

Why increased sign and symbol use in severe learning and language disability schools promotes language.

Based on a dissertation for an MA in Special Educational Needs

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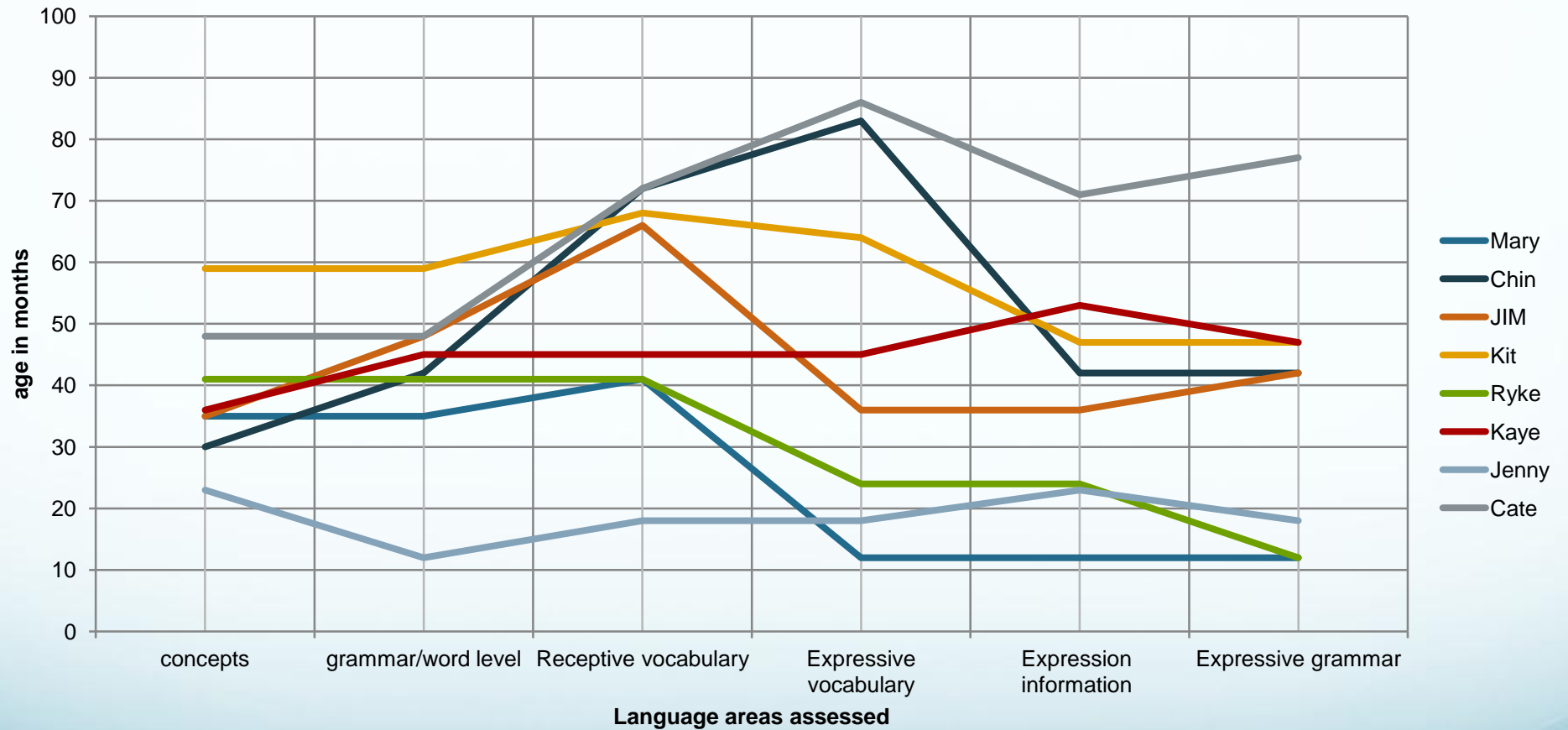
Recent Validating Studies

- DeThorne et al (2009)
- Nunes (2008)
- Millar et al (2006)
- Goodwyn et al (2000)

