

『フォーミュラと外国語学習・教育』  
出版記念シンポジウム

# ISRS

## Indirect Spaced Repetition Software

(間接的間隔反復システム)を活用した  
フォーミュラ電子教材の可能性

**LET基礎理論関西支部**  
**ラフラー ルイ (立命館大学)**

# Thank you so much!

研究・教育に活用できる  
英語フォーミュラ  
観密度データ付

## フォーミュラと外国語学習・教育

定型表現研究入門

Formulaic Sequences in Foreign Language  
Learning and Education:  
An Introduction

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Thank you for to all the LET基礎理論関西支部 members who proofread my Japanese!

Let's put the finishing touches on our phrasal Wordlist, and produce an awesome online ressource.

-Louis L.

Egomemo

Total Cards studied  
118

Weekly Study Goal  
/ 100

Study

View Stats

Select Wordlist

My settings

Logout

Think of the meaning (translate)

Text: NH P.  
Level: BOX 2 (8h)

prediction  
(forecast, guess)

Right answer?

✓ ✗

# Presentation Flow

- 1- Introduction**
- 2- Literature Review**
- 3- ISRS demo video**
- 4- Formula List Logic**
- 5- Selected References**



# Introduction



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## “Practice makes Perfect”

There are a million excuses  
So, let's make “practice”  
part of the curriculum!

~both inside and out  
of the classroom

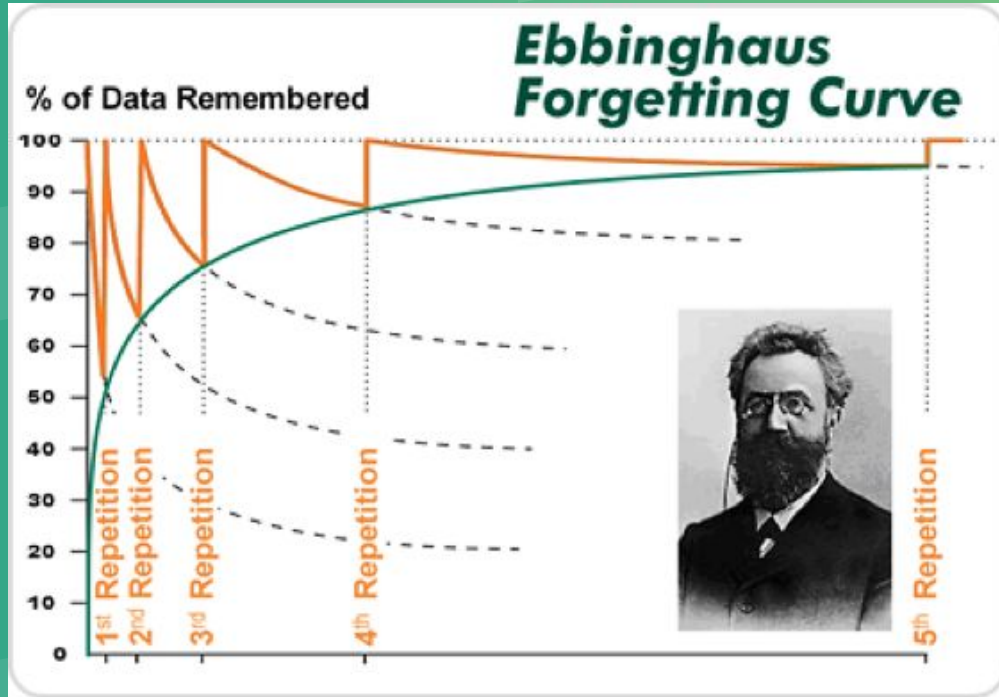
## Let's schedule “practice”

If 3 groups of students only have 25 minutes to study new words/phrases within 9 days, **which group will perform best on post-tests?**

Table 1. Typical Comparative Example of Expanded, Uniform, and Massed Algorithms

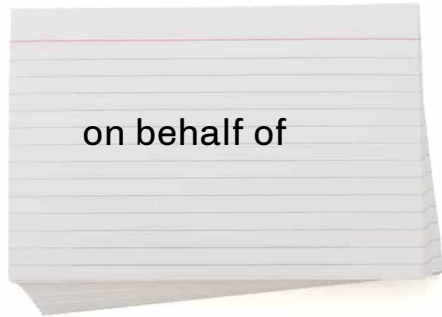
	Main Algorithm Types & Intervals	Initial Study	Interval ①	Interval ②	Interval ③	Interval ④
<b>A</b> →	“Expanded” (x type) (~12h start → x 2)	day 1 (start point)	day 1 or 2 (~12 hours)	day 3 (1 day)	day 5 (2 days)	day 9 (4 days)
<b>B</b> →	“Uniform” (same) (→ every 2 days)	day 1 (start point)	day 3 (2 days)	day 5 (2 days)	day 7 (2 days)	day 9 (2 days)
<b>C</b> →	“Massed learning” or (cramming)	(Total study time compressed into a single session) E.g. If a study session lasts 5 minutes: 5 consecutive sessions x 5 = 25 minutes total.				

