



Wednesday, August 28th, 2024  
(9:25~9:50) Room 1A1  
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**CALL for humanity**

26 - 29 August 2024

## **The Selection of an Appropriate Word Counting Unit for Vocabulary Teaching and Learning in CALL Projects**

**Why?**

..very few studies address  
teacher/researcher practices and perspectives regarding WCUs

# What is a word? according to Google



word

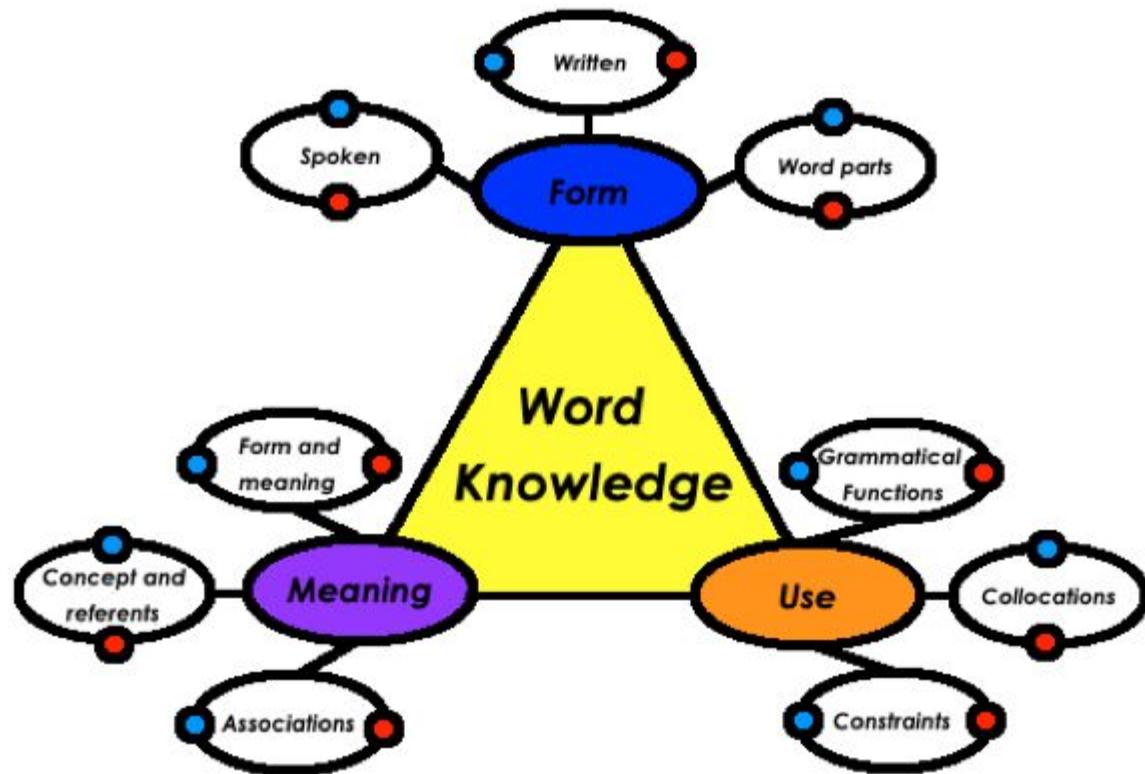
/wɜːd/

*noun*

1. a single distinct meaningful element of speech or writing, used with others (or sometimes alone) to form a sentence and typically shown with a space on either side when written or printed.

What about word knowledge? What can be learnt? What should be taught?

# The Molecular Level of "Word Knowledge"



- = Receptive knowledge
- = Productive knowledge

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



How do we or should we  
count words?

How many words  
(do you believe)  
are there in this list?

drank, drink, drinks, drinkable, drinker, drinking,  
drunk, drunker, drunkest, drunkenly, non-drinker,  
undrinkable