The Study

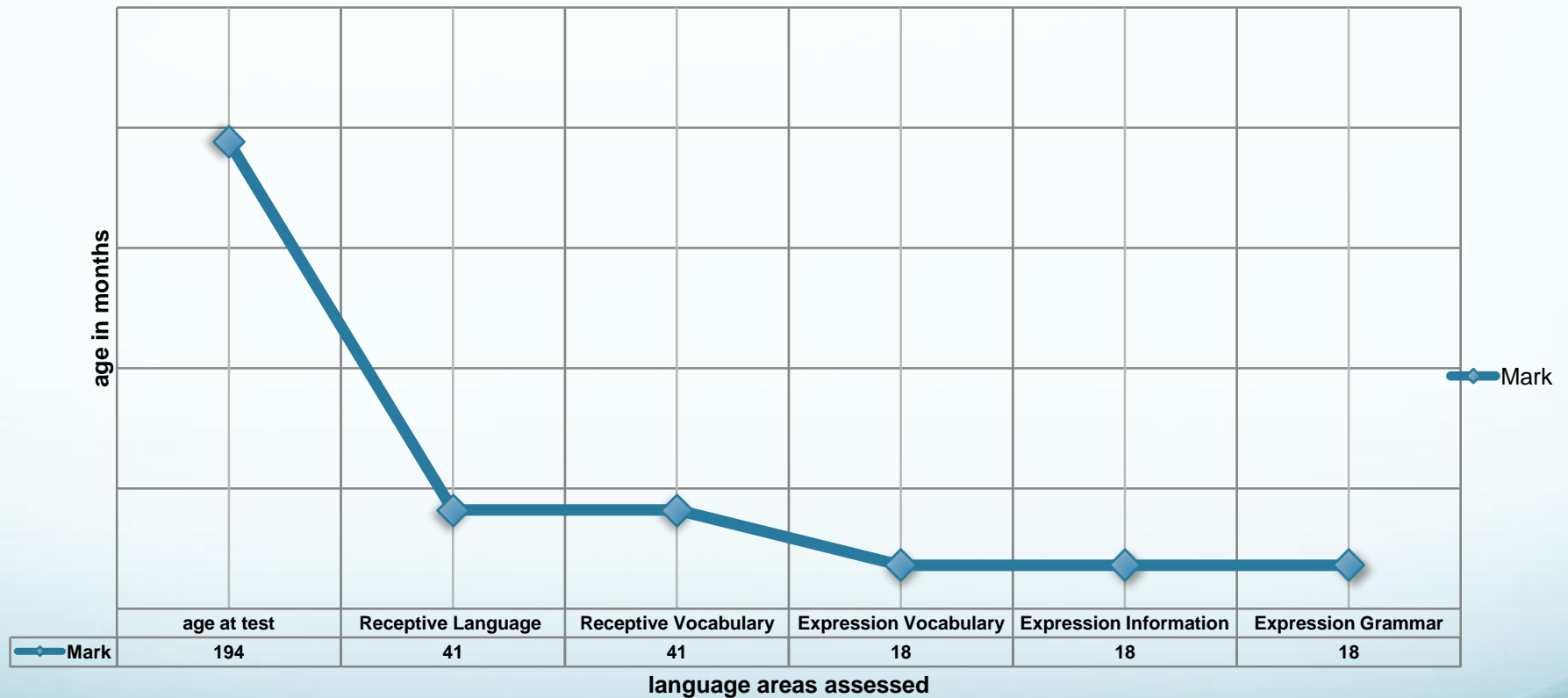


Cohort and their range of language profiles



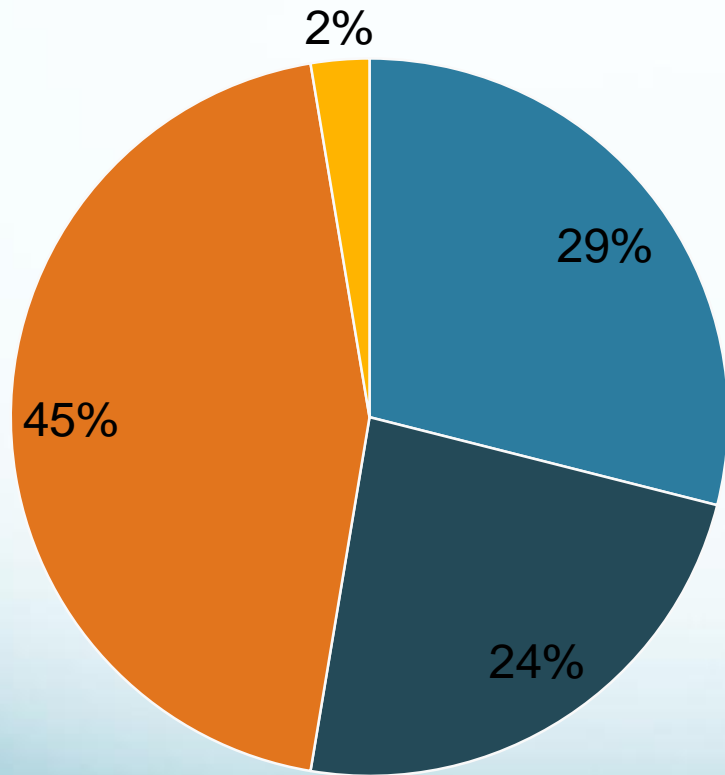
Non verbal student better understanding than expression

Mary

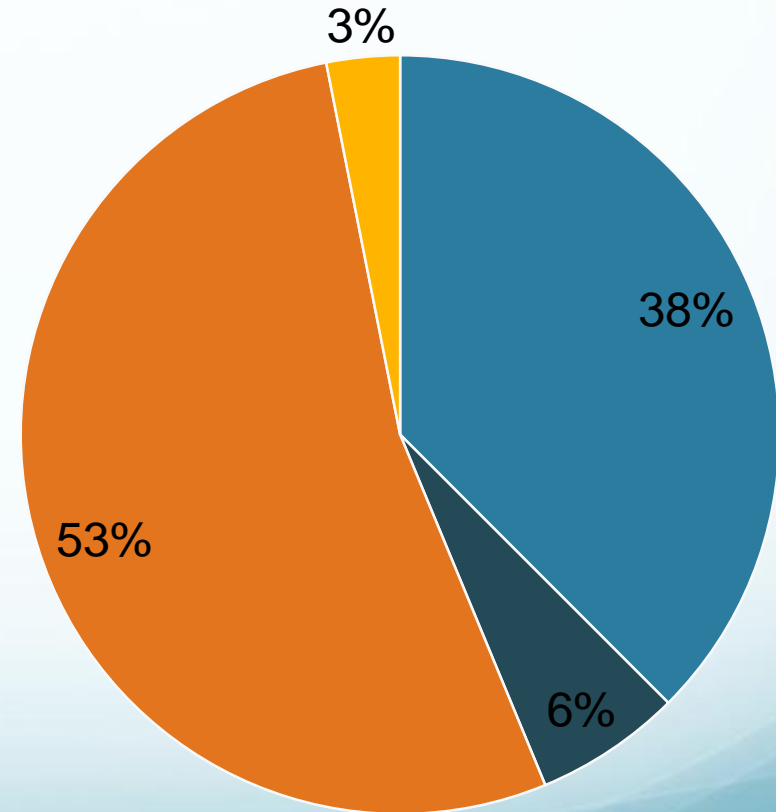


Representations of Mary's communication

Unsupported



Supported



- successful
- unsuccessful
- non expansive
- supported

biological level (brain structure)



cognitive level (processing)



behavioural level (symptoms)



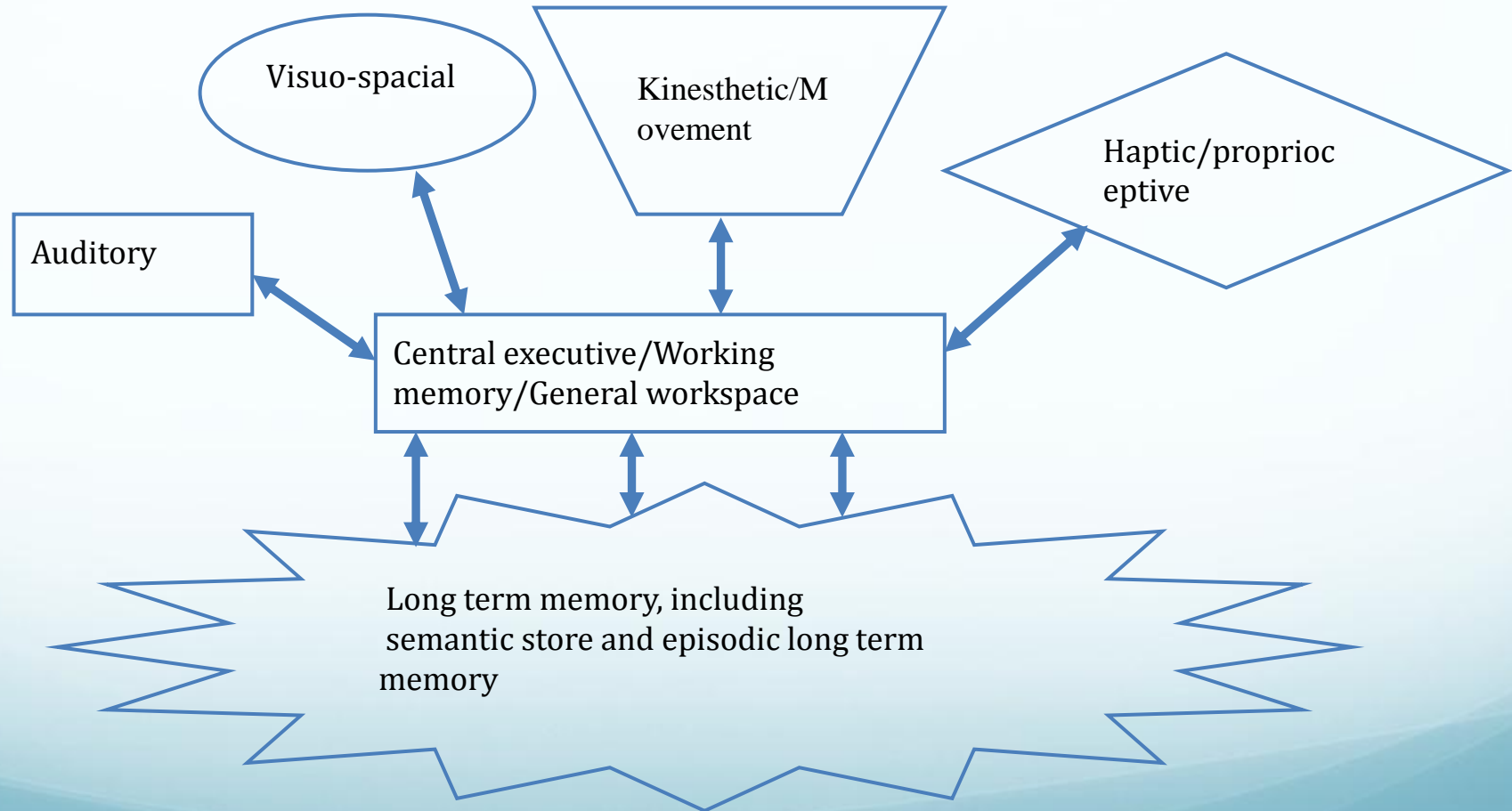
affected
by the environment

Adapted from Frith (2002)

