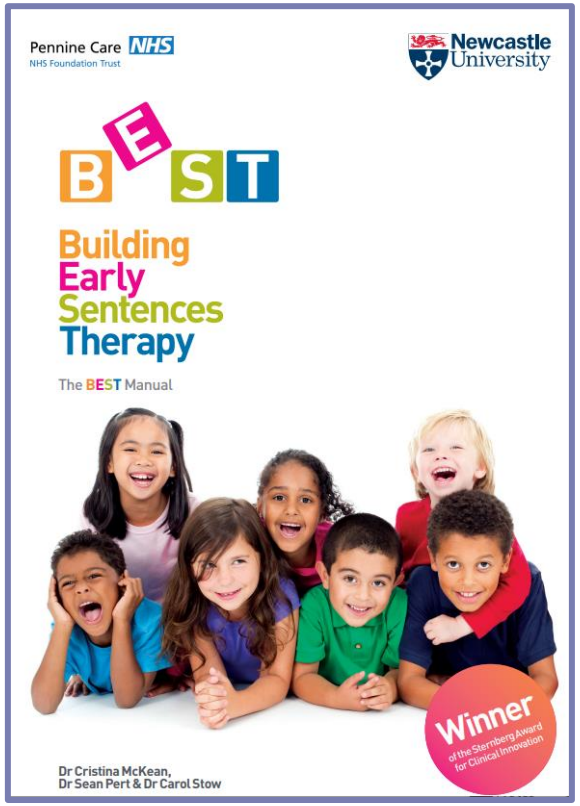


1. New word learning better to create space between initial exposure/information given, and asking child to retrieve word information
2. Type of word definition provided should be driven by the desired outcome and also by the child's level of language
3. Video and static stories equally effective in children's word learning
4. Iconic gestures work effectively to support word learning

New Insights from 3 recent studies

Specifying active ingredients for efficient intervention

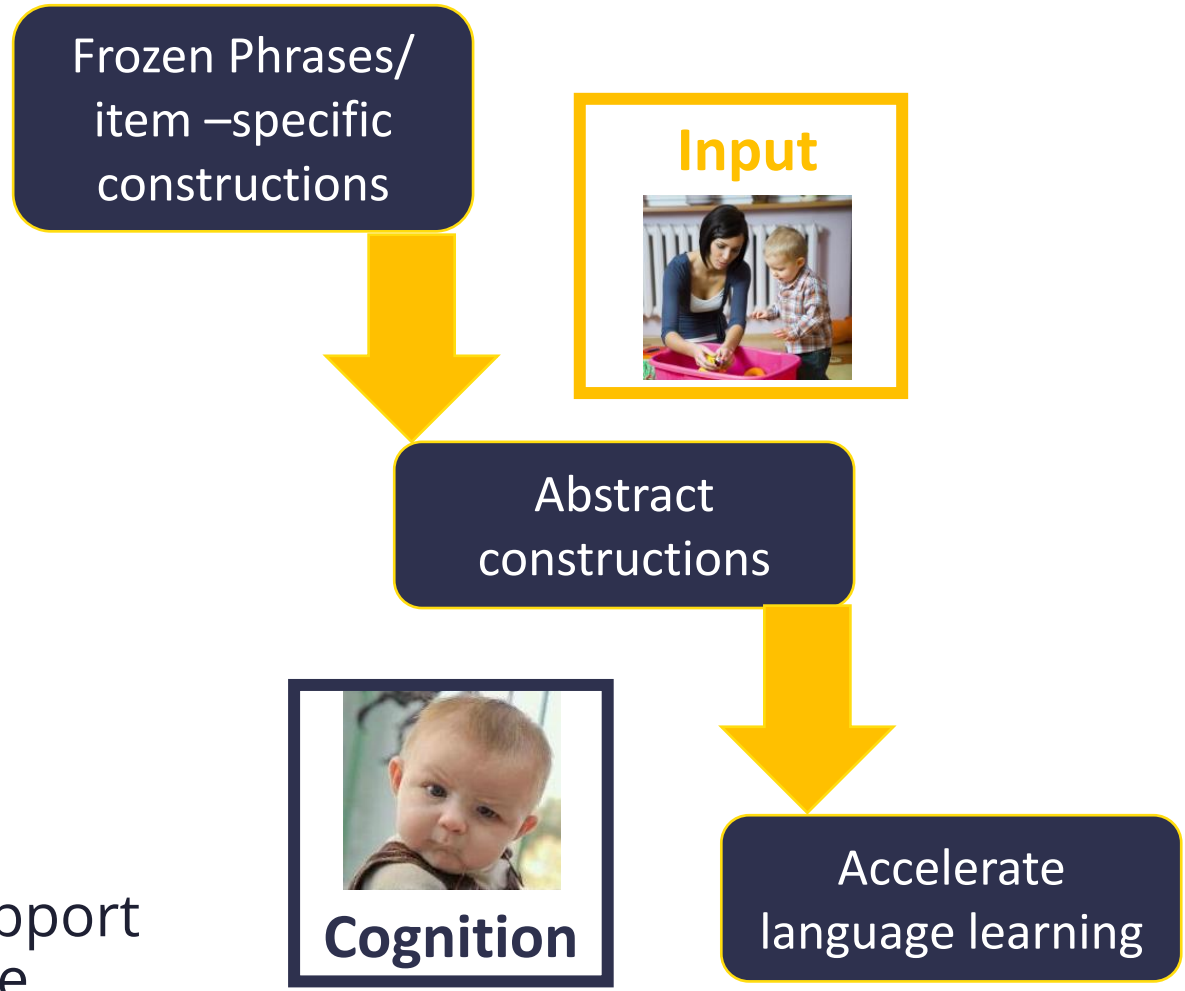
- Building Early Sentences Therapy – BEST
- A specialist language intervention for children aged 3; 06 – 6 yrs who need support to use 2, 3 and 4 clause element sentences
- Active ingredients are based on usage-based or constructivist models of language acquisition and knowledge of (D)LD learning mechanisms
- 15 minutes 2x week for 16 sessions in small group (3 – 6 children)
- Potential to be a highly efficient model of intervention



https://research.ncl.ac.uk/best/

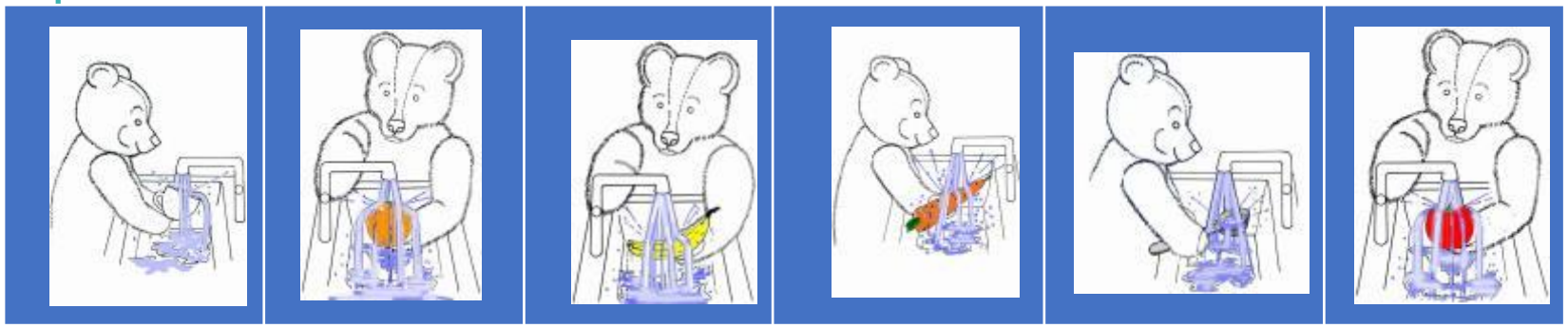
Specifying active ingredients for efficient intervention

