L2 Vocabulary Retention in Typically Developing Children and Children with Learning Disabilities: Comparing Individual Words and Multi-Word Items

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The talk

- The teaching target: word and multi-word items definition
- Research on multi-word items
- Learning Disabilities and memory
- Aim and the hypotheses
- The method (Participants, design/procedure)
- The Analysis
- Summary and Discussion

Word and Multi-word Items: Definitions

- "***Word***" is perceived as an arbitrary unit and can be defined as *'a string of characters, or a sequence of one or more morphemes, which is bounded at either end by a space or by punctuation'*.

Moon (2001:43)

- '***Multi-word items***', are described as '***lexical items which consist of more than one word and have some kind of unitary meaning or pragmatic function***".

Moon (2015:120)

Research on MWI

- Research on MWI mainly focuses on L1 and mostly on the reason why some MWI are more memorable than others.
- Research on MWI and L2 is restricted and mostly focuses on the teaching and learning of MWI.
- No previous study has been reported to examine and compare the retention of individual words and MWI in TD children and children with LD in short and long-term memory.

(Boers and Lindstomberg, 2005; Siyanova-Chanturia, 2017)

Learning Disabilities and Memory

Children with LD face difficulties when learning a language due to short and long-term memory weaknesses.

They perform poorly in tasks that require language processing particularly when the time period between the presented stimulus and recall is long.

- The limited short-term memory.
- The ineffective use of the phonological code.
- The poor use of internal organizational and revision strategies.
- The superficial processing of semantic representations.
- Failure to incorporate the visual and language mnemonic traces of visually presented stimuli, at the time of storing.

(Swanson, Cooney & McNamara, 2004; Wong, 1982; Swanson, 1984, 1987)

Aims of the Study

1. Measure short and long-term L1 meaning retention of new L2 individual words and MWIs

2. Compare scores of Typically Developing and Learning Disabilities school aged children.
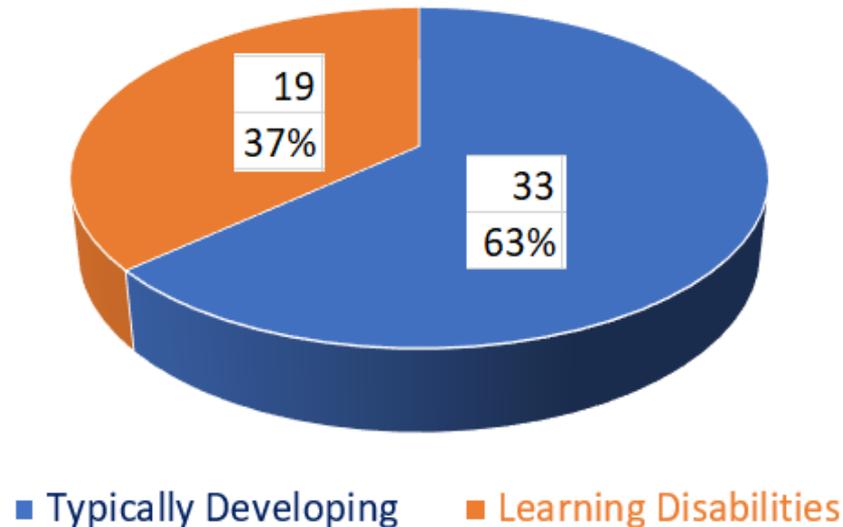
Research Hypotheses