Memory and Learning



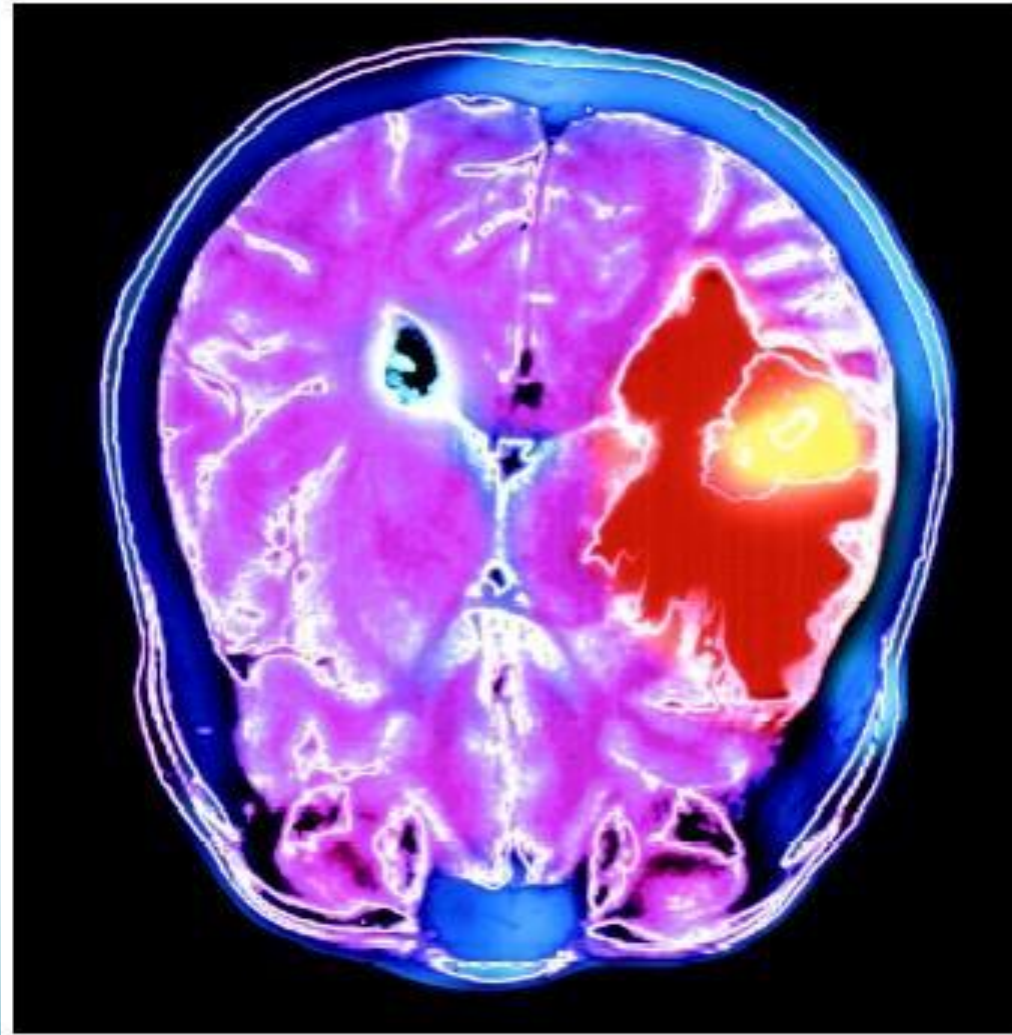
Model of Memory based on Baddeley's model (Baddeley and Hitch (1974) revised by Baddeley (2000) on but including theories of multi channel reception (LeDoux 1999)



“different kinds of information can be interrelated in working memory (the way something looks, sounds, and smells can be associated with its name in working memory).” (LeDoux 1999).

