



Cross-language Transfer in Mandarin-English Immersion



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Dual Language Immersion Model



1. Acquire **language** and **literacy** skills in two languages, through content instruction.
2. Children in DLI often **outperform** peers on assessments of societal language (English); and meet high levels of **proficiency** in the partner language (Mandarin).
3. Potential for **transfer** across languages.

Steele et al., 2019; Watzinger-Tharp et al., 2021

Key Question



Do **vocabulary** and **definition skills** transfer across languages in school-aged students enrolled in Mandarin-English dual language immersion?

苹果



apple

Common Underlying Proficiency Model

Cummins, 1981; Pham et al., 2018

Transfer of Lexical Knowledge



Children's Lexical Knowledge

Lexical Breadth

Receptive
Vocabulary

Expressive
Vocabulary



Starfish 海星

Lexical Depth

Paradigmatic
Knowledge

Syntagmatic
Knowledge



A chameleon is a **kind of lizard** that **lives in trees** and **changes colors**.

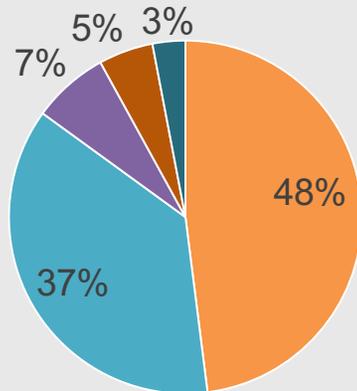
变色龙是一种**住在树上**和**会变色的**蜥蜴。

Demographics



- 60 children (34 identified as male).
- 1st grade ($N = 20$); 3rd grade ($N=21$); 5/6th grade ($N = 19$).
- Racially and ethnically diverse.

Participant Demographics



■ Asian ■ Multiracial ■ White ■ Black ■ Hispanic

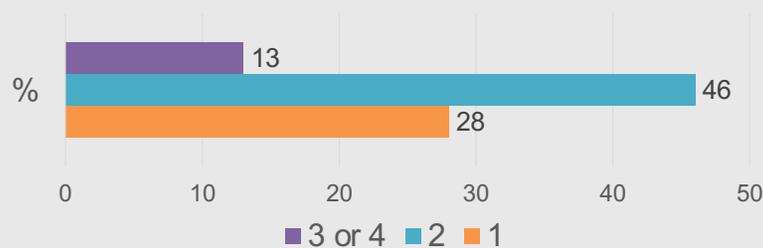
- Considering “heritage learners” in the DLI context.

(Ortega, 2020)

Linguistic Diversity



Languages Spoken in the Home

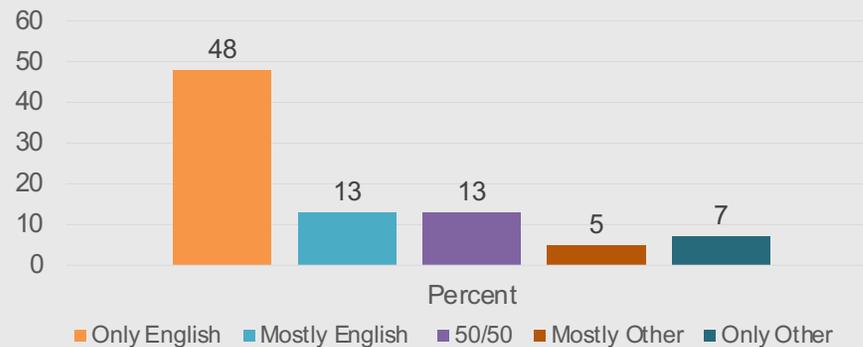


59% exposed to 2 or more languages at home.

Languages: Mandarin, Cantonese, Vietnamese, French, Spanish, Russian, Tibetan

25% had at least 50% exposure to a language other than English.

Relative Language Exposure



Measures



Definition Skills

Now I am going to ask you to define some words for me.

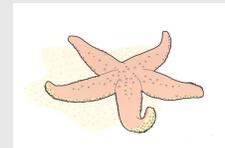
我要请你帮我给这些词下定义。

What is an apple?	“苹果”是什么？
What is a baby?	“宝宝”是什么？
What is a boat?	“船”是什么？
What is a book?	“书”是什么？
What is a coat?	“外套”是什么？
What is a horse?	“马”是什么？
What is a house?	“房子”是什么？
What is a mouth?	“嘴巴”是什么？
What is a pencil?	“铅笔”是什么？
What is a train?	“火车”是什么？

Expressive Vocabulary Skills

EOWPVT in
English
& Mandarin

海星



Starfish

(Marinellie & Johnson, 2002)

Transcription (1st Grader)



An apple is like a red fruit. It has a stem and it grows from trees.



A boat is like...I don't know, a painted thing. I don't know how to describe a boat. It has a sail.



A book is something you create. It's just a book.



A horse is something you can ride on. It's not a robot. It eats hay.



A train is something that you can travel to like shop to your home or to your home to a big ginormous city.

Scoring



Paradigmatic Knowledge

Score	Description	Example
0	No Response	N/A
1	Translations	苹果píngguǒ – apple
2	Synonym	Baby – infant
3	Empty superordinates or demonstrative-relative pronouns used in definitions	___ is something/where/that which/..... ____ is what we use for..... ____ is where we.... ____是....的东西/地方 [____ is something we use for/a place where.....]
4	“Not best” superordinates	An envelope is a “paper” A fence is a “wooden thing”
5	Adequate superordinates	A train is a form of “transportation” that runs on tracks; a horse is a four-legged “animal”

Syntagmatic Knowledge

- Size, quantity, shape, color, composition, parts, location, function, or use.
- Each aspect = score of 1
- Raw frequency count

(Ordoñez et al., 2002)

Results



Mandarin
Paradigmatic 

Predicts

English
Paradigmatic

***unconstrained** by Mandarin or English Vocabulary.

Mandarin
Syntagmatic

Predicts

English
Syntagmatic 

***moderated** by Mandarin Expressive Vocabulary.

Results




Mandarin
Paradigmatic



English
Paradigmatic

***unconstrained** by Mandarin or English Vocabulary.

Mandarin
Syntagmatic



 English
Syntagmatic

***unconstrained** by Mandarin or English Vocabulary.

Teaching for Transfer



1

Structural overlap between skills (e.g., **X** is a **Y** that **Z**)

2

Exposure or proficiency in non-societal language

3

Learning across contexts (e.g., home and school)

Future Directions



1. Narrative structure and use of narrative elements (e.g., mental state terms) across languages.
2. Which linguistic and discourse features of teacher's classroom instruction in the partner language are linked with language and learning outcomes?
3. Supporting diverse learners: research at the intersection of Special Education and Dual Language Immersion.



Thank you. Gracias. 谢谢！



References