HOW DO THREE MODES OF EXTENSIVE READING AFFECT LEARNER VOCABULARY SIZE AND READING RATE?
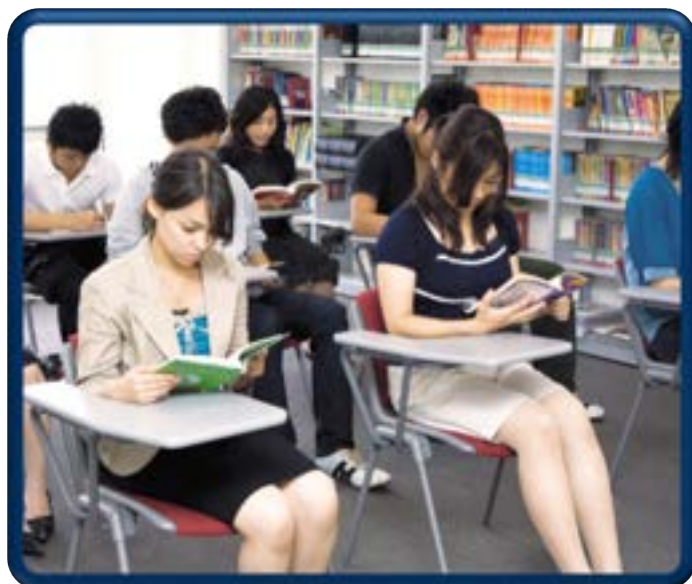
Jeff Peterson and Paul Warnick

Brigham Young University

The Sixth Extensive Reading World Congress

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Three Styles of ER

Extensive Reading **(ER)**

Extensive Listening **(EL)**

Audio-assisted
Extensive Reading **(AER)**

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Theoretical Basis

- Incidental vocabulary learning hypothesis (Nagy & Herman, 1985)
  - primarily through regular, sustained reading

- Rauding Theory (Carver, 2000)
  - scanning←skimming←rauding→learning→memorizing

Cognitive Processes		
Less Involved	←——————→	More involved

  - ER aligns best with the concept of rauding
  - Rauding: reading at a good pace

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Vocabulary Acquisition

- ER studies on vocabulary acquisition among English language learners are many

- Fewer among JFL adult learners

- Various results in the JFL context
  - IR > ER (Senoo & Yonemoto, 2014)
  - ER > other (Fukumoto, 2004; Rothville, 2019)
  - High Immediate Recall (Mikami & Harada, 2011)
  - Incidental acquisition (Leung, 2002)

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Reading Rate and Comprehension

- Promising results from previous research

- Most compare ER and intensive reading

- Few examine non-English language learners
  - Few experimental or quantitative studies in the Japanese context

- Limitations
  - Unmonitored outside of class
  - Self-reporting out of class reading or test results
  - Unclear measurement methods

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Previous ER Research

- Peterson (2022a)
  ER effects on learners of Japanese
  - Quantitative single-subject case study experiment design
  - Monitored 8 intermediate learners
  - Significant increase in reading rates
  - Comprehension not hampered by increase

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Previous ER Research

- Single-subject designs complement other research methods (Neuman & McCormick, 1995)

- Current study
  - Builds on Peterson (2022a, 2022b)
  - Essential work within research agenda

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Research Question

- How do three modes of extensive reading (AER, EL, and ER) affect third- and fourth-year university JFL learner vocabulary size and reading rate?

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Current Study

- Data from the first two years of a three-year study involving learners of Japanese at the university level (four 3rd-year and 4th-year courses).

- Four groups: extensive reading (ER)
                        extensive listening (EL)
                        audio-assisted extensive reading (AER)
                        culture video viewing (control group)

- Examining gains in: reading rate
                               vocabulary size

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Participants

Year 1	Fall 2021	Winter 2022	Total
	64	19	83

Year 2	Fall 2022	Winter 2023	Total
	31	30	61

Year 3	Fall 2023	Winter 2024	Total
	55	(30)	(85)

Total	Over 200 participants expected

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Methods: Data Collection and Analysis Procedures

- Randomized pretest-posttest experimental design

Participants Randomly Assigned

ER Group	Pretests	ER Treatment	Posttests
EL Group	Pretests	EL Treatment	Posttests
AER Group	Pretests	AER Treatment	Posttests
Control Group	Pretests	Control	Posttests

- Proctored Pretests and Posttests
  - Set of 5 reading rate and comprehension tests
  - Vocabulary size test

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Methods: Data Collection and Analysis Procedures

Proctored Assessments

Reading 0 (Sample Passage)

1.