Associations with research into dyslexia

Neurology, New technology & MRI scans

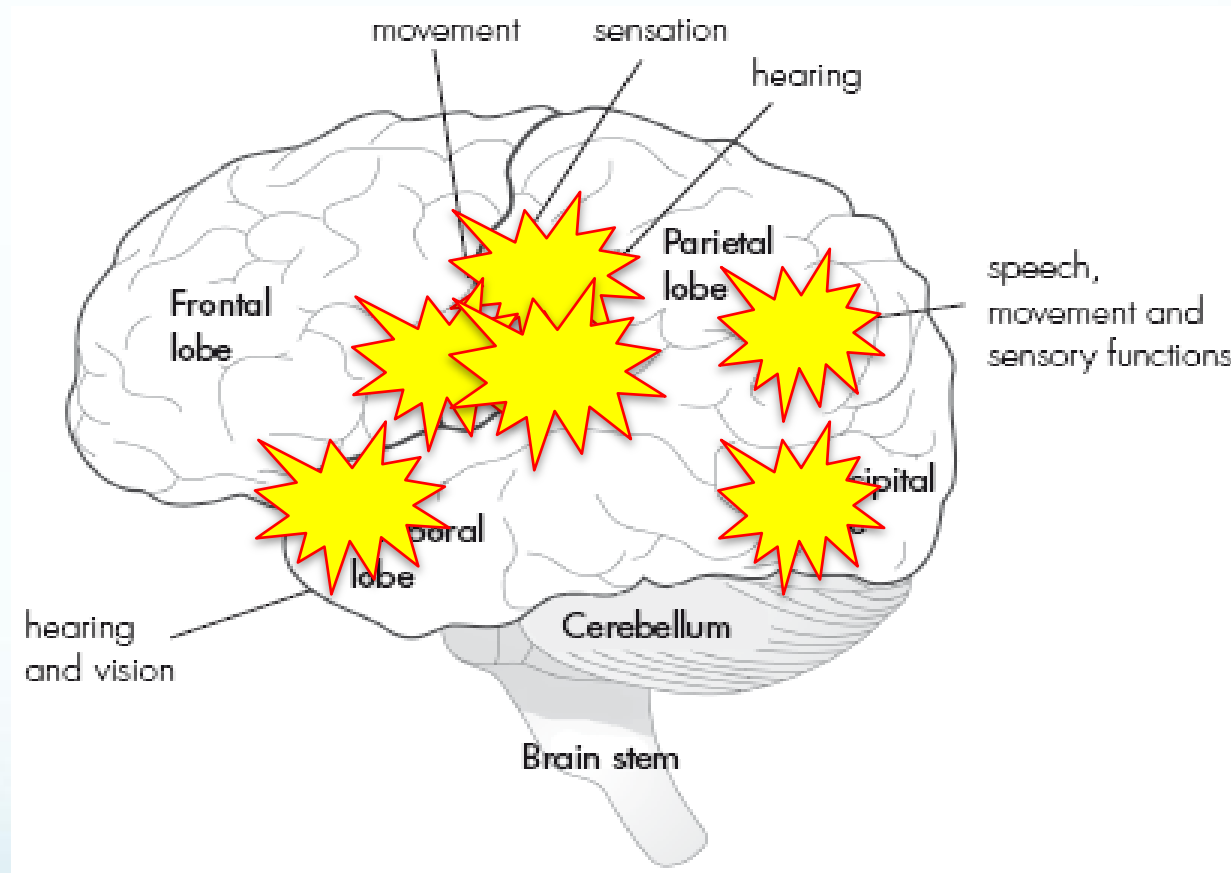


A microscopic image of neurons, showing cell bodies and their branching processes (dendrites and axons) against a dark blue background. The neurons are highlighted in a lighter blue and yellowish-green. Overlaid on the image is the text "neurons that fire together wire together" in a bold, red, sans-serif font. Below this text is the name "Hebb (1949)" in a smaller, red, sans-serif font.

**“neurons that
fire together
wire together”**

Hebb (1949)

The Brain



Two Seminal Studies to Support Signing

Fadiga and Craighero (2006) found that Broca's area of the brain (a site heavily associated with speech and language processing) was also associated with recognising meaningful movement or gesture.

Skipper et al (2007) compared brains of people watching speech accompanied by gesture with those of people watching speech unaccompanied by gesture. Using fMRI they found that the section of Broca's associated with semantic processing was activated when gesture was used by the story-teller.

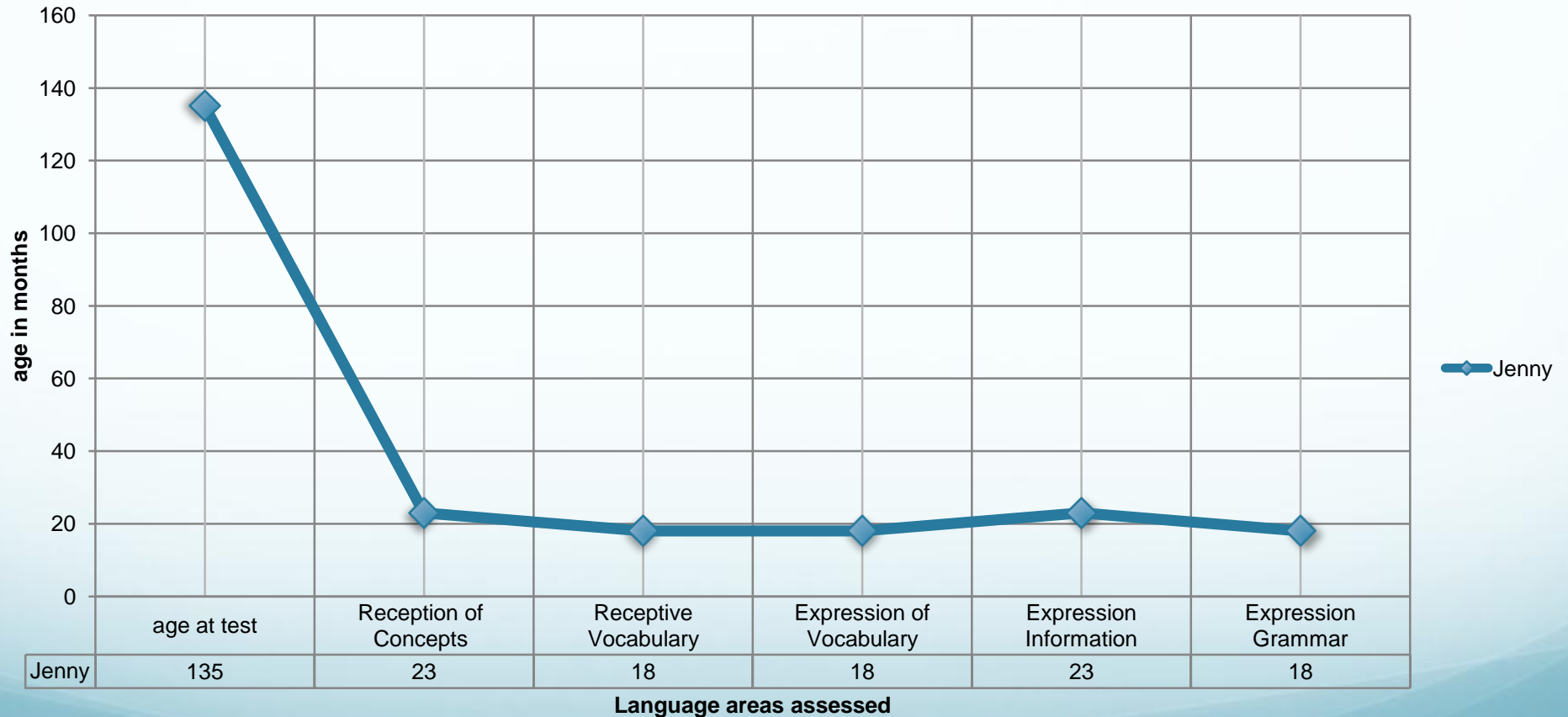
gesture supports the semantic understanding of the listener

Mirror Neurons



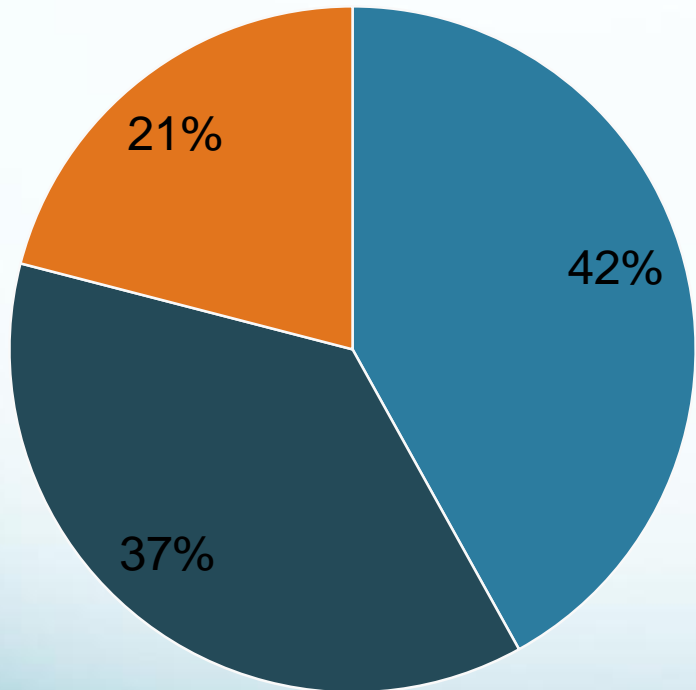
Typical student who would be using sign/symbols