# Yes, “Practice makes Perfect”



**And “spaced repetition” makes it even better!**

表 Side A card#192



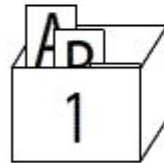
裏 Side B card#192



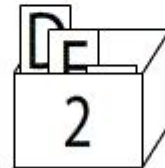
Sebastian Leitner (1972)

The “Leitner System” or “Box System”

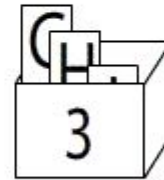
Session 1



Daily



Weekly

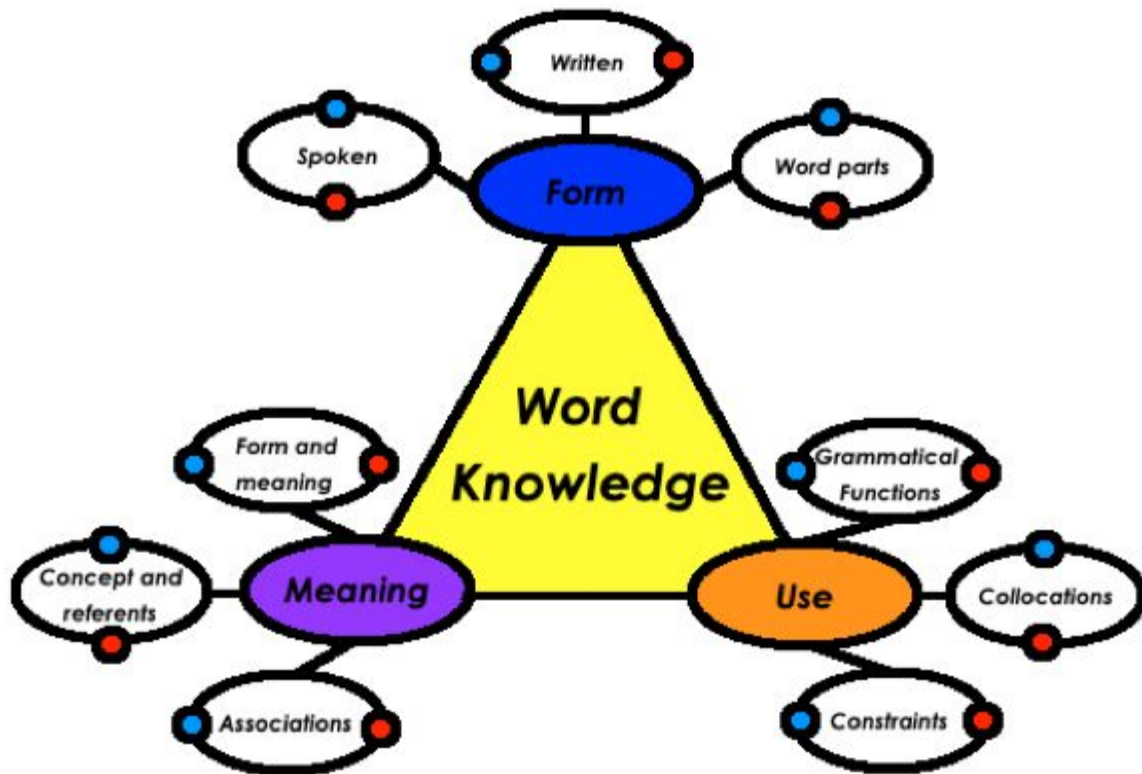


Monthly

\*simplified example



# The Molecular Level of "Word Knowledge"



- = Receptive knowledge
- = Productive knowledge

What is involved in "word knowledge" (Nation, 2001)