日本の劇
にほん　げき

みなさんは、「笑い」には不思議な 力 があることを知っ
わら　　　ふしぎ　ちから　　　　　し

健康と深い関係があり、その効果は科学的にも 証明 されて
けんこう　ふか　かんけい　　　　　こうか　かがくてき　　しょうめい

何年か前、ある科学者が、実験をしました。一人の患者に
なんねん　まえ　　　　かがくしゃ　じっけん　　　　　ひとり　かんじゃ

そしてもう一人の患者に 難 しい講義を聞かせました。すると、難 しい講義を聞いた患者の病気が
ひとり　かんじゃ　むずか　ぎろん　き　　　　　　むずか　ぎろん　き　かんじゃ　びょうき

悪くなったが、おもしろい 話 を聞いて笑った患者は、病気が少しよくなったという結果が出たそう
わる　　　　　　　　　はなし　き　わら　かんじゃ　びょうき　すこ　　　　　　けっか　で

です。

さて、人間の健康にとって大切な行為である「笑い」、これを取り入れた日本の伝統芸能と
にんげん　けんこう　　たいせつ　こうい　　わら　　　　　と　い　にほん　でんとうげいのう

言えば、一番に日本の伝統的な「劇」が挙げられます。「日本の劇」では、あんまり歌ったり
い　　いちばん　にほん　でんとうてき　げき　あ　　　にほん　げき　　　　　うた
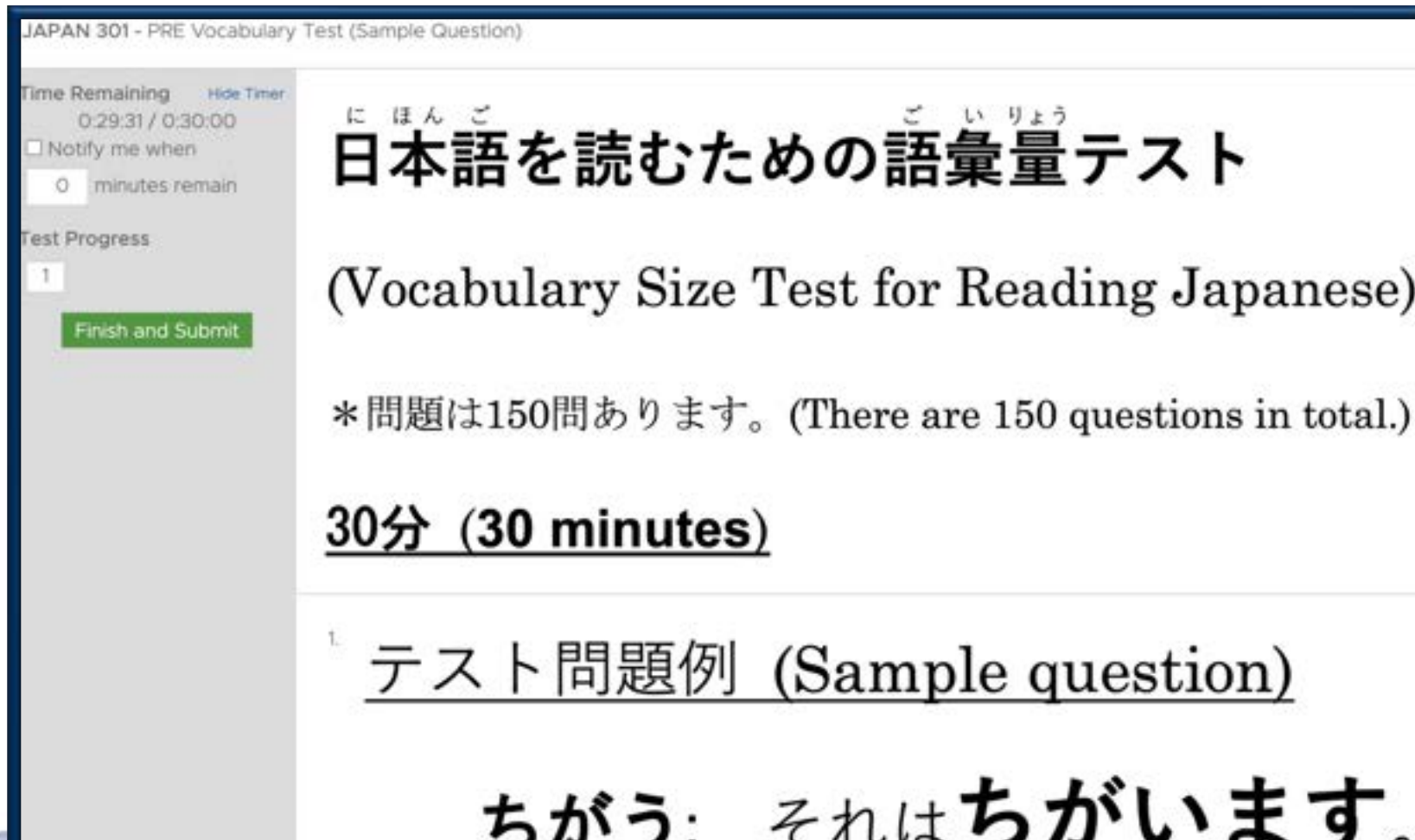
踊ったりしない、言葉を 中心 とした劇で、１４世紀ごろに劇の 形 が完成しました。
おど　　　　　ことば　ちゅうしん　　げき　　せいき　　　げき　かたち　かんせい