- BEST is based on usage-based/ constructivist theories of language development
- Children move from 'fixed', rote-learned constructions to more abstract, flexible representations
- Once abstract representations are formed then language learning accelerates
- The drivers of this change are
  - Input
  - Cognitive tools
- BEST manipulates the nature of the input to support children with language difficulties to apply these cognitive 'tools' to language learning



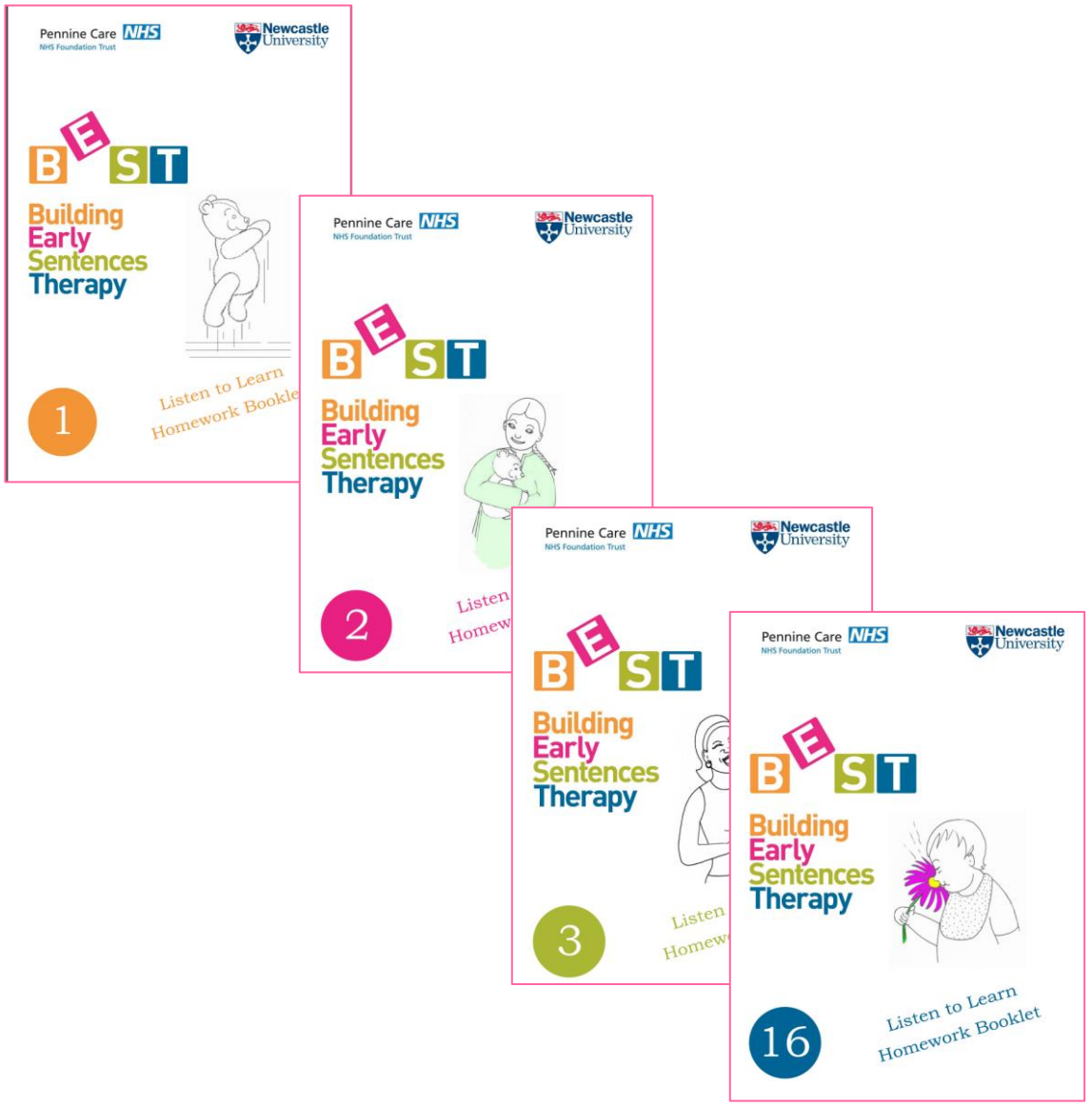
Manipulating the input in BEST…….

- 11 sets of paired verbs, each pair with the same Predicate Argument Structure
- e.g. agent action; agent action patient; agent action patient locative
- A joint action routine with toys with 2 phases
- Phase 1: Input with variation



- Phase 2 Output with contrast & variation

- Within each session the two-phases are repeated 3x
- Each session therefore exposes the children to 6 different verbs
- A homework booklet with all of the verbs targeted in each session is also sent home



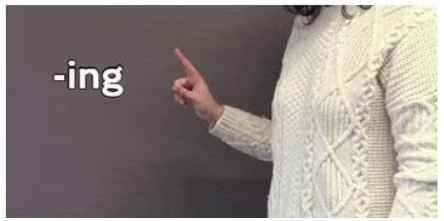
- Signs are used to represent both content words and morphology

https://research.ncl.ac.uk/best/

- Rotate through verb pairs over the course of the 16 sessions

- Mastery not required each session but is achieved over the 16 sessions

Morphology Signs (PGSS):



Content Words Signs (Makaton):

Cognitive tools leveraged in BEST.....

Retention

Schematisation

Categorisation

Cultural Learning

Cognition

Analogy

Intention Reading

Distribution analysis

Bootstrapping

Mapping

Variation around the verb

Promotes schematisaation – slot and frame representations develop - The X is washing the Y

Promotes categorisation - things that can be washed, things that can be eaten

Lieven *et al* (1997); Gomez *et al* (2002); Mandler (2000); Tomasello & Brooks (1998)

Cognitive tools leveraged in BEST.....

Retention

Schematisation

Categorisation

Cultural Learning

Cognition

Analogy

Intention Reading

Distribution analysis

Bootstrapping

Mapping

Contrast between sentences with different verbs & same PAS

-

Non-overlapping sets of nouns as agents or patients

Promotes analogy to create a representation of a PAS e.g agent action patient

Childers & Tomasello (2001) Gentner et al (1995, 1997, 1998)

Cognitive tools leveraged in BEST.....

Retention

Schematisation

Categorisation

Cultural Learning

Cognition

Analogy

Intention Reading

Distribution analysis

Bootstrapping

Mapping

Constant morphological frame

-

Signing of content and morphology

Promotes bootstrapping and distribution analysis supporting analogy and abstraction of roles within sentence

Childers & Tomasello (2003); Ambridge & Lieven (2011) Gentner & Medina (1998)

Specifying active ingredients for efficient intervention

We know that this highly intentional manipulation of active ingredients pays off…….