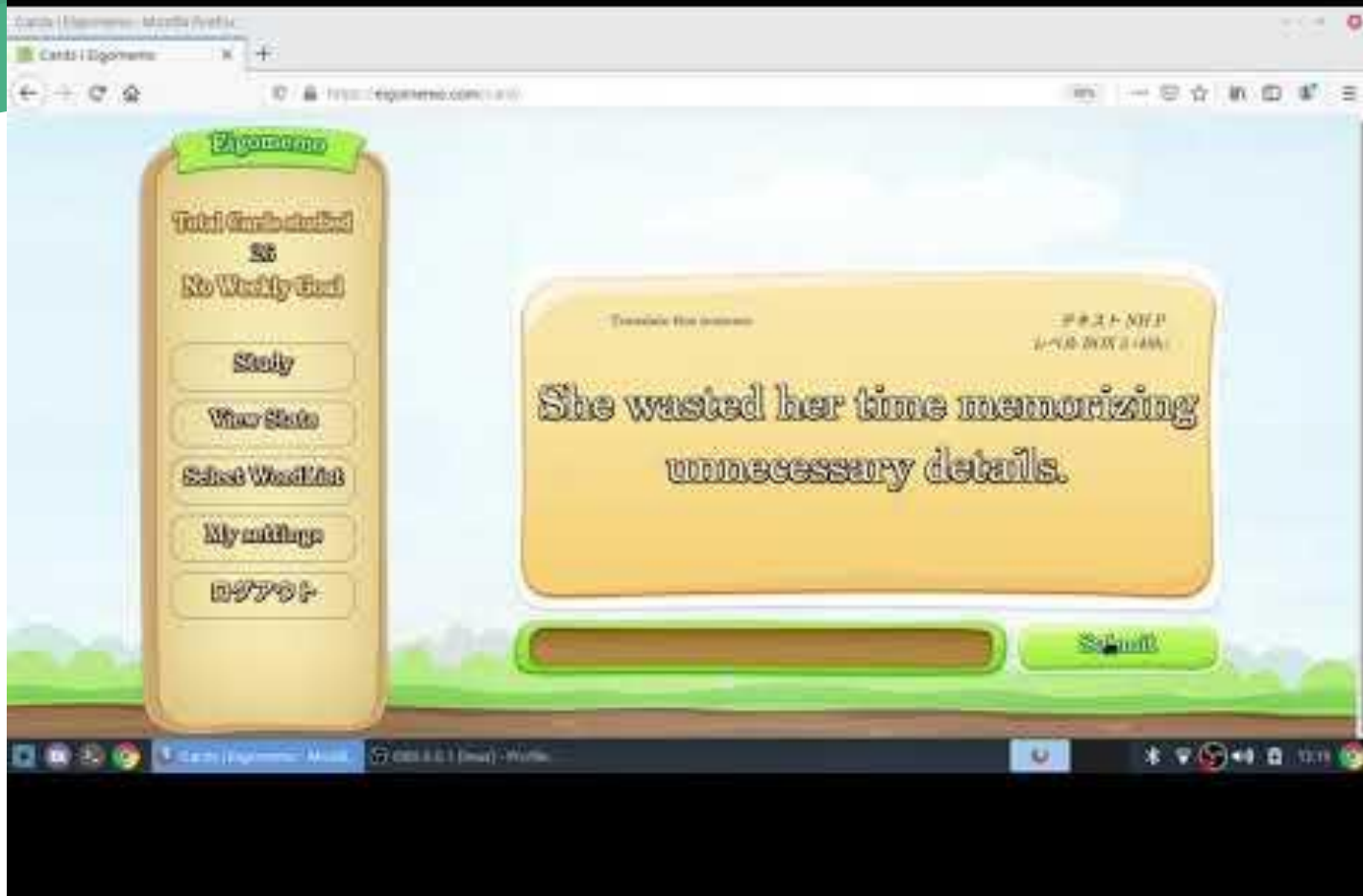


# Spaced-Interleaved Task Examples and Interval Breakdown for Indirect Spaced Repetition Software/System (ISRS)

Tier Q# level	Flow L1 = native language L2 = second language	Task Type	Task/Interval Route : <span style="color: green;">↓ when recalled/answered successfully</span> <span style="color: red;">↻ or ← when recalled/answered unsuccessfully</span> (cooldown timer before next review, h = hour, d = day)		
			Ⓜeaning Q#1 word or phrase	L2 audio to L1 recall	Recall Check
Ⓜeaning Q#2 word or phrase	L1 word/phrase to L2 recall	Recall Check	Session 2 (8h) ↓	Session 8 (9d) ↓	Session 14 (243d) ↓
ⓕorm Q#1 word or phrase	L2 audio to L2 word/phrase	Spelling	Session 3 (16h) ↓	Session 9 (18d) ↓	Session 15 (486d) ↓
ⓕorm Q#2 sentence	L2 (blank) to L2 sentence	Fill-in-the-blank	Session 4 (1d) ↓	Session 10 (27d) ↓	Session 16 (729d) ↓
Ⓛse Q#1 sentence	L2 sentence to L1 sentence	Writing	Session 5 (2d) ↓	Session 11 (54d) ↓	Session 17 (1458d) ↓
Ⓛse Q#2 sentence	L1 sentence to L2 sentence	Writing	Session 6 (3d) ↓	Session 12 (81d) ↓	Session 18 (2187d) <b>end</b>
(Optional)* Q#7 Text	Reading and Listening (L2 to L2)	(Voiced) Reading	<span style="color: green;">↩ back to top ↑</span> <span style="color: green;">↩ back to top ↑ or end (option)</span>		

\*For increased effectiveness, ISRS can be combined with a fluency-building (voiced) reading task. For example, studying a set of word items, which compose a text could trigger such an activity.

# Video



<https://www.youtube.com/watch?v=iSrOutmclvY&t=1s>

on behalf of

～を代用して

表1 フラッシュカードの様々な質問の例(Louis Lafleur, Creative Commons 4.0)

?# レベル	流れ	質問タイプ	例：on behalf of (#192)
Ⓜ ?#1 語・句	英語(音声)から 日本語(考える)	リスニング	(表)on behalf of.mp3 (裏)～を代表して
Ⓜ ?#2 語・句	日本語(文字)から 英語(考える)	リコール	(表)～を代表して (裏)on behalf of
ⓕ ?#1 語・句	英語(音声)から 英語(書く)	スペリング	(表)on behalf of.mp3 (裏)_____(スペリング)