「日本の劇」には、強い人と強い人のために 働く人、親と子、お坊さんなどいるいるな人物が

Submit

Select the item which best answers each question.

1. Which of the following does the article talk about?
   - ○ A. The scientists of Japanese theatre
   - ○ B. Building relationships through laughter
   - ○ C. Theatre experiments
   - ○ D. The strange power of laughter

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Methods: Data Collection and Analysis Procedures

Proctored Assessments

Methods: Data Collection and Analysis Procedures

- Analysis of Gain Scores: Analysis of Covariance (ANCOVA)
  - Equate groups statistically based on variables
    - Pretest scores (covariate)
    - Number of sessions attended (covariate)
  - Mitigates difference between groups on pretest and number of sessions attended

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Methods: Data Collection and Analysis Procedures

- Three Treatment Groups

Extensive Reading **(ER)**

Extensive Listening **(EL)**

Audio-assisted
Extensive Reading **(AER)**

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Methods: Data Collection and Analysis Procedures

- Control Group
  - Begin Japanology and Japanology Plus
  - NHK World
  - Traditional and contemporary Japanese life and culture
  - Participants chose what to watch
  - Watched individually in class
  - Wrote a one-paragraph summary for each video of what they learned

Control:
Culture Video Viewing
in English

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Methods: Materials

- Peterson, J. (2019a). *Japanese extensive reading resources database (JERRD)* (Version 1) [Computer software]. https://www.researchgate.net/project/Extensive-Reading-Tadoku-Databases

	Title	Graded Level	Location	Character Count	Word Count	Average # of Unknown Words/Page @ 98–95% Level	Type	Genre	Subgenre	Format	Furigana	95% Headword
22	私はだれでしょう？	0	Taishukan Japa	340	183	0−0	Non-fiction	Quiz	Fun/Informativ	Print	Yes	4,000
23	おもしろい！日本のトイレ	0	Taishukan Japa	288	146	0−1	Non-fiction	Guide	Informative	Print	Yes	4,000
24	キツネとカラス・ネズミの相談	0	Taishukan Japa	307	165	0−1	Fiction	Tale	Funny	Print	Yes	3,000
25	『圭太とネコ石』（その一）	A	https://jgrpg-s	2,698	1,795	2−4				Digital	Yes	1,000
26	『圭太とネコ石』（その二）	A	https://jgrpg-s	3,183	2,068	2−4				Digital	Yes	1,000
27	『圭太とネコ石』（その三）	A	https://jgrpg-s	3,076	2,063	1−4				Digital	Yes	1,000
28	大きいかばんと小さいかばん	A	https://jgrpg-s	1,967	1,128	2−5				Digital	Yes	1,000
29	蜘蛛の糸	A	https://jgrpg-s	2,676	1,614	1−3	Fiction	Short Story	Moral	Digital	Yes	1,000
30	ニュージーランドのオークランド	1	http://www174	408	209	0−1	Non-fiction	Travel	Informative	Digital	Yes	1,000
31	バナナは日本一	1	http://www174	591	340	1−2	Non-fiction	Guide	Food	Digital	Yes	2,000
32	「日本へ行きたい！」家族の話	1	http://www174	1,730	1,015	2−5	Non-fiction	Autobiography	Informative	Digital	Yes	3,000

Reading Log · Personalized List · Weekly Statistics · Explore

Methods: Data Collection and Analysis Procedures

- 1 Semester, 14 Monitored 50-minute In-class Activity Sessions

ANCOVA J-CAT Number of Participants by Group

Group	N
AER	36
ER	36
EL	37
C	35

ANCOVA Reading Rate Gain (CPM)