- BEST Is effective in improving production standard scores when compared to 'Treatment as Usual' (Trebacz et al 2024 *IJLCD)*
- Signing of content and morphology is an 'active ingredient' (Trebacz et al 2024 *IJLCD)*

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RESEARCH REPORT

Piloting building early sentences therapy for pre-school children with low language abilities: An examination of efficacy and the role of sign as an active ingredient

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Funding information
Newcastle University Research Excellence Academy

Abstract

Background: Early intervention is recommended for pre-school children with low language. However, few robustly evaluated language interventions for young children exist. Furthermore, in many interventions the theoretical underpinnings are underspecified and the 'active ingredients' of the interventions not tested. This paper presents a quasi-experimental study to test the efficacy and examine the active ingredients of Building Early Sentences Therapy (BEST): an intervention based on usage-based theory designed to support young children to understand and produce two-, three- and four-clause element sentences. BEST manipulates the input children hear to support them to harness the cognitive mechanisms hypothesized in usage-based theories to promote the development of abstract linguistic representations. One such input manipulation is the use of signing alongside verbal input signalling both content and morphology of target sentences.

Aims: To examine whether (1) BEST is more efficacious than treatment as usual (TAU); and (2) signing of content and morphology is an active ingredient of the intervention.

Methods & Procedures: A quasi-experimental study recruited children aged 3;5–4;5 years from 13 schools. Schools were assigned to receive either BEST with sign, BEST without sign or TAU. The TAU group received their usual classroom

Specifying active ingredients for efficient intervention

We know that this highly intentional manipulation of active ingredients pays off.....

- In a cluster RCT involving 102 children
- BEST is more effective than an active control (A-DLS)
- Large Effect Size for production standard scores (d = .55)
- Using EEF guidance this is equivalent to a gain of 7 months when compared to A-DLS.

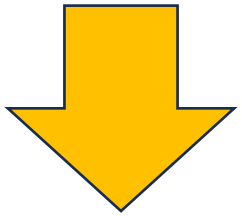
HvdL
THE HEATHER VAN DER LELY FOUNDATION
RESEARCHING LANGUAGE DISORDERS IN CHILDREN

McKean et al under review

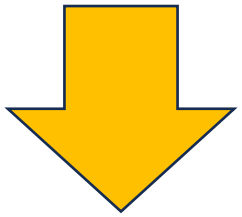
LIVELY

Specifying active ingredients for efficient intervention

Detailed specification of theoretically motivated active ingredients



Intentional design and high intervention intensity



Highly efficient SLT interventions

The feasibility of an online language through music programme and the impact of dosage on vocabulary outcomes of young children with Down Syndrome

Pauline Frizelle, Eva Mcmullan, Eibhlín Looney, Ciara O'Toole, Nicola Hart

Lámh
Communication Augmentation Sign System

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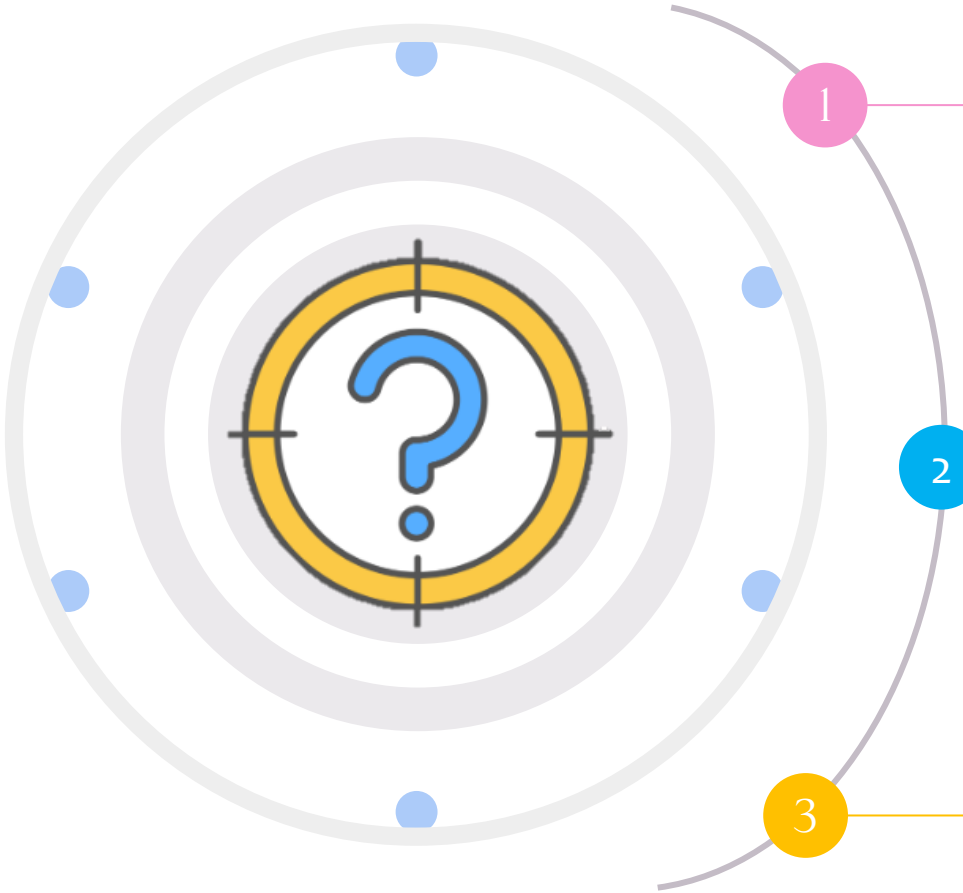
Research Questions