ⓕ ?#2 文・語・句	英語(ブランク)から 英語(書く)	穴埋め式問題 (語・句)	(表)I'd like to apologize (blank) the committee.(～を代表して) (裏)_____(スペリング)
ⓞ ?#1 文	日本語(文)から 英語(書く)	ライティング	(表)委員会を代表して謝罪したく存じます。 (裏)_____(書く)
ⓞ ?#2 文	英語(文)から 日本語(書く)	ライティング	(表)I'd like to apologize on behalf of the committee. (裏)_____(書く)
(+) ?#7 対話など	リスニング リーディング	音読	音読

(+)フラッシュカードセット (対話を含む語彙)を練習した後、流暢さの向上(音読など)活動と結びつけることもオプションとして可能である。

Show Stats for the currently selected Wordlist(s):  
 Between 05/11/2020 and 07/26/2020  
 For selected Group(s) (25 users)

Total Days :	77	Total Cards studied :	1046
Active Days :	3	# of cards reviewed	733
Inactive Days :	74	New cards done	313
Total (min)	1161	All review done days :	3
Study (min)	1161	15+ min days :	7
# Menu (min)	0	10 new cards day :	9

Download CSV



### **EDIT GROUP INFORMATION**

Edit Group Name : SW2(YI)

(Opt.) Wordlist selection :

(Opt.) # Weekly Card Goal : 250

(Opt.) Starting Week Day :

(Opt.) Starting Time : 14:40

(Opt.) Class Start Date : 2020/10/13

(Opt.) Class End Date : 2020/12/22

Save

Cancel

### **OTHER LISTS**

- GROUP : Junior High**
- New Horizon 1 Demo**
- General N-Hor
- GROUP : Academic**
- e-NAWL**
- eNAWL 001-100
- eNAWL 101-200
- eNAWL 201-300
- eNAWL 301-400
- eNAWL 401-500

# Selected References

Andersen, S. (2011) Sarah's scribbles. WebComics. sarahcandersen.com

Ebbinghaus, H. (1964). *Über das Gedächtnis: Untersuchungen zur experimentellen Psychologie* [Memory: A Contribution to Experimental Psychology], New York, NY; Dover Publications. (Original work published 1885).

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Leitner, S. (1972). *So lernt man lernen: Der Weg zum Erfolg* [How to learn to learn: The road to success], Freiburg im Breisgau, Baden-Württemberg: Verlag Herder.

Nation, I. S. P. (2001). *Learning vocabulary in another language*. Cambridge: Cambridge University Press.