(a) 20

(b) 12

(c) 9

(d) 5

(e) 1

# Word Counting Unit Reference (Your roadmap to WCUs)

→QR link

Example and/or Definition (Context) with notes		① All Forms & Meanings	② Plenna <sup>(1)</sup> "Plurality" <sup>(2)(3)</sup>	③ Lemma "Pure" <sup>(4)</sup> Lemma	④ Elemma "Unpure" Lemma	⑤ Word Family (all related forms)
..to drink water.. ..he/she/it drinks.. ..am/are/is/was/were drinking.. ..drank water yesterday.. ..have/has/had drunk.. ..to drink in the view. (*expression) a person who drinks too much ..many beverages.. a beverage ..drinking is. /..(dis)like drinking.. ..drink (person).. ..(person) gets drunker faster.. ..(person) was the drunkest of all.. a large brownish European moth a container for animals to drink from ..he/she is a non-drinker.. ..drinkable (beverage).. ..undrinkable (beverage).. ..to sing drunkenly..	PRES 3SG PROG PST PST PART SG PL SG vN / GER COMP ADJ SUPL ADJ SG SG SG hyphenated	drink (V-1) drinks (V-1) drinking (V-1) drank (V-1) drunk (V-1) drink (V-2) drunk (N) drinks (N) drink (N) drinking (N) drunk (ADJ) drunker (ADJ) drunkest (ADJ) drinker (N-1) drinker (N-2) drinker (N-3) non-drinker (N) drinkable (ADJ) undrinkable (ADJ) undrinkable (ADV)	drink (V-1) (4) drank (V-1) (4) drunk (V-1) drink (V-2) drunk (N) drink (N) (Δ) drinking (N)	drink (V) drunk (N) drink (N) (Δ) drinking (N) drunk (ADJ) drinker (N)	drink drinker non-drinker (N) drinkable (ADJ) undrinkable (ADJ) undrinkable (ADV)	1
<sup>(1)</sup> formed coined by the author. <sup>(2)</sup> from Plurality <sup>(3)</sup> allows a plurality of entries under same PoS <sup>(4)</sup> distinguishes between PoS <sup>(5)</sup> Should verbal Nouns/Gerunds be considered as a sort of inflectional affix? (debatable) <sup>(6)</sup> Should "hyphenated affixes" such as "non-" in non-drinker be considered as a valid prefix? (debatable) <sup>(7)</sup> WF5) & F6) are more easily computer countable (no PoS) <sup>(8)</sup> for advanced learners, WF may be enough + to infer most forms	Max. allowed #headwords 20	11-15	8-10	5-6	1	
Notable Lists	?	Japanese ESL textbooks' index, Also dictionaries	Lemma Corporuses Ex: COCA lemma list	New General Service List (NGSL)	General Service List (GSL)	
Counting Tool(s) <sup>(5)</sup>	← Man & Computer , Computer →					
Ensued study <sup>(6)</sup>	← Immense/Slow yet Profound , Light/Quick yet Limited →					



		① <u>All</u> <u>Forms</u> & <u>Meanings</u>	② <u>P</u> lemma <sup>(1)</sup> “Plurality” <sup>(2)(3)</sup>	③ <u>L</u> emma “Pure” <sup>(4)</sup> Lemma	④ <u>E</u> mma “Unpure” Lemma	⑤ <u>W</u> ord <u>F</u> amily (all related forms)
Example and/or Definition (Context) with notes						
..to drink water.. ..he/she/it drinks.. ..am/are/is/was/were drinking.. ..drank water yesterday.. ..have/has/had drunk.. ..to drink in the view.. (*expression) a person who drinks too much ..many beverages.. a beverage ..drinking is.. / ..(dis)like drinking.. ..drunk (person).. ..(person) gets drunker faster.. ..(person) was the drunkest of all.. a person who drinks a large brownish European moth a container for animals to drink from ..he/she is a non-drinker.. ..drinkable (beverage).. ..undrinkable (beverage).. ..to sing drunkenly..	PRES	drink (V-1)	drink (V-1)	drink (V)	drink	drink
	3SG	drinks (V-1)				
	PROG	drinking (V-1)				
	PST	drank (V-1)				
	PST PART	drunk (V-1)	(*) drunk (V-1)			
		drink (V-2)	(*) drunk (V-1)			
	SG	drunk (N)	drink (V-2)	drunk (N)		
	PL	drinks (N)	drunk (N)	drink (N)		
	SG	drink (N)	drink (N)	drink (N)		
	vN / GER	drinking (N)	(Δ) drinking (N)	(Δ) drinking (N)		
	drunk (ADJ)	drunk (ADJ)	drunk (ADJ)			
COMP ADJ	drunker (ADJ)					
SUPL ADJ	drunkest (ADJ)					
SG	drinker (N-1)	drinker (N-1)	drinker (N)	drinker		
SG	drinker (N-2)	drinker (N-2)				
SG	drinker (N-3)	drinker (N-3)				
hyphenated	non-drinker (N)	(?) non-drinker (N)	(?) non-drinker (N)	(?) non-drinker		
	drinkable (ADJ)	drinkable (ADJ)	drinkable (ADJ)	drinkable		
	undrinkable (ADJ)	undrinkable (ADJ)	undrinkable (ADJ)	undrinkable		
	drunkenly (ADV)	drunkenly (ADV)	drunkenly (ADV)	drunkenly		
	Max. allowed #headwords	20	11-15	8-10	5-6	1