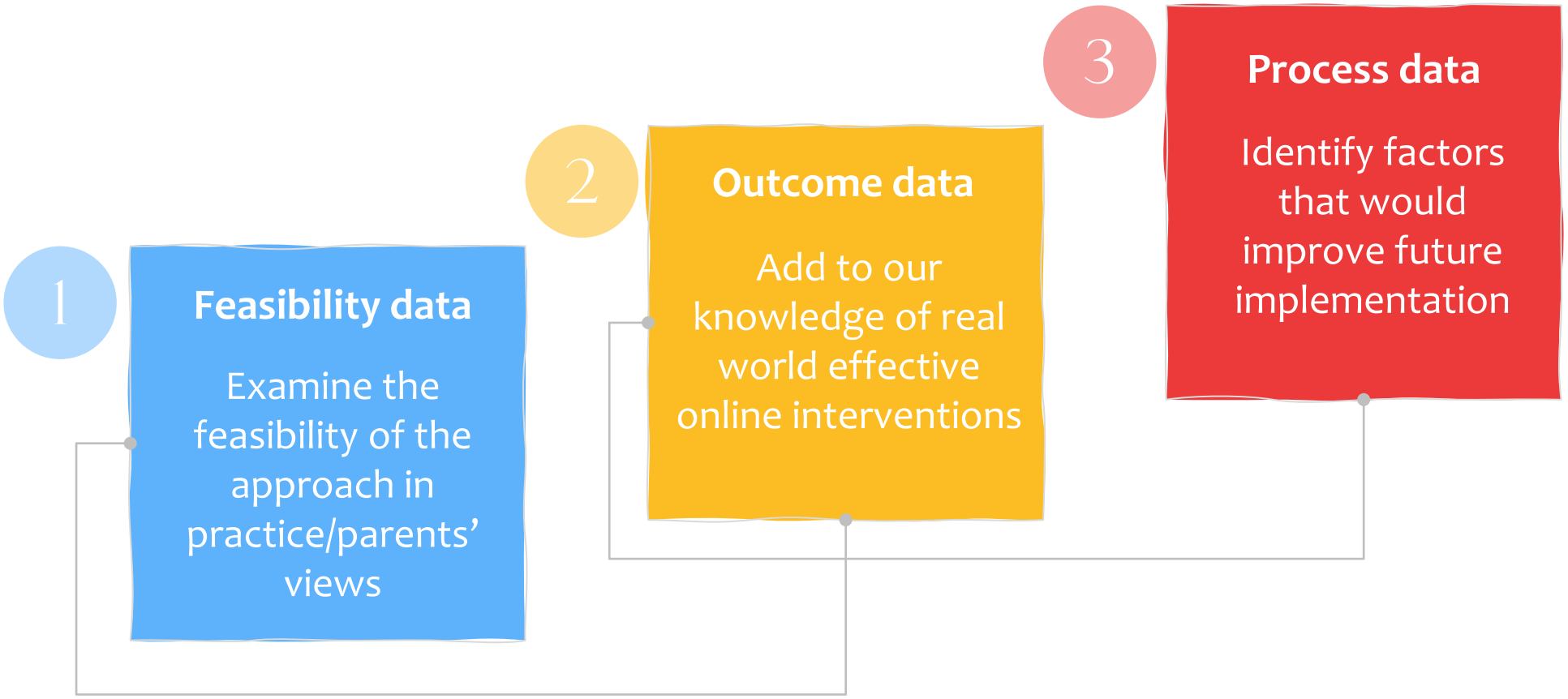


1. What do **parents consider important** when implementing a **home-based language** through **music intervention** with young children with DS?

2. Following the implementation of a language through music programme, what is the **effect of dosage** on the **vocabulary outcomes** of young children with DS, with respect to: **(i)** understanding/use of signs, **(ii)** words said on imitation, and **(iii)** spontaneous use of words

3. **How acceptable** is the intervention to parents?

Mixed Method Design



Phase 2

Method
Measures
Results

12-Week Programme of Music Videos

- **Songs** chosen to **represent familiar/ easy** to remember **melodies**
- **Vocabulary** altered to **reflect DSE** checklists
- Centred around **daily routines/ common activities** (mealtimes, bathtime, people)
- **8 x videos**
  - ↳ **Final 4** videos a **composite of songs** from the previous 8 videos

Phase 2

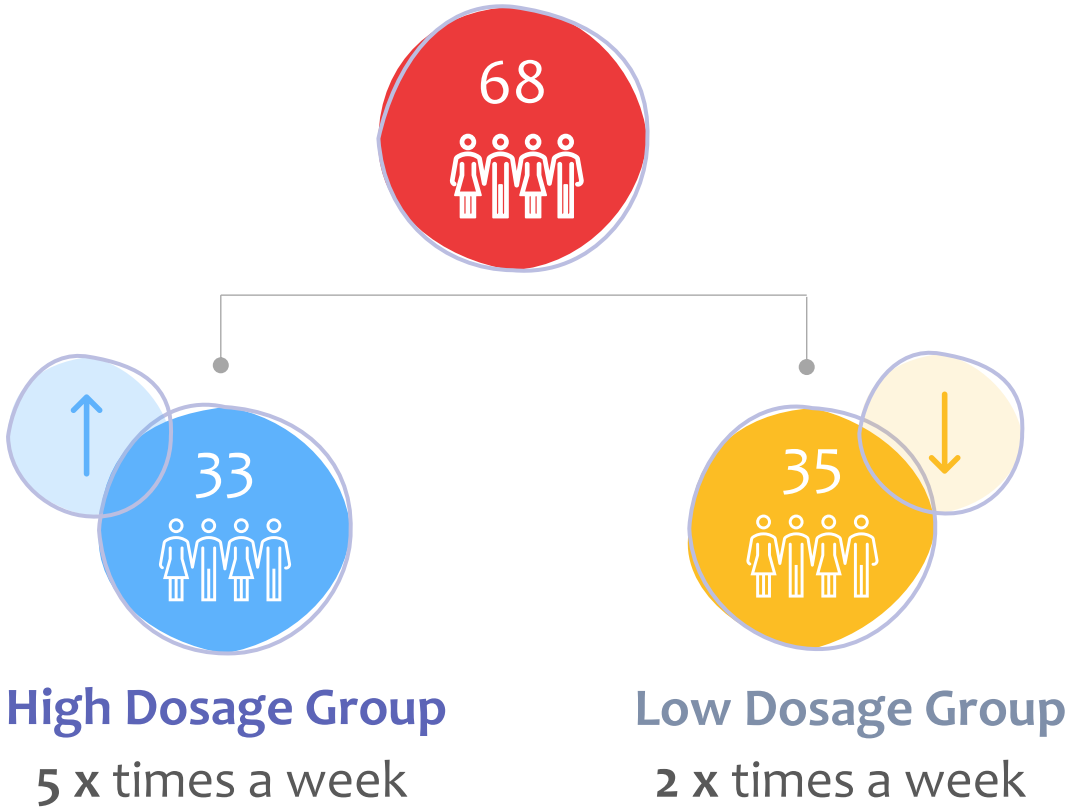
Method
Measures
Results

Each Video

- Vocabulary **exposure controlled**
- **Demonstration** of signs
- Followed by **2 songs** (sang 3 times)
  - **1 x** sign
  - **1 x** sign + objects/ background images
  - **1 x** words/ signs omitted *(for participation)*
- **Video length:** range 11.35 – 20.41 (m=17.29)
- **Song length:** range 1.33 – 2.58 (m=2.21)

Phase 2

Method
Measures
Results



High Dosage Group

5 x times a week

Low Dosage Group

2 x times a week

- Parents **logged no. of times** they **watched** videos each **week**
- **Zoom** each **Wed**
- **3** time **slots**