Jenny



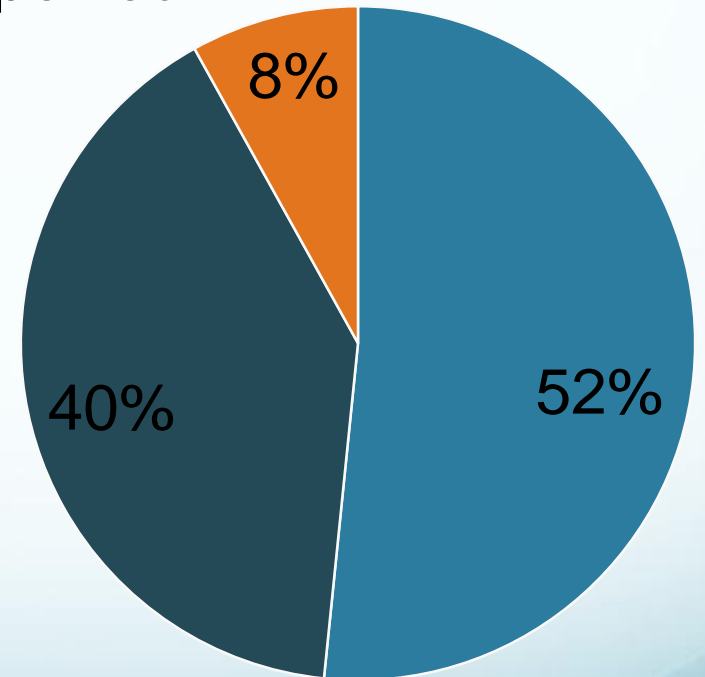
Jenny

Unsupported



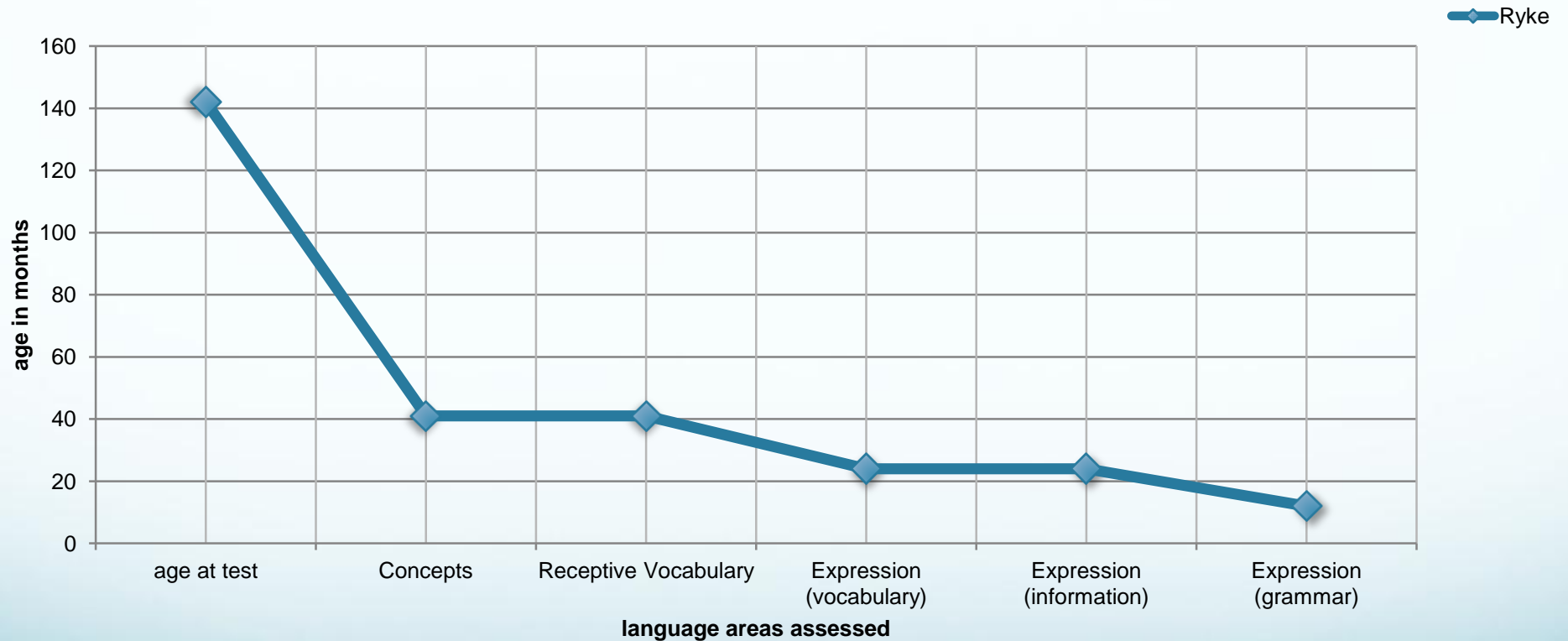
Supported

- successful
- unsuccessful
- non expansive



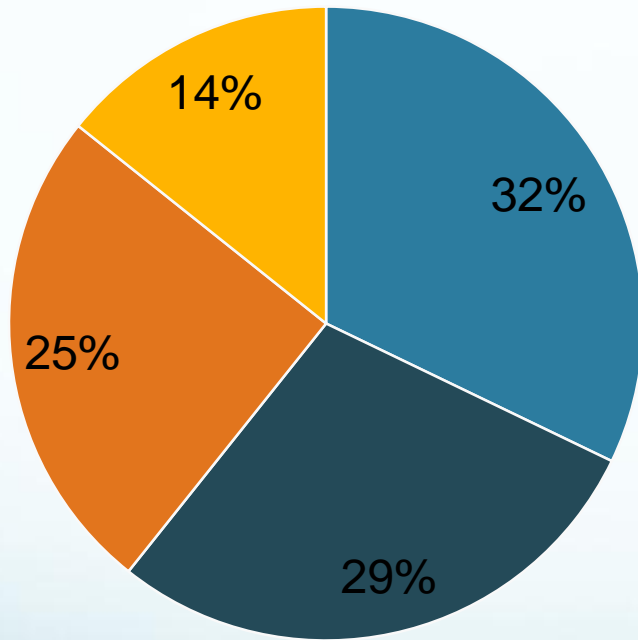
Non verbal student better understanding than expression