<sup>(1)</sup> termed coined by the author, P from Plurality

<sup>(2)</sup> allows a plurality of entries under same PoS

<sup>(3)</sup> allows (\*) irregular inflectional patterns to be separate items

<sup>(4)</sup> distinguishes between PoS

<sup>(Δ)</sup> Should verbal Nouns/Gerunds be considered as a sort of inflectional affix? (debate)

<sup>(?)</sup> Should “hyphenated affixes” such as “non-” in non-drinker be considered as a valid prefix? (debate)

<sup>(5)</sup> WF⑤ & F④ are more easily computer countable (no PoS)

<sup>(6)</sup> for advanced learners, WF may be enough = to infer most forms

Notable Lists	?	Japanese ESL textbooks' index, Also dictionaries	Lemma Corpuses Ex: COCA lemma list	New General Service List (NGSL)	General Service List (GSL)
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# What word counting unit is best for EFL students?

(Literature Review)

**The word family** (i.e., single headwords such as “drink” but not other word forms such as drinks, drank, drinker, and so on...) has for long been the WCU yardstick (e.g., General Service List; West, 1953) for ESL/EFL teaching as it was assumed students could infer other word forms.

**However, recent studies** such as McLean (2018); Stoeckel et al. (2020) question the pedagogical appropriateness of the word family as a counting unit for lower-level language learners, and point to other WCUs such as the flemma which presents/counts derivational forms of words as separate entries or the lemma which additionally considers variance in parts of speech as separate entries as being more appropriate alternatives as they permit derivational word forms to be included as additional items.

# What word counting unit is best for EFL students?

(Literature Review)

**Table 1** *The Eight Inflectional Word Forms*

#	POS	Inflection description
(1)	nouns	possessive case -'s
(2)	nouns	plural - (e)s or irregular
(3)	verbs	past tense - (e)d or irregular
(4)	verbs	present participle - ing
(5)	verbs	past participle -ed/en or irregular
(6)	verbs	3rd person singular -(e)s
(7)	adjectives	comparative -er
(8)	adjectives	superlative -est

Note. Inflections are limited to suffixes; POS = Part of Speech.



# What word counting unit is best for EFL students?

(Literature Review)

**Table 2** *Derivational Word Form Examples (root word “drink”)*

Category	Derivational affix	Final word form
noun	-er	drinker
adjective	-able	drinkable
adverb	-en (adj) + -ly (adv)	drunkenly
prefix	non-	non-drinker
prefix & suffix	un- + -able	undrinkable

Note. Example derivational affixes outside of the eight inflections.

Example and/or Definition (Context) with notes		① All Forms & Meanings	② Plemma <sup>(1)</sup> “Plurality” <sup>(2)(3)</sup>	③ Lemma “Pure” <sup>(4)</sup> Lemma	④ Elemma “Unpure” Lemma	⑤ Word Family (all related forms)
..to drink water.. ..he/she/it drinks.. ..am/are/is/was/were drinking.. ..drank water yesterday.. ..have/has/had drunk.. ..to drink in the view.. (*expression) a person who drinks too much ..many beverages.. a beverage ..drinking is.. / ..(dis)like drinking.. ..drunk (person).. ..(person) gets drunker faster.. ..(person) was the drunkest of all.. a person who drinks a large brownish European moth a container for animals to drink from ..he/she is a non-drinker.. ..drinkable (beverage).. ..undrinkable (beverage).. ..to sing drunkenly..	PRES 3SG PROG PST PST PART  SG PL SG vN / GER  COMP ADJ SUPL ADJ SG SG SG hyphenated	drink (V-1) drinks (V-1) drinking (V-1) drank (V-1) drunk (V-1) drink (V-2) drunk (N) drinks (N) drink (N) drinking (N) drunk (ADJ) drunker (ADJ) drunkest (ADJ) drinker (N-1) drinker (N-2) drinker (N-3) non-drinker (N) drinkable (ADJ) undrinkable (ADJ) drunkenly (ADV)	drink (V-1)  (* drink (V-1) (* drunk (V-1) drink (V-2) drunk (N)  drink (N)  (Δ) drinking (N)  drunk (ADJ)  drinker (N-1) drinker (N-2) drinker (N-3) (??) non-drinker (N) drinkable (ADJ) undrinkable (ADJ) drunkenly (ADV)	drink (V)  drunk (N)  drink (N)  (Δ) drinking (N)  drunk (ADJ)  drinker (N)  (??) non-drinker (N) drinkable (ADJ) undrinkable (ADJ) drunkenly (ADV)	drink    drinker  (??) non-drinker drinkable undrinkable drunkenly	drink
(1) termed coined by the author, P from Plurality (2) allows a plurality of entries under same PoS (3) allows (*) irregular inflectional patterns to be separate items (4) distinguishes between PoS (Δ) Should verbal Nouns/Gerunds be considered as a sort of inflectional affix? (debate) (??) Should “hyphenated affixes” such as “non-” in non-drinker be considered as a valid prefix? (debate) (5) WF⑤ & F④ are more easily computer countable (no PoS) (6) for advanced learners, WF may be enough = to infer most forms	Max. allowed #headwords	20	11-15	8-10	5-6	1