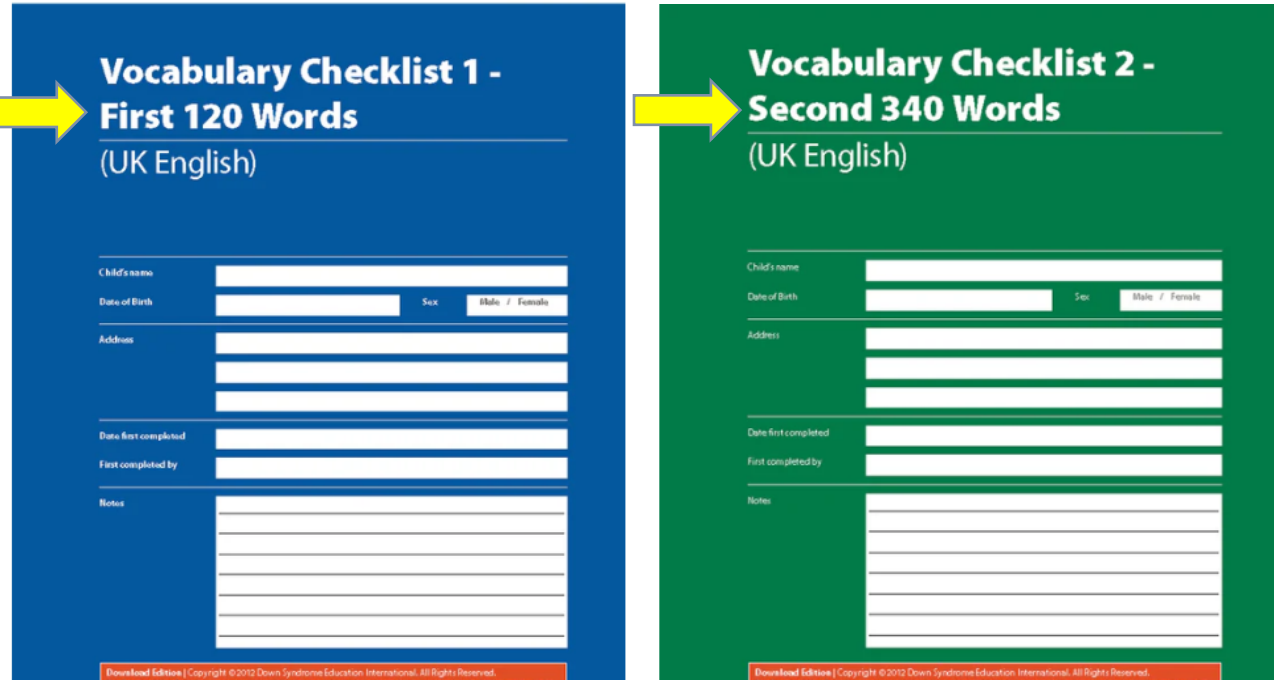
WATCH NOW

Link via **email** on **Fridays**

Phase 2

Method
Measures
Results

Parent report measure

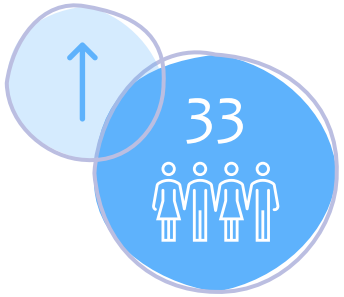


Understands + **signs**
Uses **words** on **imitation**
Uses words **spontaneously**

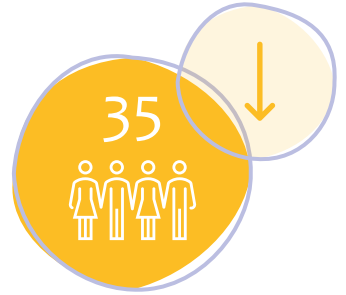
Phase 2

Method
Measures
Results

50 valid measurements for all 3 outcomes



High Dosage Group



Low Dosage Group

Both improved in the **3 outcomes**

Sig. better on **vocab** checklists

Phase 2

However…

- Significant **between-group differences at baseline** despite randomization
- Estimated using **Beta regression with adjustment for performance at baseline**

After adjusting for these **differences**

Low Dosage Group

~~**Sig. better** on **vocab** checklists~~

Phase 2

Method
Measures
Results

Exploratory interaction model used to **explore a baseline-by-group interaction**, asking the question of **whether the impact of the intervention differed** based on the participants' **performance at baseline**

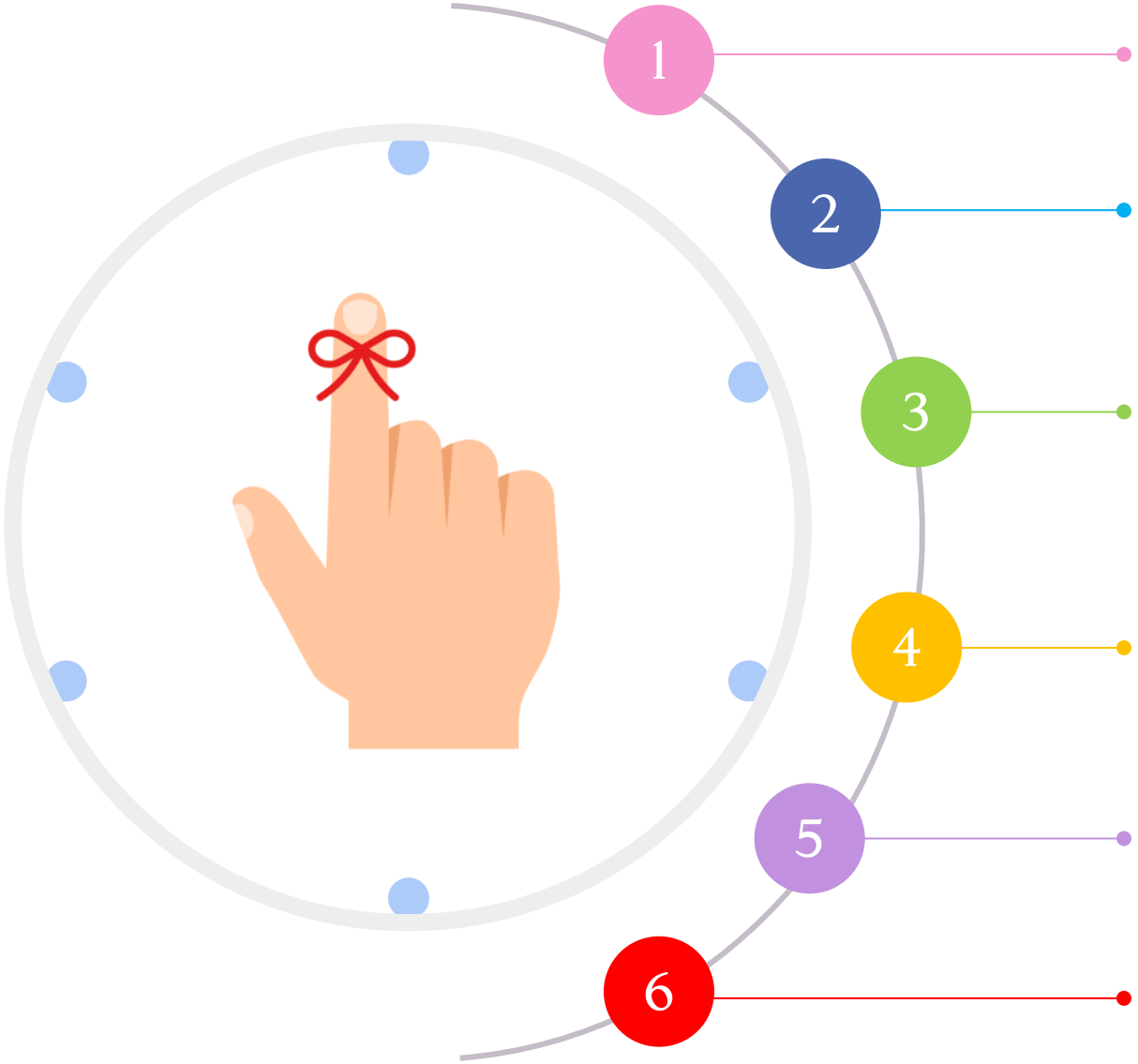
The results suggested that the **efficacy** of the **high-dose intervention** (relative to low dose) **was higher in participants with higher baseline DSE** performance (>6%)

Phase 2

A **final set of exploratory models**…… using **the actual dose** reported by parents

One unit increase in participants' **weekly average dose** was associated with **improved outcomes**

Take Home



1. **Improvement in all** who took part
2. **No additional benefit** to receiving a **higher dose** (following initial analysis)
3. **Interaction between efficacy and baseline** performance: those who performed **better at baseline benefited** more from the **high dose**
4. Using **parent logs, higher doses** across all children **were associated with better** end of study **outcomes**
5. Programme was **acceptable to parents** (minor tweaks)
6. **5 times a week** too **burdensome**

ASHA

AJSLP

Research Article

The Feasibility of an Online Language Program Delivered Through Music and the Impact of Dosage on Vocabulary Outcomes in Young Children With Down Syndrome

Pauline Frizelle,[a] Eva McMullan,[b] Eibhlín Looney,[a] Darren Dahly,[c] Ciara O'Toole,[a] and Nicola Hart[d]

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ABSTRACT

Background: Few studies have explored the feasibility of online language interventions for young children with Down syndrome. Additionally, none have manipulated dose frequency or reported on the use of music as a medium through which language and sign can be learned.