Ryke

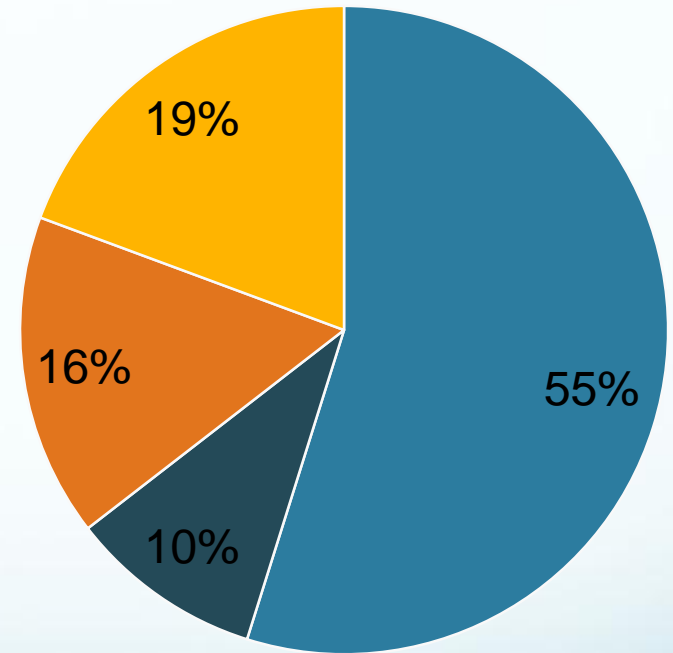


Ryke

Unsupported session



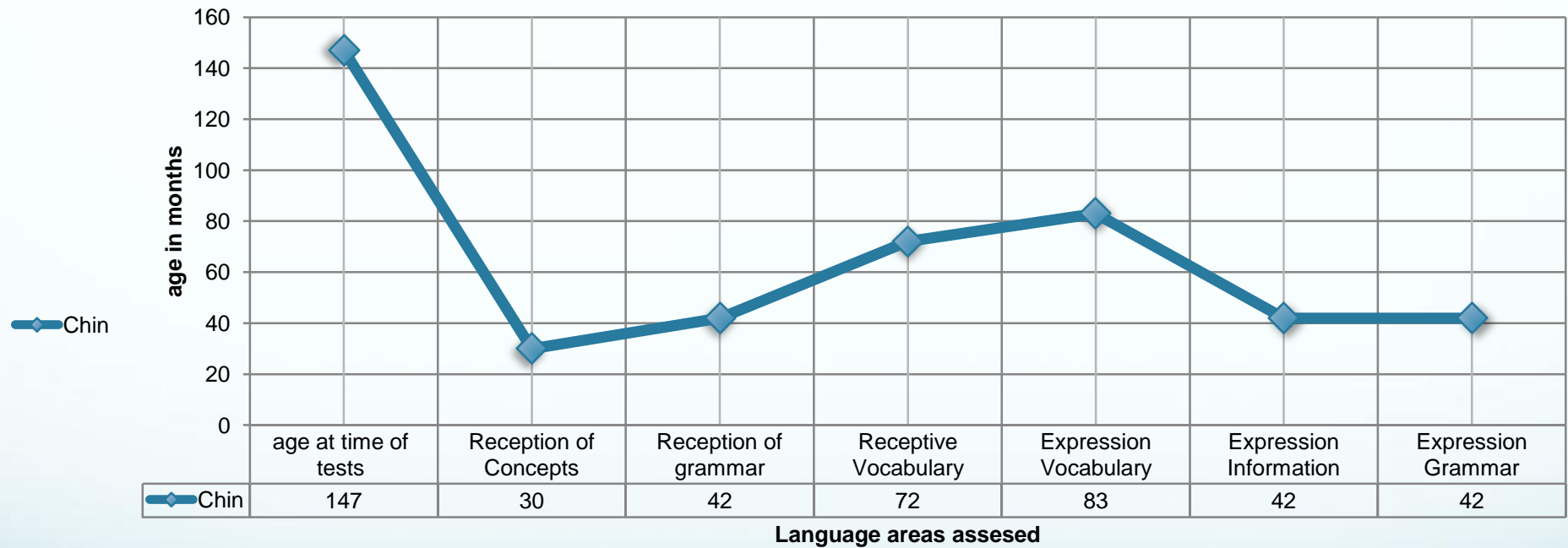
Supported session



- successful
- unsuccessful
- non-expansive
- supported to expand

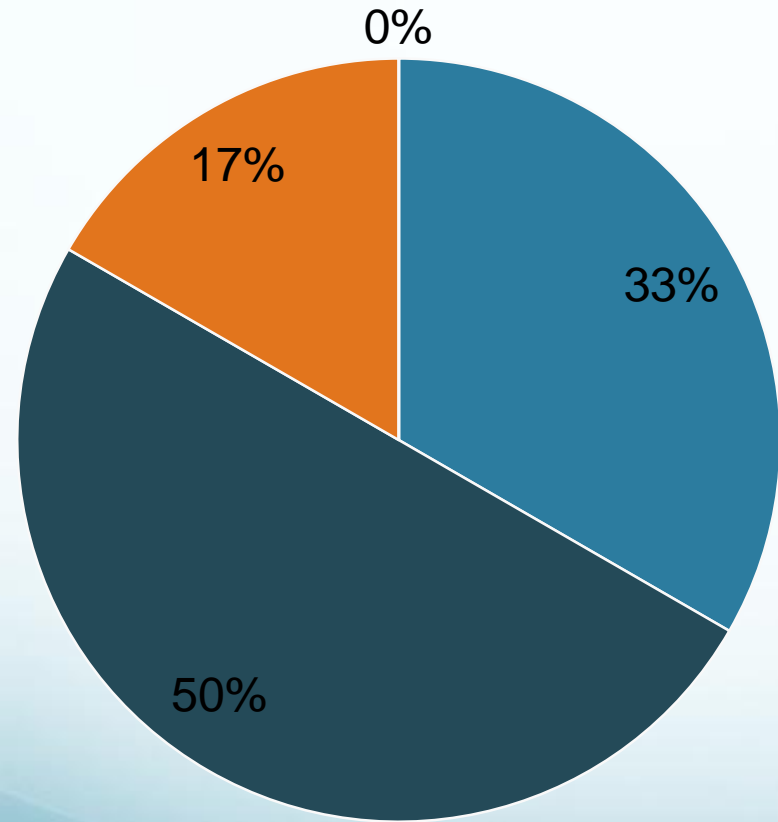
Graph of a verbal child with relatively high vocabulary level