Group	N	Mean	Std. error	95% Confidence Interval	
				Lower bound	Upper bound
AER	36	5.880	4.606	-3.227	14.988
ER	36	4.640	4.608	-4.471	13.752
EL	37	3.976	4.553	-5.027	12.978
C	35	1.376	4.672	-7.862	10.614

* Covariates appearing in the model are evaluated at the following values: Pre Average Reading Rate (CPM) = 154.40, Sessions Attended = 13.84.
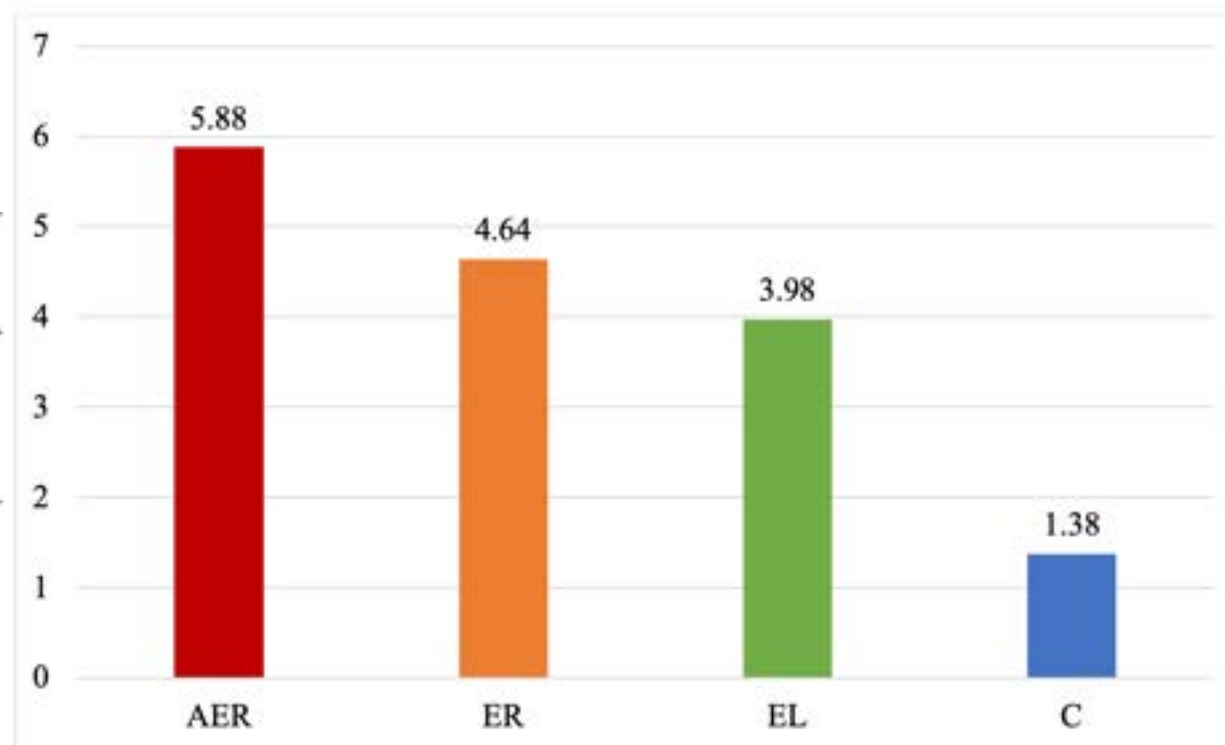
ANCOVA Reading Rate Gain (CPM)