Purpose: The purpose of this study was to (a) examine the feasibility and acceptability of an online language through music intervention for young children (1–3;6 years) with Down syndrome and (b) compare effectiveness at two intervention dose frequencies.

The effectiveness of individualized morphosyntactic target identification and explicit intervention using the SHAPE CODING™ system for children with Developmental Language Disorder (DLD) and the impact of within-session dosage

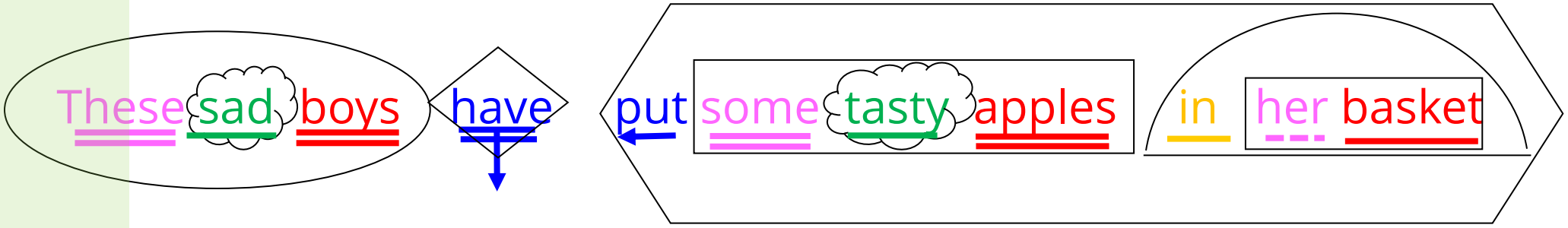
Susan Ebbels, Mollie Gadd, Lucy Hughes, Nicola Dawson,Hilary Nicoll, Caroline Burke, Samuel Calder, Pauline Frizelle

The SHAPE CODING™ system

Intervention

- Developed by Ebbels in special school for children with severe DLD
- Teaches grammar explicitly via visual coding
- Aims to help children with language disorders
  - produce and understand longer and more complex sentences
  - make fewer grammatical errors in their spoken and written language

- Assumes
  - difficulties learning language implicitly
  - can learn language using explicit teaching using relatively stronger visual skills



The SHAPE CODING™ system

Research

- Delivered by clinicians (trained in the system)
- In special schools and language units/resource bases
- Children with severe DLD aged 5-16 years
- UK / Australia
- 30 mins 1 or 2 x per week for 4-10 weeks
- Range of language structures (comprehension and expression)
- No obvious predictors of who can benefit
- Children receiving more teaching episodes made more progress

Ebbels & van der Lely, 2001, Ebbels 2007, Ebbels et al (2014, 2007), Kulkarni et al. (2014), Tobin & Ebbels (2019), Calder et al. (2020, 2021a, 2021b)

The SHAPE CODING™ system

Research

- Previous studies
  - targeted just one structure
  - for a set number of sessions

Next steps

- To maximise efficiency probably need:
  - Highly individualised targets at just the right level
  - Targeted for just the right length of time (when a child reaches a pre-determined criterion)
  - Techniques that support learning
  - High number of teaching episodes per session (dose)

The SHAPE CODING™ system

Aim

Method

Results

Feasibility of

- using target identification spreadsheet and probe tests to identify individualised targets
- using probe tests to identify when to cease intervention on a target
- following detailed intervention steps, techniques and feedback hierarchy
- delivering 40 teaching episodes per session

Effectiveness of the intervention (progress & maintenance)

- overall
- for different children
- delivered with varying numbers of teaching episodes per session

The SHAPE CODING™ system

- 8 participants (aged 8;0-10;10) with DLD
- Intervention 30 mins per week for 20 weeks (10 hours)
- Individually identified production targets
- Multiple baseline design where each target has
  - >3 baseline tests
  - Weekly probe tests until 90% criterion reached, when
    - Intervention for that target ceased and
    - New target introduced from baseline
- Maintenance tests (2, 6 & 14 weeks after intervention ceased)