Chin

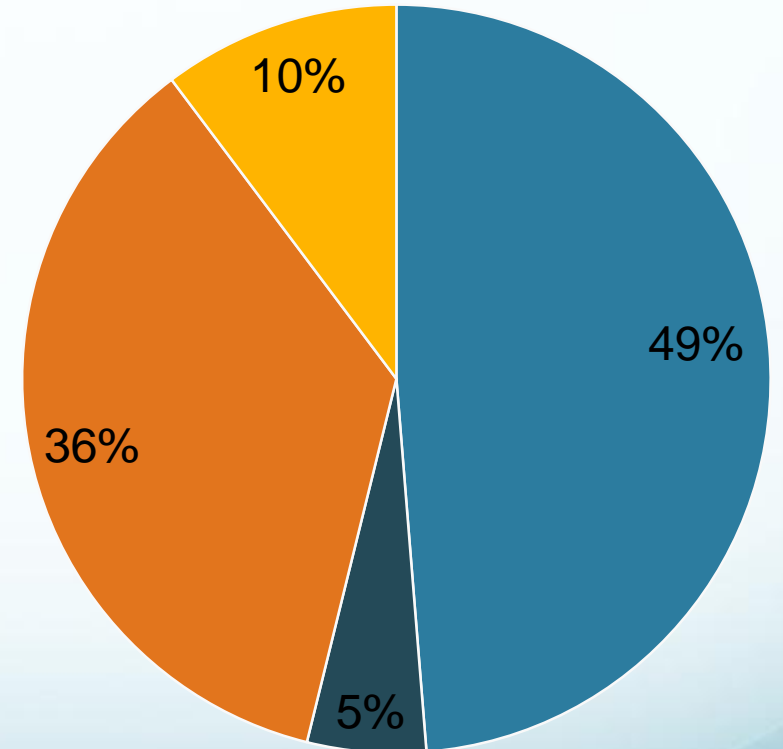


Chin

Unsupported



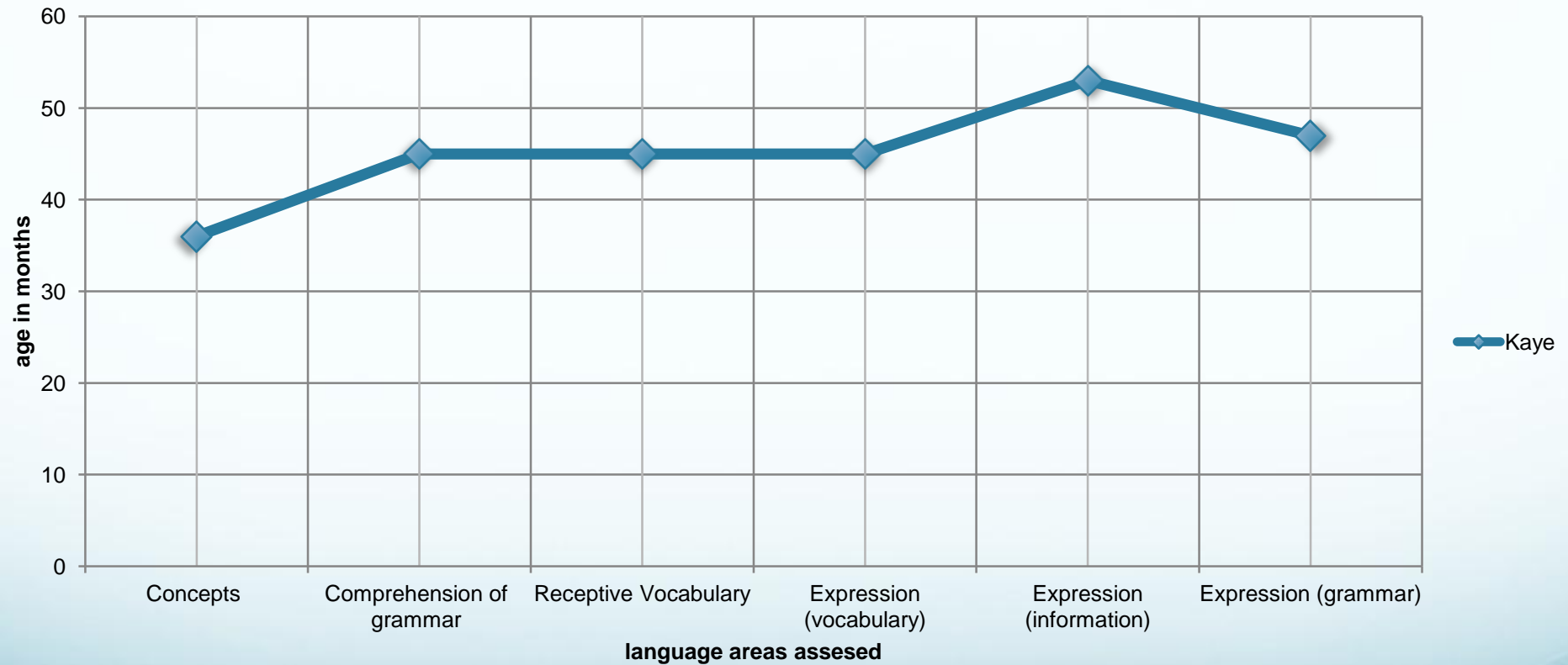
Supported



- successful
- unsuccessful
- non expansive
- supported

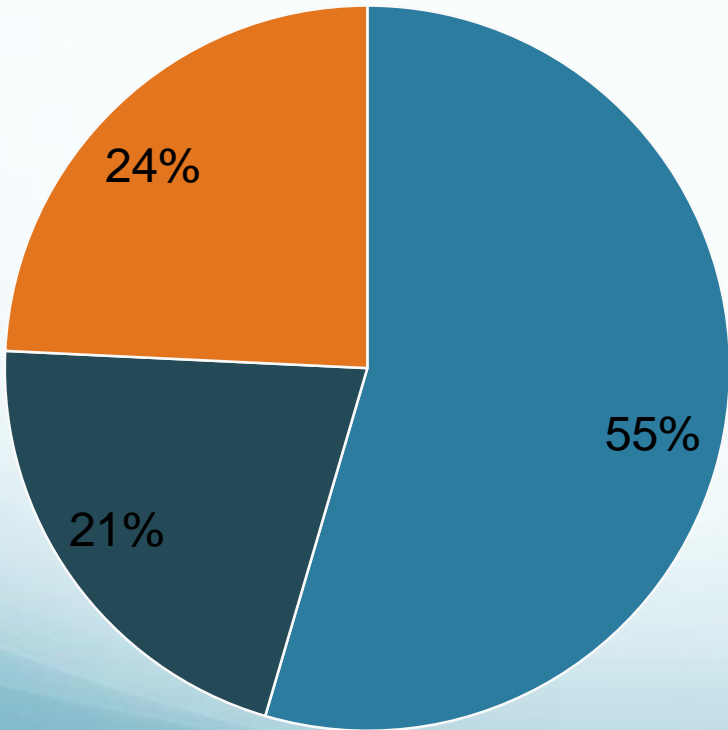
A verbal student with a strength in giving information