Notable Lists	?	Japanese ESL textbooks' index, Also dictionaries	Lemma Corpuses Ex: COCA lemma list	New General Service List (NGSL)	General Service List (GSL)
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Ensued study <sup>(6)</sup>	← Immense/Slow yet Profound , Light/Quick yet Limited →				

# Do on-the-ground teaching practices & perspectives reflect these recent recommendations in the literature?

This mixed-approach study surveyed **30 ESL/EFL teachers in Japan** and collected both quantitative and qualitative data through an online questionnaire.

The questionnaire surveyed their vocabulary teaching experience and views regarding five categories of WCUs:

- (1) All Forms & Meanings
- (2) Plemma
- (3) Lemma
- (4) Flemma
- (5) Word Family

Example and/or Definition (Context) with notes		① All Forms & Meanings	② Plemma <sup>(1)</sup> "Plurality" <sup>(2)(3)</sup>	③ Lemma "Pure" <sup>(4)</sup> Lemma	④ Flemma "Unpure" Lemma	⑤ Word Family (all related forms)
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Max. allowed #headwords		20	11-15	8-10	5-6	1

<sup>(1)</sup> termed coined by the author, P from Plurality  
<sup>(2)</sup> allows a plurality of entries under same PoS  
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**RQ1:**

**On a 5-point Likert satisfaction scale, how do teachers in Japan rate the various word counting units they have utilized in their teaching?**

# What word counting units have they utilized when teaching vocabulary?

**Table 16.** Participant Word Counting Unit Teaching Experience (n=30)

	(1) AFM	(2) Plemma	(3) Lemma	(4) Flemma	(5) Word Family
Yes	2 (6.7%)	6 (20%)	6 (20%)	5 (16.7%)	11 (36.7%)
No	27 (90%)	23 (76.7%)	23 (76.7%)	24 (80%)	17 (56.7%)
Other	1 (3.3%)	1 (3.3%)	1 (3.3%)	1 (3.3%)	2 (6.7%)

Note. AFM = All Forms and Meanings or all word tokens

# Word Counting Unit Satisfaction (per WCU type & Overall Rank)

“As long as contextual examples are provided, they seem to help students remember the vocabulary. (P#16)”

**Table 17.** Participant Word Counting Unit Satisfaction and Overall Rank

WCU n= # of responses	1	2	3	4	5	Mean SD	Overall Rank
(1) AFM n=2	0	0	1 (50%)	1 (50%)	0	M=3.5 SD=0.71	3rd
(2) Plemma n=6	0	0	1 (16.7%)	4 (66.7%)	1 (16.7%)	M=4 SD=0.63	2nd
(3) Lemma n=7	0	0	0	5 (71.4%)	2 (28.5%)	M=4.29 SD=0.49	1st
(4) Flemma n=5	0	0	3 (60%)	2 (40%)	0	M=3.4 SD=0.55	4th
(5) Word Family n=9	0	4 (44.4%)	2 (22.2%)	2 (22.2%)	1 (11.1%)	M=3 SD=1.12	5th

Note. Rank established by the author with the available data. 5-point Likert scale, (1) = poor, (5) = excellent (satisfaction); AFM = All Forms and Meanings or all word tokens; SD= Standard Deviation

**Table 18.** Participants' Perceived Average Student Proficiency Level (n=30)

Level Category	TOEIC L&R score	CEFR level	CEFR description	# of responses
(1)	120-220	A1	Basic-Breakthrough	4
(2)	225-385	A2-1	Basic-Waystage user	4
(3)	385-545	A2-2	Waystage user	10
(4)	550-780	B1	Independent-Threshold user	5
(5)	785-940	B2	Independent-Vantage user	0
(6)	945-990	C1	Proficient user	0
Other / No response				7