The SHAPE CODING™ system

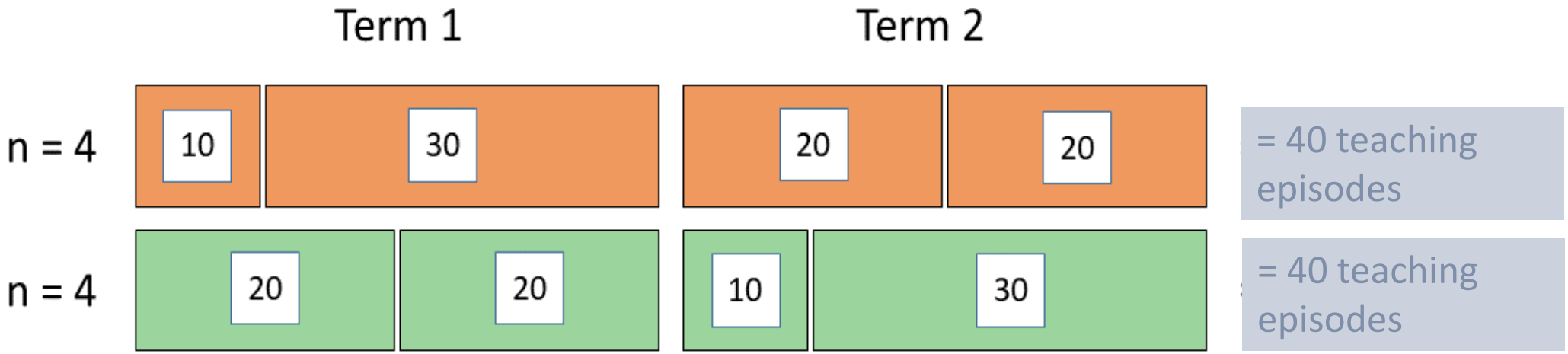
Aim

Method

Results

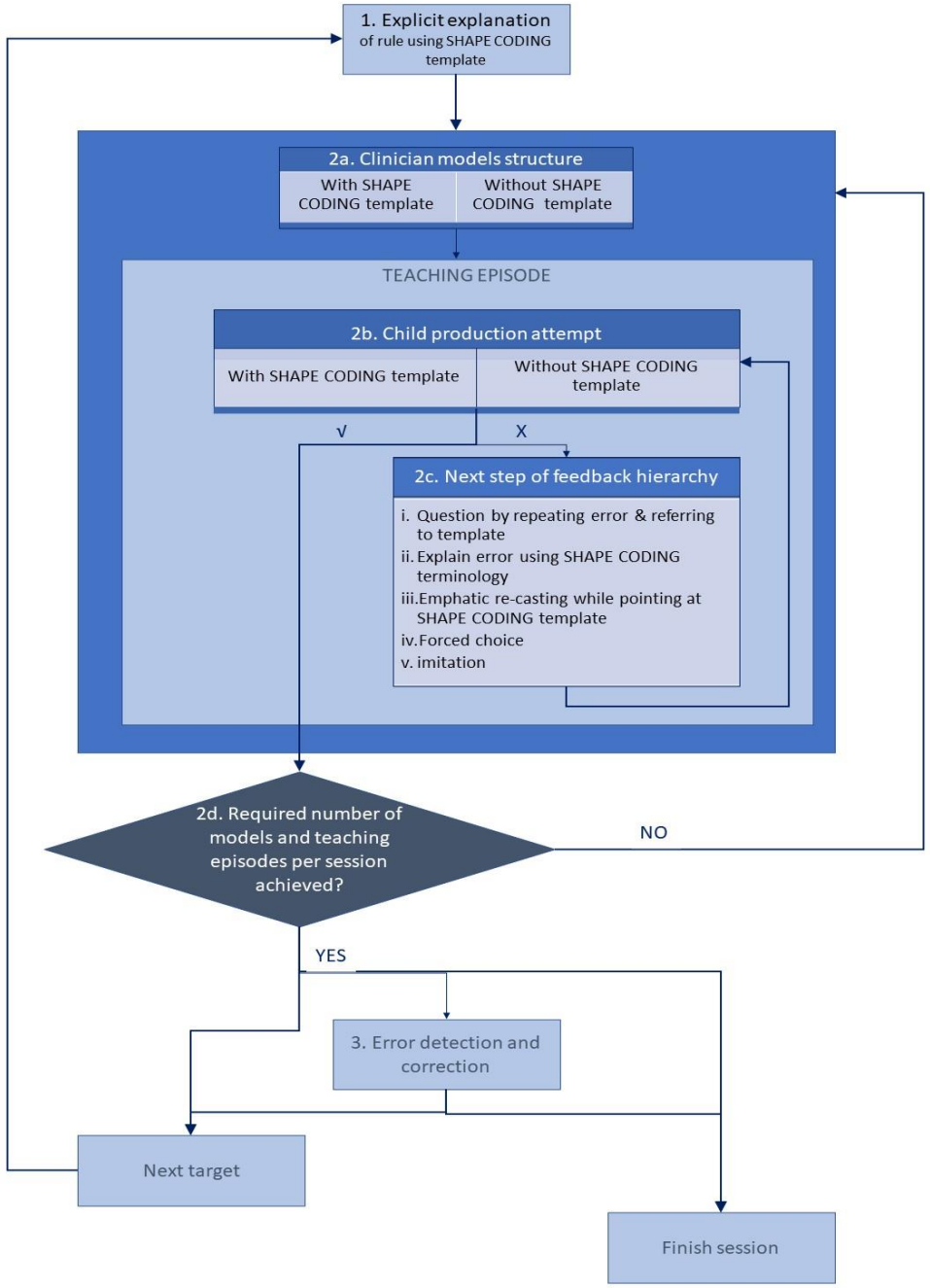
Intervention dosage

- 1:1 with single SLT (second SLT back-up)
- 2 targets per session (order alternates weekly)

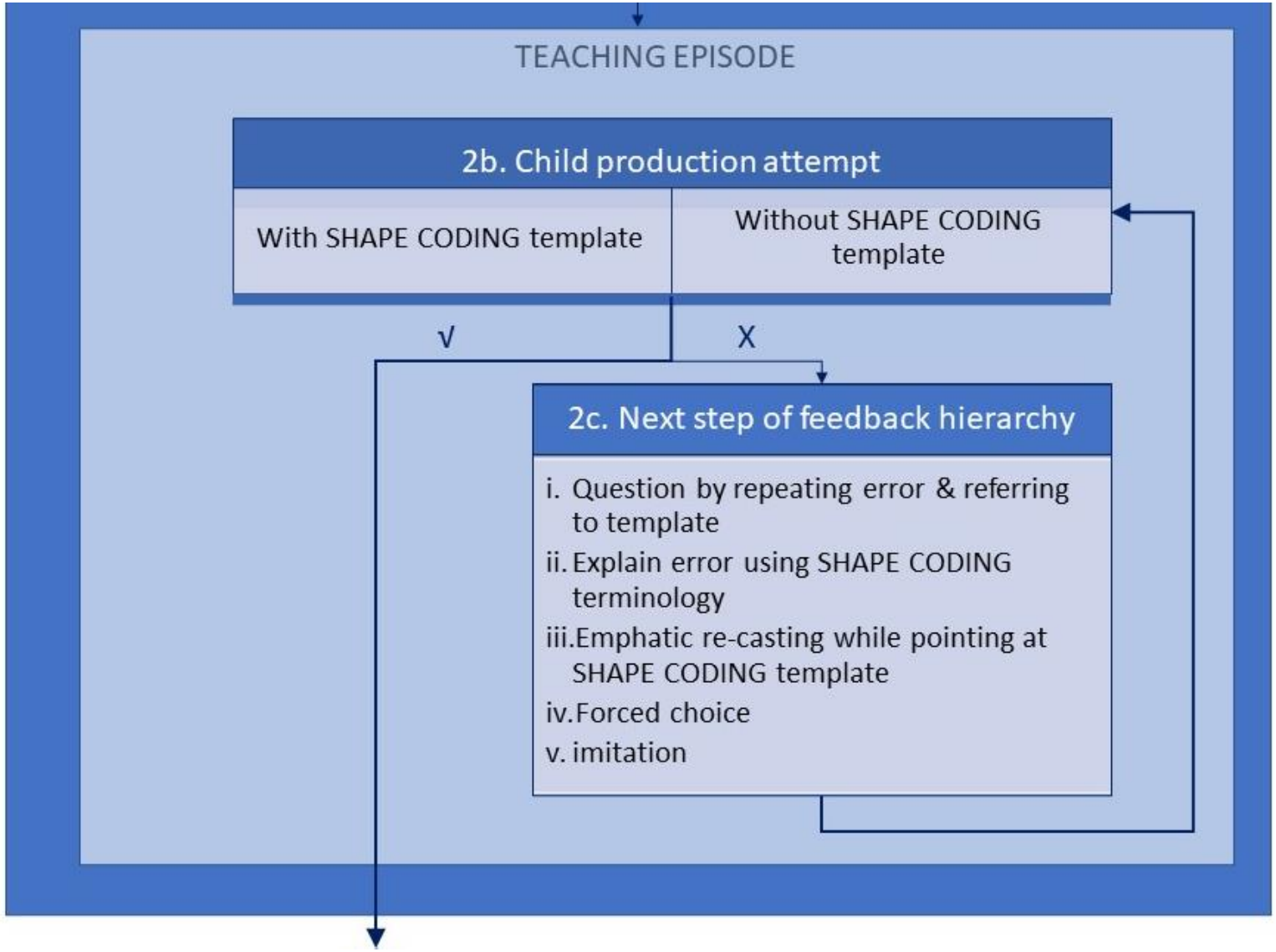


Intervention techniques, procedures and feedback hierarchy

See also: www.shapecoding.com



Teaching Episodes



See also:
www.shapecoding.com

Explicit explanation of the rule with template + models

The SHAPE CODING™ system

Aim

Method

Results

Does number of teaching episodes per session matter?