H1. There is a statistically significant difference in retention between a) individual words and, b) multi-word items, in short and long-term memory of both groups.
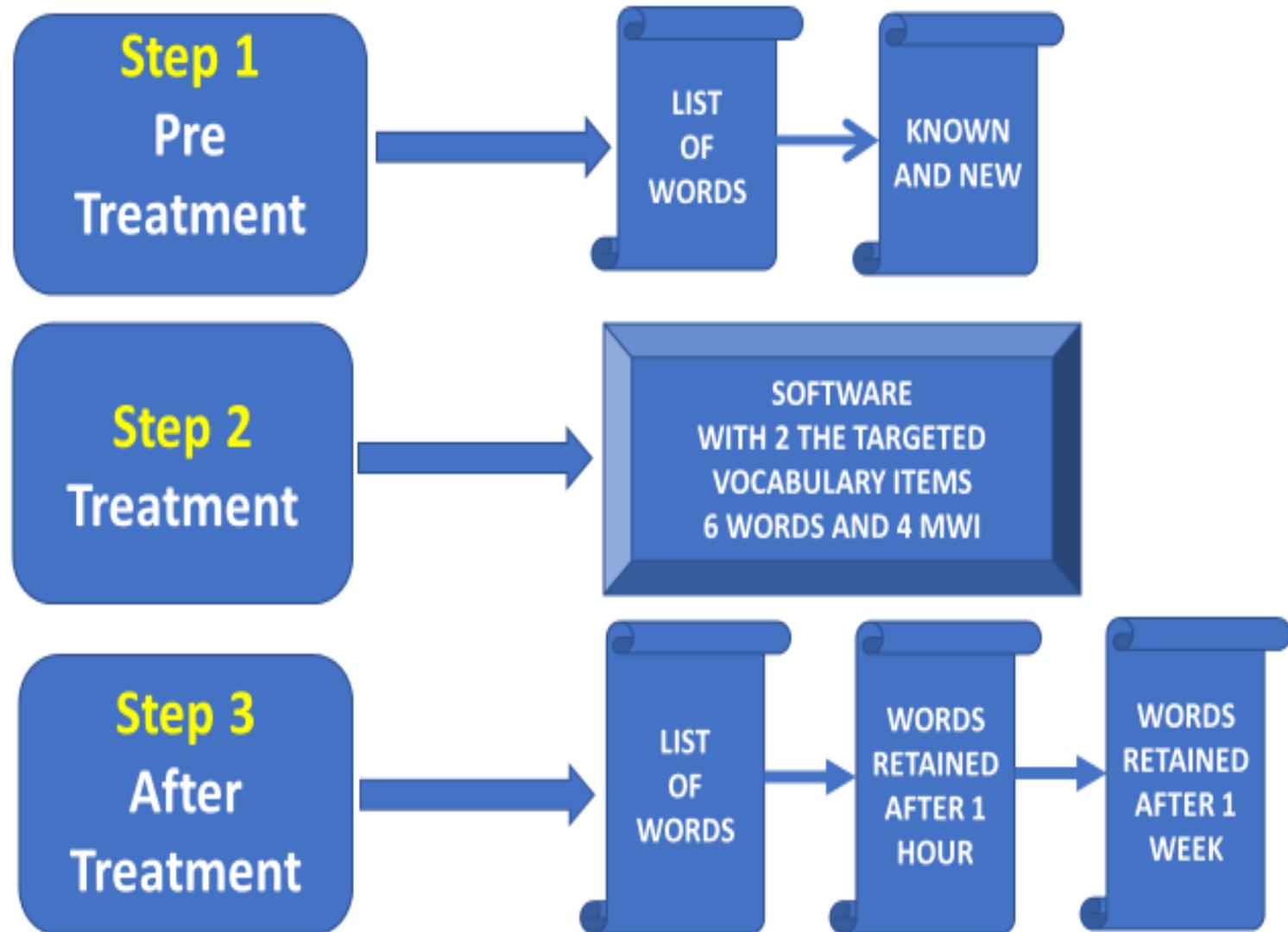
H2. There is a statistically significant difference in retention scores between the TD and LD groups.

The participants

- **52 English language learners** (33 TD and 19 LD) aged from 9 to 12, attending a language school at A1 level (CEFR).

- **Two assessment tests were administered to distinguish the two groups**:

  a) The reading abilities Giro giro oli test(Talli, Stavrakaki & Sprenger-Charolles, 2014) to identify the participants with LD and,

  b) Raven's colored Progressive Matrices (Sideridis, Antoniou, Mouzaki, & Simos, 2015) to assess their non verbal IQ.

Pie chart showing: 19 / 37% Learning Disabilities (orange), 33 / 63% Typically Developing (blue)

■ Typically Developing   ■ Learning Disabilities

The procedure: after Ypsilandis (2006, 2014, 2017)