Kaye

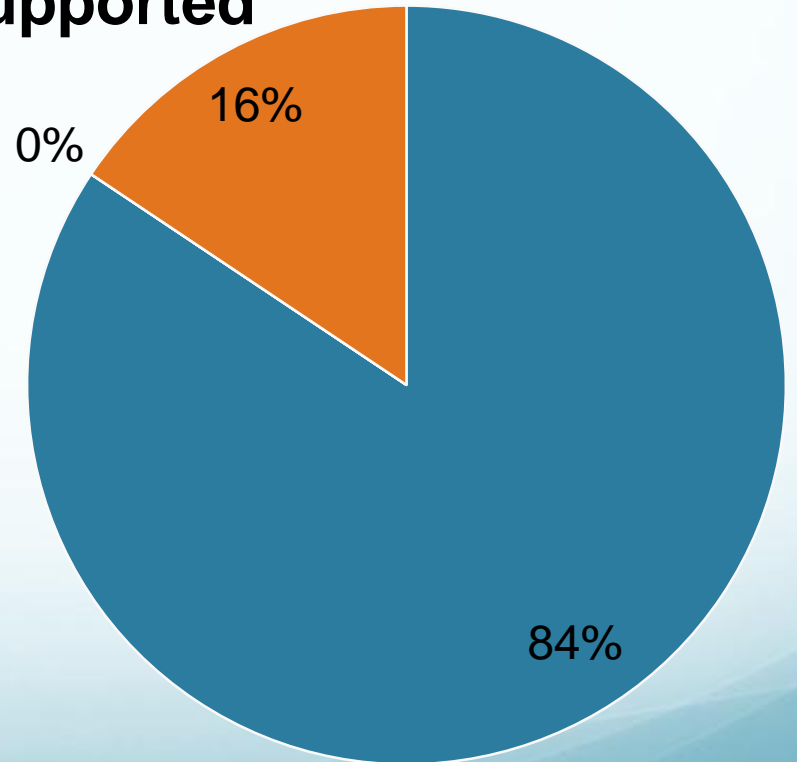


Kaye

Unsupported



Supported



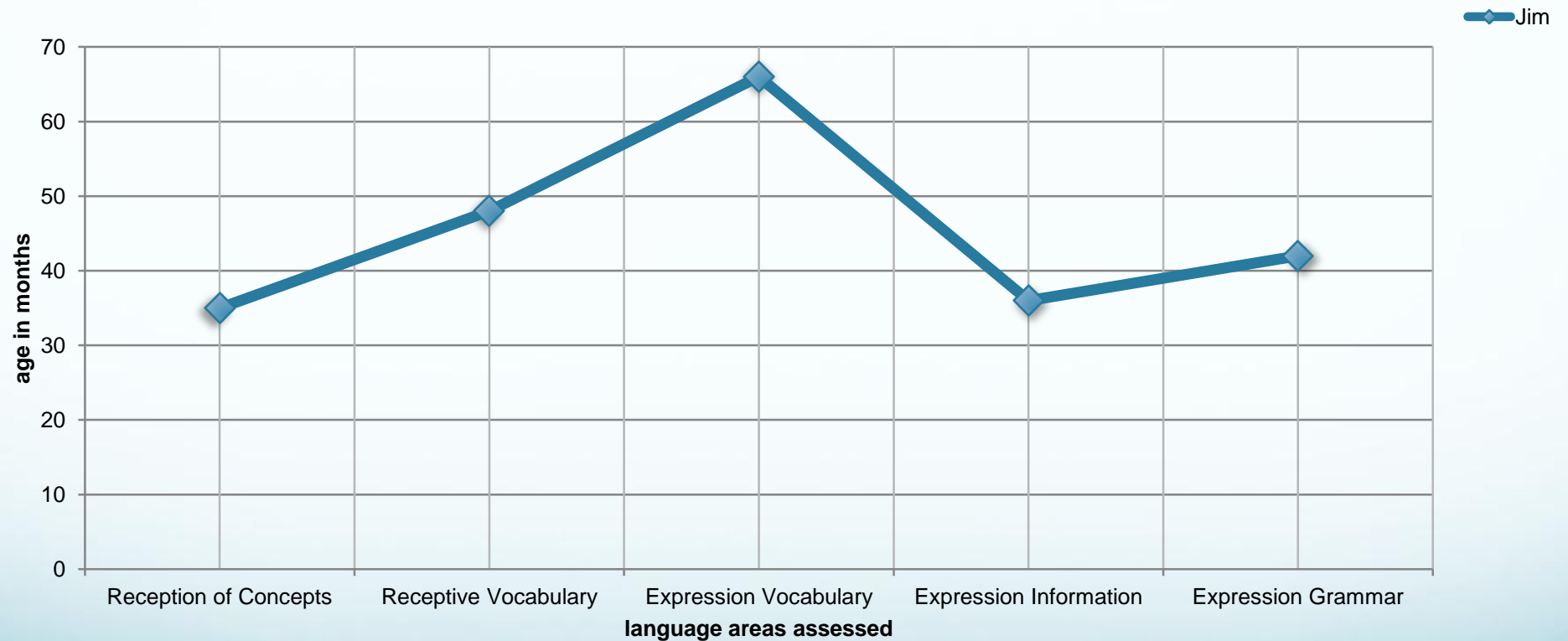
- successful
- unsuccessful
- non expansive

Peer communications



Further investigation

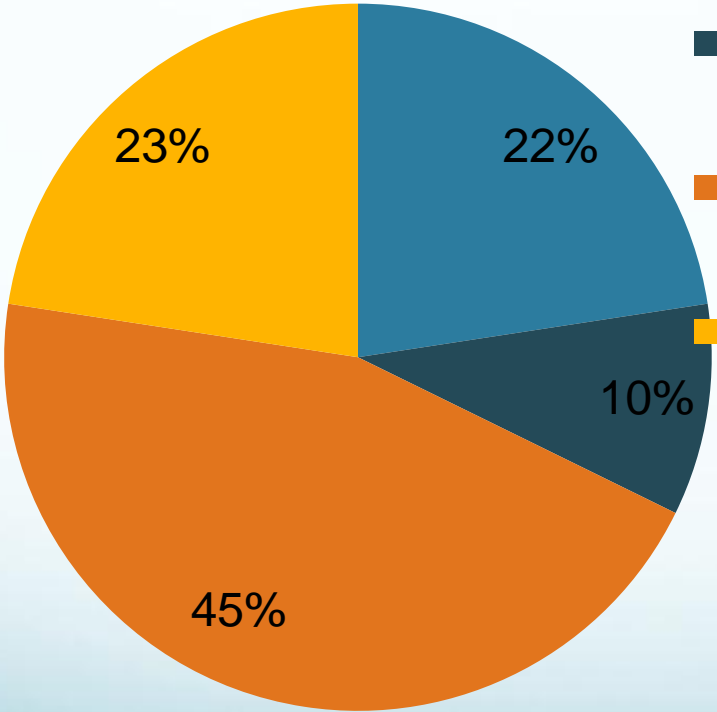
Jim



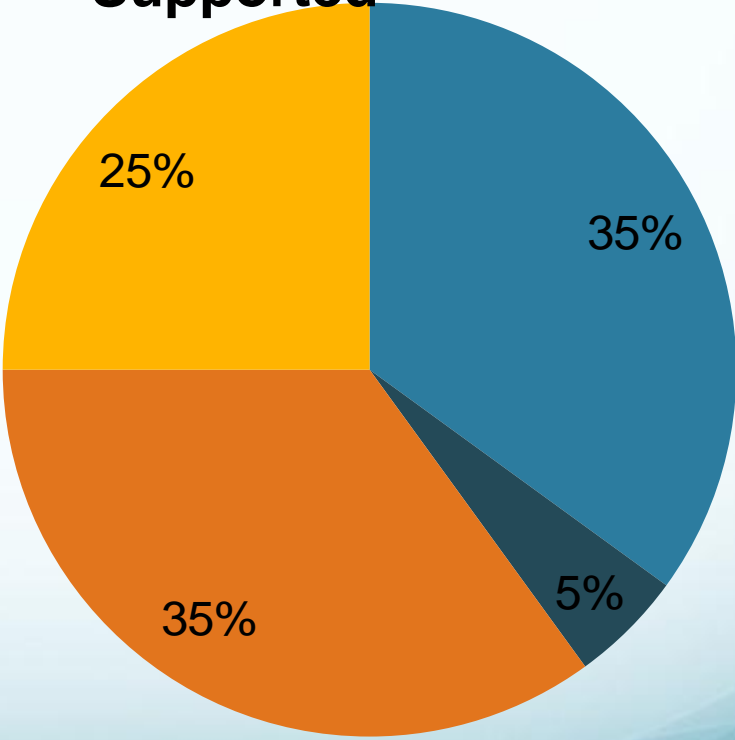
Jim

- successful
- unsuccessful
- non-expansive
- supported

Unsupported



Supported



Two years on

- Staff access to IT and classroom audits
- Signalong Training; staff parents and students
- Auditory and Visual Memory assessment
- Photo graph albums & Ipads
- Language groups
- Working memory groups

Thank you for listening

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