- Each target received 10, 20 or 30 teaching episodes per session
- When considering
  - number of sessions: 30 > 20 >10
  - cumulative teaching episodes: 30 = 20 = 10

- Odds of correct response increases 3.9% for every teaching episode
- Targets that were achieved required 40-60 teaching episodes (2-3 intervention sessions).
- No significant decrease during maintenance period

The SHAPE CODING™ system

Aim

Method

Results

Summary

- Scores following intervention higher than baseline scores
- Significant progress with intervention (cumulative teaching episodes)
- Faster progress for one child – most experience
- One child made no significant progress – poorest attention
- Rate of progress varied with target
- Total number of teaching episodes is key (distribution across sessions less important)
- Feedback hierarchy rarely needed – errorless learning?
- Progress maintained

The SHAPE CODING™ system

Publication

ASHA American Speech-Language-Hearing Association

LSHSS

Research Article

The Effectiveness of Individualized Morphosyntactic Target Identification and Explicit Intervention Using the SHAPE CODING System for Children With Developmental Language Disorder and the Impact of Within-Session Dosage

Susan H. Ebbels,[a,b] Mollie Gadd,[a] Hilary Nicoll,[a] Lucy Hughes,[a,c] Nicola Dawson,[a,d] Caroline Burke,[a] Samuel D. Calder,[e] and Pauline Frizelle[f]

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ABSTRACT

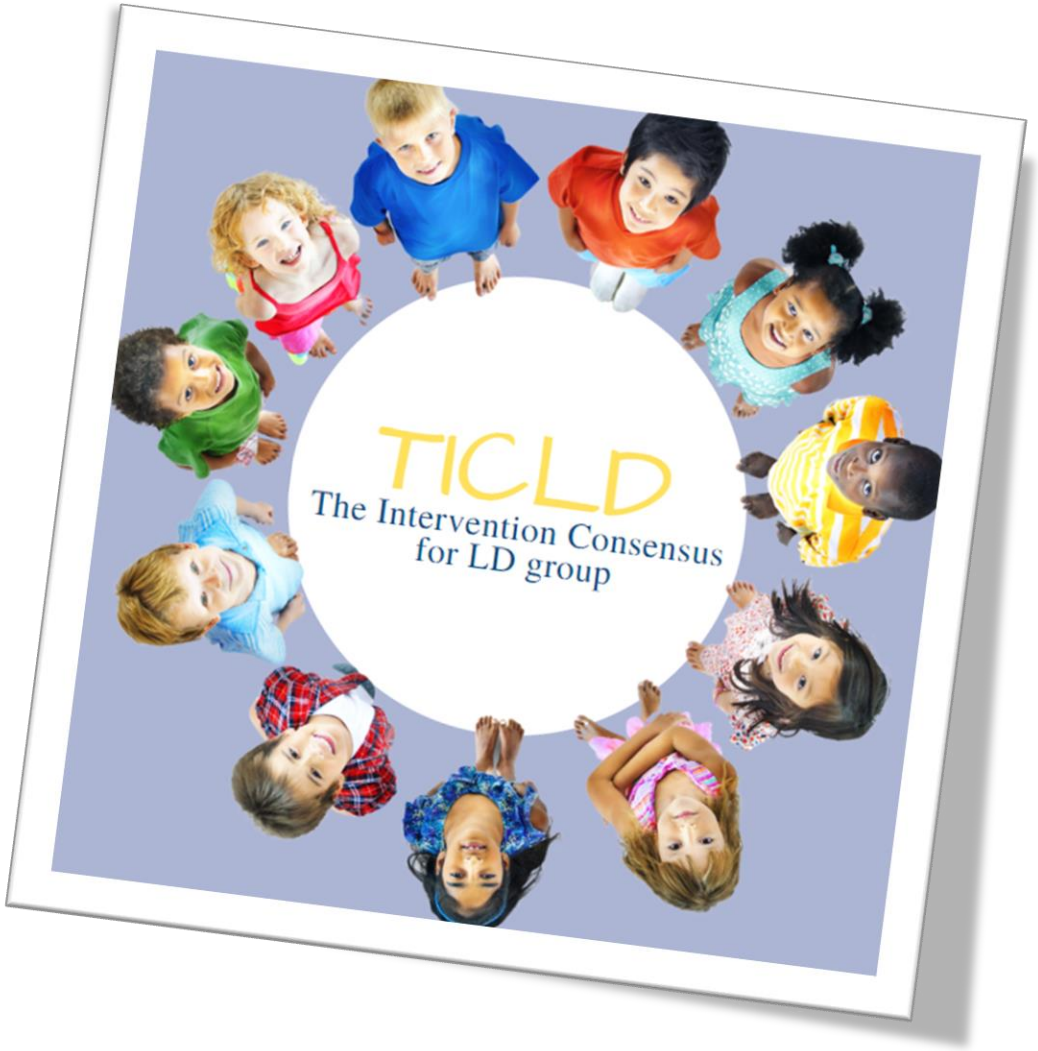
Purpose: We investigated the effectiveness of a highly individualized morphosyntactic intervention using the SHAPE CODING™ system delivered at different dosages.
Method: Eight children with developmental language disorder aged 8;0–10;10 (years;months) received 10 hr of explicit individualized intervention for morphosyntax delivered in 30-min individual sessions once per week for 20 weeks. Following at least four baseline probe tests, two grammatical targets per session received explicit instruction until they reached criterion (90%), when the next target was introduced. To control for session length and teaching episode density, either both targets received 20 teaching episodes per session or one target received 10 teaching episodes and the other 30. Maintenance testing of completed targets was also carried out.

Take Home

1. All components mater
2. An interaction between the qualitative and the quantitative active ingredients
3. Be intentional and aware of the active ingredients you are using
4. Define what you consider to be a teaching episode in any given session
5. Manage your within session dose – aiming high

Maximising the benefits of intervention research to support language and communication in children

Website: https://www.ucc.ie/en/ticld/
Instagram: https://www.instagram.com/ticld_international/
Bluesky:https://bsky.app/profile/ticld.bsky.social



Prof. Pauline Frizelle, Dr. Carol-Anne Murphy, Professor Cristina McKean and the Intervention Consensus for Language Disorder (TICLD) Group

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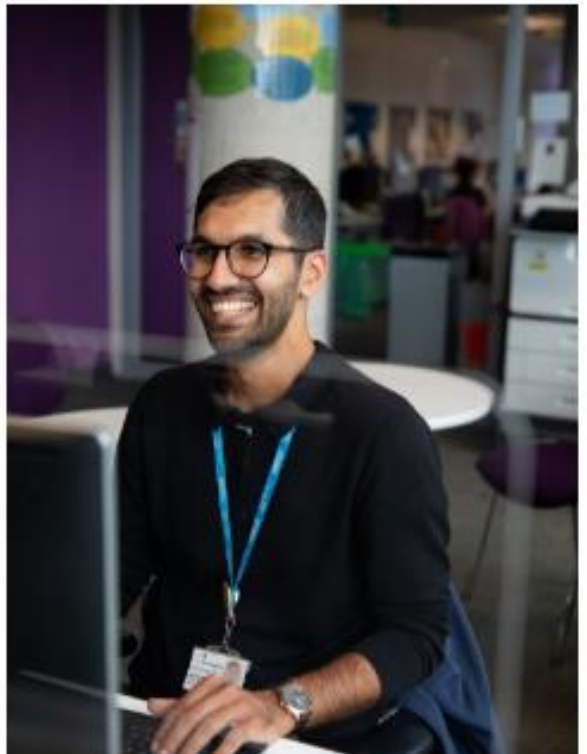
Evaluation

RCSLT











Evaluation

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Thank you

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