	Sum of squares	df	Mean square	F	p
Group	382.751	3	127.584	.168	.918
Error	104887.386	138	760.054		
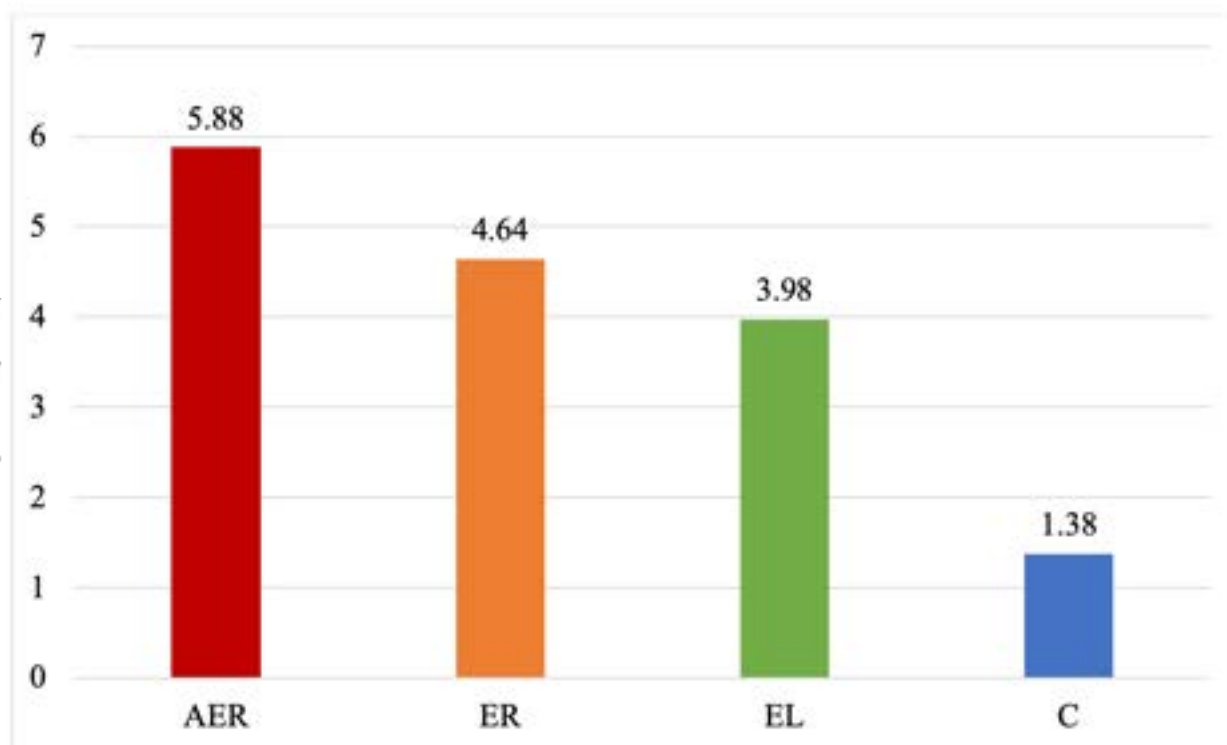
Reading Rate Gains (CPM)