Step 1 Pre Treatment → LIST OF WORDS → KNOWN AND NEW

Step 2 Treatment → SOFTWARE WITH 2 THE TARGETED VOCABULARY ITEMS 6 WORDS AND 4 MWI

Step 3 After Treatment → LIST OF WORDS → WORDS RETAINED AFTER 1 HOUR → WORDS RETAINED AFTER 1 WEEK
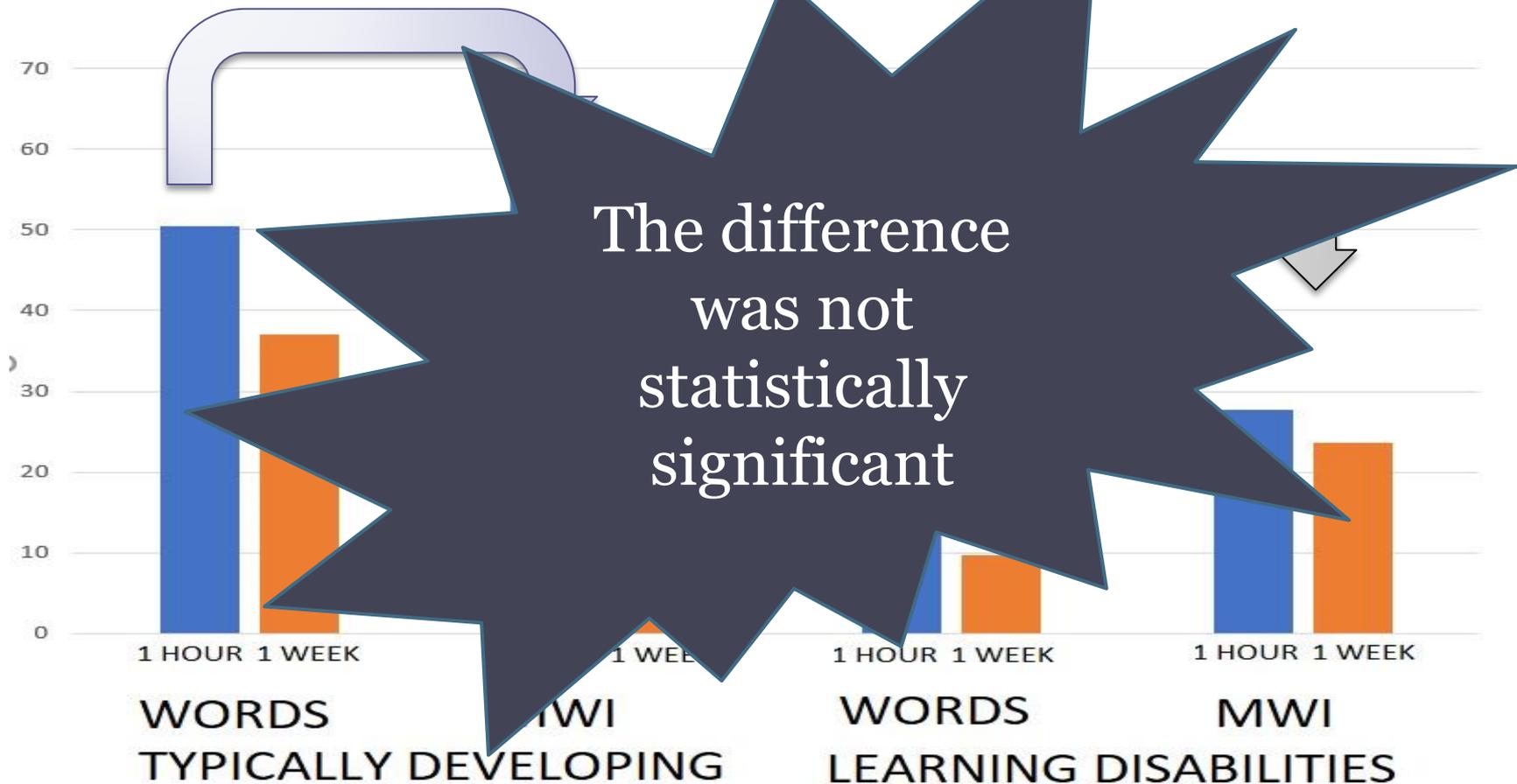
Analysis – Final results

Short-term memory percentages drop considerably from the teaching target in both groups of participants and for both tested items. Long-term retention drop continues (less than the one registered in short-term memory) in both groups.

NOTICE that a higher drop is registered in the TD group compared to the LD one.

Individual Words	100%	50,50%	-49,50%	37%	-13,50%
Multi-Word Items	100%	63,70%	-36,30%	55,50%	-8,20%
LD					
Individual Words	100%	21,10%	-78,90%	9,70%	-11,40%
Multi-Word Items	100%	27,70%	-72,30%	23,70%	-4%

Analysis – Hypothesis 1
Within group differences between the two targeted vocabulary items

The difference was not statistically significant

Analysis – Hypothesis 2
Between groups differences

Differences were found to be statistically significant

Significant statistical differences between the two groups

Test Statistics[a]

	Individual Words Post-test 1	Individual Words Post-test 2	Multi-word Items Post-test 1	Multi-Word Items Post-test 2
Mann-Whitney U	150,000	146,500	127,000	119,000
Wilcoxon W	340,000	336,500	317,000	309,000
Z	-3,161	-3,191	-3,644	-3,691
Asymp. Sig. (2-tailed)	,002	,001	,000	,000

Summary-Discussion 1

1. **Hypothesis 1 was not fully supported by the evidence:** The **Multi-word items were better retained in memory** compared to the individual words in both short and long-term memory in both TD and LD groups. However, the differences were not statistically significant.

1. **Hypothesis 2 was supported by the evidence:** **The differences between the TD and LD groups proved to be statistically significant** with the TD group scoring significantly better in all measurements than the LD group, thus confirming the second hypothesis.

Summary-Discussion 2

- **Similar to relevant research in the field (Ypsilandis, 2014; Ypsilandis & Mouti, 2017) retention of vocabulary items is never the targeted 100%.**

- **Both TD and LD groups exhibit the same learning - retention and drop pattern.**

- **The LD group registers a smaller drop percentage from short to long-term memory compared to the TD group.**
  This indicates that the problem with LD learners remains at the level of processing information (closer to short-term memory) and not at the level of long-term retention. This result comes in contrast to previous research according to which LD children exhibit difficulty in long-term information recall at which they were exposed (Swanson, Cooney & McNamara, 2004).

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