**RQ2:**

**What are teachers' opinions of the various types of word counting units in terms of their appropriateness for students in Japan?**

**Table 19.** Perceived Word Counting Unit Appropriateness for Teaching One's Students

	(1)	(2)	(3)	(4)	(5)	Mean SD
(1) AFM	9 (42.8%)	3 (14.3%)	3 (14.3%)	3 (14.3%)	3 (14.3%)	M=2.43 SD=1.54
(2) Plemma	5 (23.8%)	5 (23.8%)	2 (9.5%)	4 (19.05%)	5 (23.8%)	M=2.95 SD=1.56
(3) Lemma	4 (19.05%)	2 (9.5%)	8 (38.1%)	3 (14.3%)	4 (19.05%)	M=3.05 SD=1.36
(4) Flemma	7 (33.3%)	4 (19.05%)	4 (19.05%)	4 (19.05%)	2 (9.5%)	M=2.52 SD=1.40
(5) Word Family	10 (47.6%)	2 (9.5%)	0 (0%)	4 (19.05%)	5 (23.8%)	M=2.62 SD=1.77

Note. 5-point Likert scale, (1) = poor, (5) = excellent (perceived appropriateness); n=21



**Table 20.** Participant Future Aspiration to Utilize the following Word Counting Units

Response	(1) AFM	(2) Plemma	(3) Lemma	(4) Flemma	(5) WF
Yes	17 (56.7%)	19 (63.3%)	18 (60%)	14 (46.7%)	15 (50%)
No	10 (33.3%)	6 (20%)	9 (30%)	14 (46.7%)	7 (23.3%)
Other	3 (10%)	5 (16.7%)	3 (10%)	2 (6.7%)	8 (26.7%)

Note. AFM = All Forms and Meanings or all word tokens; n=30

“Less useful entries (such as the moth [drinker] and the inflected adjectives) can be omitted while more useful ones (irregular verb forms) [could be] included. (P#20)”.

**RQ3:**

**What are the teachers' perspectives about including additional word forms (e.g., gerunds and irregular verb patterns) as additional vocabulary/study items?**

**Table 21.** Participant Opinion about Including some Words Forms as Additional Items

	Additional item	Not separate	Other / no opinion
(1) Should verbal nouns/gerunds (Ex: I (dis)like drinking) be considered as a kind of inflectional affix or as an additional/separate study item (under plemma and lemma)?	10	14	6
(2) Should irregular patterns of verb inflections (e.g. drink → drank, drunk) be considered as a kind of inflectional affix or as an additional/separate study item?	5	16	9
(3) Should hyphenated prefixes (e.g. "non-" in non-drinker) be considered as a regular "derivational prefix/affix" (separate item) or not regular (not a separate item)?	4	16	10

Note. n=30

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Castledown

## Teaching Practices and Perspectives Regarding Word Counting Units

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### Abstract

The selection of an appropriate word counting unit (WCU) for the purpose of second/foreign language vocabulary acquisition (SLVA) in the last decade has become a very important and relevant topic in academic circles. However, few studies address on-the-ground teaching practices and perspectives. This mixed-approach study, conducted through an online questionnaire, collected both quantitative and qualitative data from 30 ESL/EFL teachers in Japan. The questionnaire surveyed their vocabulary teaching experience and views regarding five categories of WCUs: all word tokens (i.e., All Forms and Meanings (AFM)), plemma, lemma, flemma, and Word Family (WF). The online survey revealed that most participants (i.e., those who were not aware of SLVA research and recent teaching practices) had limited experience and knowledge regarding WCUs and their impact. Another important finding is that although the WCU category participants were most experienced with is the WF (i.e., root/basic word lists), the WCU they have the highest pedagogical regard for is the lemma which considers parts of speech (POS) in vocabulary instruction and learning, followed closely by the plemma which additionally considers the various meanings words can take on, and also irregular inflectional patterns (e.g., irregular verb past tenses and past participles), and to a lesser extent the flemma which does not consider POS nor the various meanings and irregular inflectional patterns of words in vocabulary instruction.

**Keywords:** Word counting unit, word family, flemma, lemma, plemma, ESL/EFL in Japan

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**Data Availability Statement:** All relevant data are within this paper.

# Q & A time, contact Information, presentation slides & more



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