(AER) **(ER)** **(EL)**

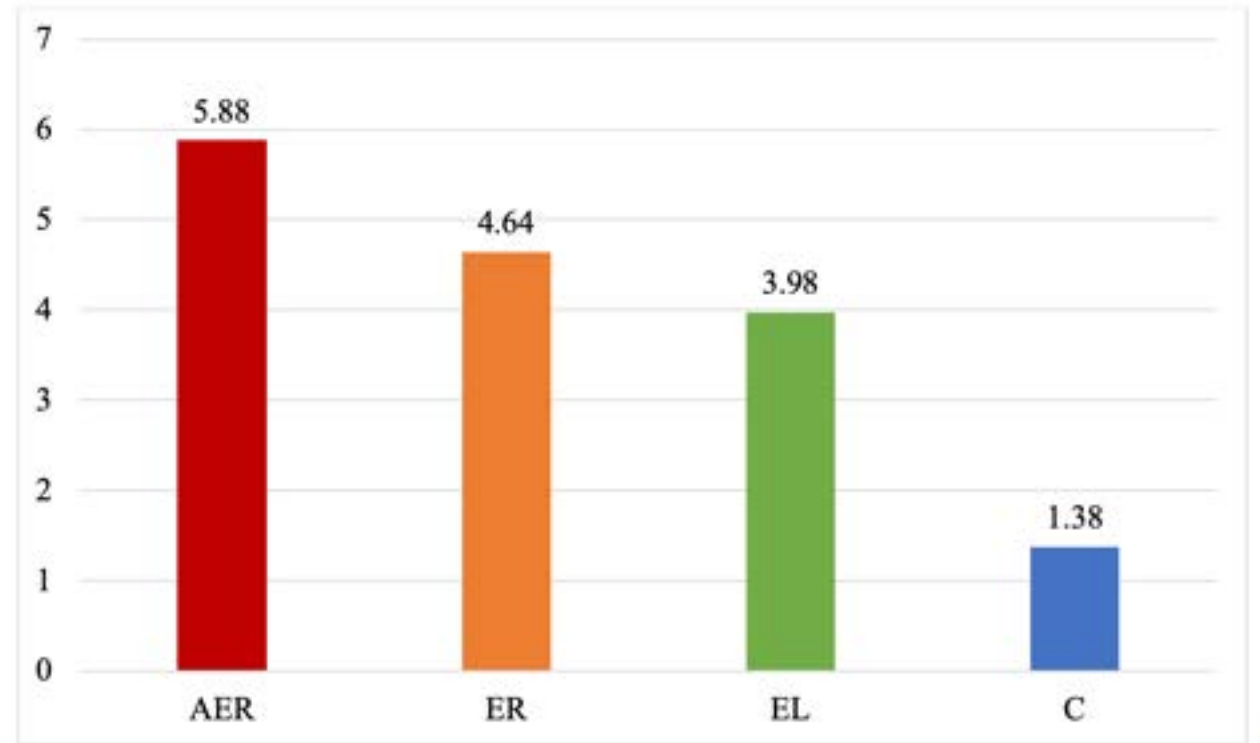|	AER	ER	EL	C
	5.88	4.64	3.98	1.38

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Reading Rate Gains

- Lower than Peterson (2022b)
- Number of assessments less than Peterson (2022b)
  - Fluency development practice?
- Nation and Waring (2019):
  - Fluency gains more substantial with fluency development training

Reading Rate Passage Comprehension Scores

Group	Pretest		Posttest	
	Mean	*SD*	Mean	*SD*
AER	3.811	.679	4.028	.564
ER	3.810	.831	4.057	.611
EL	3.559	.999	3.685	.812
C	3.766	.849	3.897	.863

ANCOVA Vocabulary Size Gain Scores (Hundreds)

Group	N	Mean	Std. error	95% Confidence Interval	
				Lower bound	Upper bound
AER	36	14.549	1.770	11.049	18.048
ER	36	14.322	1.767	10.828	17.816
EL	37	11.808	1.753	8.341	15.274
C	35	14.451	1.795	10.902	18.000

* Covariates appearing in the model are evaluated at the following values: Pre Vocabulary Size = 52.85, Sessions Attended = 13.84.

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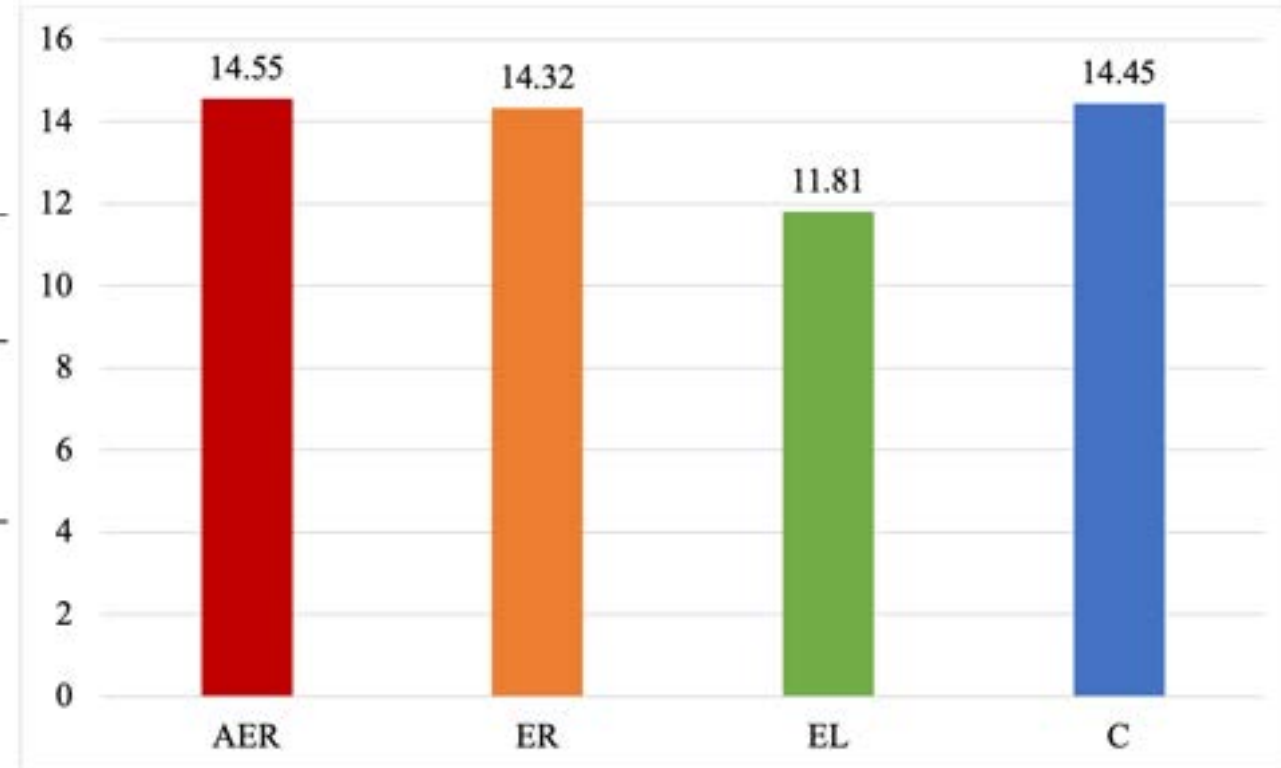
ANCOVA Vocabulary Size Gain Scores (Hundreds)

	Sum of squares	df	Mean square	F	p
Group	187.944	3	62.648	.558	.643
Error	15485.514	138	112.214		

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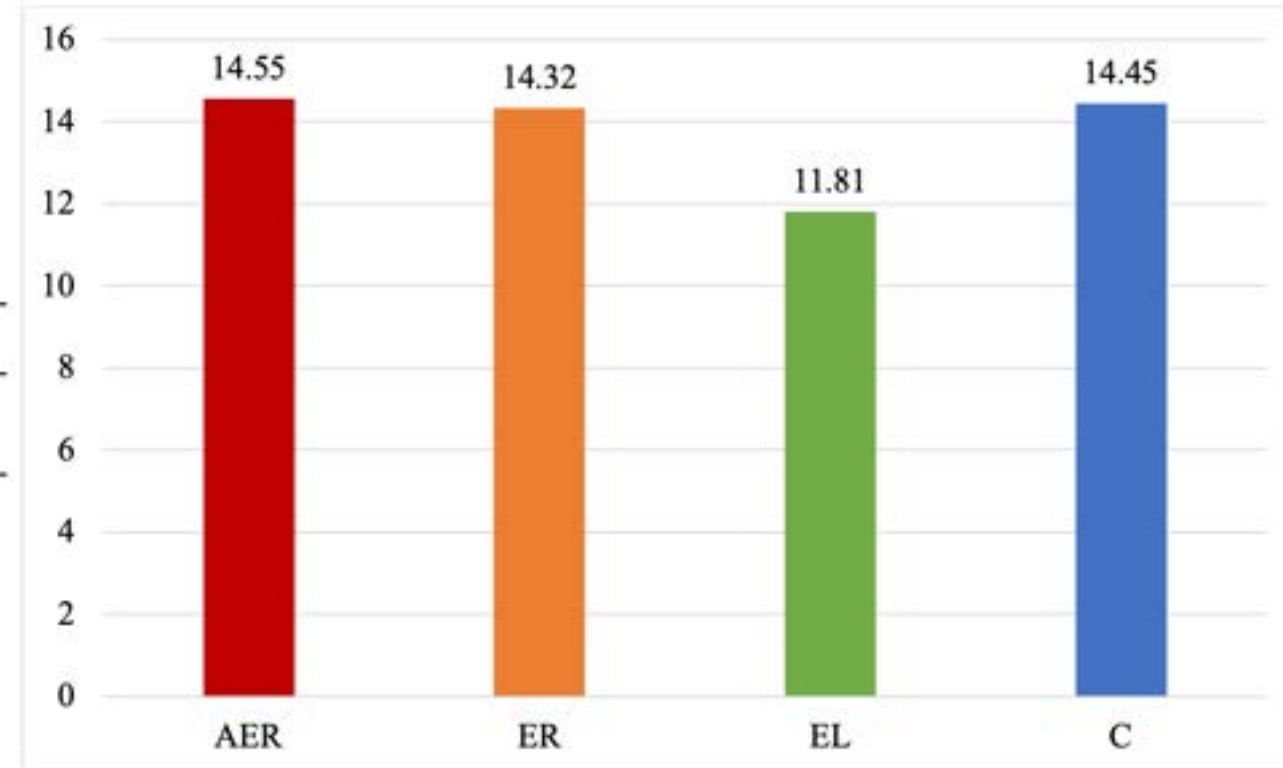
Vocabulary Size Gains

- Mixed results
  - AER, ER, control had similar scores
  - EL weaker performance
- Gains from other activities
  - Coursework, same pre/post assessments, assessment not sensitive enough to small changes
- Contrasting results with Rothville (2019)
  - ER > non-reading group

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Key Findings

- Reading Rate:
    AER showed the greatest gain, followed by ER, EL and C. Along with an increase in reading rates, reading comprehension also improved, showing that faster reading did not impede comprehension.

- Vocabulary Gain
    AER showed the greatest gain, followed by ER, C and EL.

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Limitations

- Limited class time
  - Max 50 minutes per session
    (14 Session Total: 11 hours 40 minutes)

- Limited sample size
  - 35+ participants per group

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Pedagogical Implications

- These data suggest that AER activities bring greater growth in both reading rate and vocabulary gain.
  - Consider AER or ER as a supplemental activity or stand-alone course
  - Provide materials with audio narrations
- EL might not provide sufficient stimuli
  - May lead to passive listening
  - Consider requiring learners to write a short summary of each book or passage they listen to
  - Consider AER or ER for more active participation

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Current Impact

- Impact on Current Teaching
  - Students read or listen to multiple books and thousands of words each week

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Participant Feedback

- My favorite part of tadoku is reading different genres. By having the readings be fairly short and have a variety of material to read, it helped me realize that I can read Japanese for fun and that I am not limited to educational articles or waiting for homework to read. The greatest benefit I have is being able to read without the pressure of having to know every word or being tested on it later. Reading is a great hobby, and reading in another language is not an exception. (ER)

- I love pleasure reading, I always enjoy reading and doing such in Japanese has been a big bolster in my confidence with the language, which I felt I was forgetting after being away from it for a while. (ER)

- For me, one danger of intensive Japanese study is that I come to associate the language with stress and strain, which prevents me from seeking it out in day to day life. Pleasure reading gave me the opportunity to engage with Japanese without frustration, confusion, or the weight of expectations. Thanks to the pleasure reading, I genuinely want to read more on my own. I think this is the greatest take-away for me. It will help me carry my Japanese language skills with me throughout my life.   (ER)

- The greatest benefit from participating in Tadoku was feeling excited about reading. I feel like with the positive experience I got from tadoku, I will continue to read more Japanese stories on my own. (ER)

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Participant Feedback (continued)

- I felt it was interesting to be able to listen to so many random traditional stories and other stories. I feel like listening to these stories helped me to improve in listening overall, especially because the story tellers of each story was different, so I could get used to listening to Japanese in different accents. A challenge for me is that sometimes I would be dozing off before I knew it.   (EL)

- I think that my listening comprehension skyrocketed by the end of the semester thanks to the pleasure listening activity.   (EL)

- I feel like the only challenge is that I like to read in addition to listen. I feel like I would engage more. (EL)

- One of the best parts of doing this is seeing how much my listening comprehension has improved. I feel like I can listen and grasp a lot more than I did before.   (EL)

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Participant Feedback (continued)

- I really enjoyed pleasure reading with audio. I really felt my reading speed and comprehension increase which was very gratifying.   (AER)

- Since I had done pleasure readings in previous classes, I think the best part was realizing how much my comprehension rate has improved. Also, being able to listen to the Japanese audio helped with pacing and pronunciation. I feel it got me into the habit of reading more in Japanese just for the sake of reading.   (AER)

- I thought that it was very helpful, as we got to learn about various topics (nonfiction books) and practice our comprehension of sentence patterns (fiction books). I liked that I was able to listen to the audio while reading, as this helped me to better understand words that I wasn't familiar with. I feel that if I had only been reading, I would not know how to pronounce a lot of the kanji, and if I had only been listening, I wouldn't have the context that kanji characters provide. Since I used both, I feel like I was really able to maximize the amount of content that I learned from the RCLA sessions. …Overall, I think the greatest benefit was just getting more exposure to the language and developing a habit of pleasure reading/listening. (AER)

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Participant Feedback (continued)

- My reading speed in Japanese is getting faster, it's also slightly easier to catch fast Japanese speech as I listen to the books at at least 1.5X speed. (AER)

- For me, the best part has been being able to actually feel like I'm improving while also enjoying the stories that I'm reading. It's really relaxing to read along with audio. Honestly, the greatest benefit for me that I've seen is that as I'm listening and reading simultaneously, my brain seems to be connecting with the meaning and order of the words far better than ever before. It seems that combining those two unlocks some secret bunker in my brain that stores language comprehension. It's been super nice and has changed the way that I study new readings in both this class and others.   (AER)

- The best part of my pleasure reading/listening experiences have definitely been the joy of actually comprehending the stories that I was reading. It was extremely satisfying to be able to actually understand and enjoy stories rather than struggle with them. Going along with that, the greatest benefit that I've gotten from it is my ability to better retain vocabulary and meaning in context. It has been exceptionally helpful for my overall comprehension with reading and listening, so in both of those areas, I have definitely felt a lot of improvement.   (AER)

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Future Directions

- Continue collecting data through Winter 2024
  - Conduct analysis with large sample size of 200+ participants (≈50+ participants per group)

- Explore possible relationship between number of characters/words read or listened to and skill gains
  - Does reading or listening to more content lead to greater gains regardless of group (AER, ER, EL)?

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THANK YOU

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