Pronunciation of Regular Past Tense Verb Endings: Knowledge and Application

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Abstract

The aim of this study was to investigate the knowledge and application of regular past tense ed verb endings, namely the correct pronunciation capabilities Japanese university students have of this inflectional morpheme. Students attending a Japanese university, studying English as a Foreign Language (EFL), were invited to participate in the study. After signing consent forms, students orally recorded their individual readings of 30 short sentences in a CALL (computer assisted language learning) classroom. Subsequently, the same past tense verbs were sorted by writing them into three phonetic columns. The sample included 41 students. Self-reported English language proficiency ranges from Test of English for International Communication (TOEIC) scores were between 415-665, the average score was 511. The longest stay in an English-speaking country reported was one year. In total, across all ability groups, the students were able to pronounce the regular past tense verb endings correctly more often when reading them aloud than they could sort the same verbs correctly by writing them into the three labelled columns. The correlation coefficient between the total score for the correct pronunciation and the total score for the correct written sorting under phonetic symbols for the word have values of less than 5%. The correlation coefficients were: /d/ 0.3425, /t/ 0.3371, and /Id/ 0.2210. There was no link between being able to understand the correct pronunciation of each word (phonetic symbols) and being able to pronounce it correctly. That is to say, there was no connection between the two variables. Japanese university students have pronunciation challenges, including a lack of tools for -ed morpheme endings. The students had the ability to pronounce the inflectional morphemes correctly more often when reading a short five-word sentence aloud than they had the knowledge of the rule of how to form the pronunciation of the ed endings. Future research should focus on innovative ways to engage language students in activities to apply regular tense ed verb endings. A short but effective way to teach the phonetic rules is also recommended.

Keywords: Ed regular past-tense verb endings,
inflectional morpheme, pronunciation, phonetics,
Japanese university, EFL teaching

Background

At first glance, the regular past tense verb endings look simple to grasp. As spelling goes it is a case of adding d, ed, an extra consonant and ed, or a 'y' inplace of an 'i' and ed, to the root verb. The same past tense verb can then be used across the board for all subjects, unlike the present tense where all verbs are altered to suit the subject. Upon closer examination, or more familiarity with the past tense, it becomes clear that the final ed sounds are divided into three groups, /d/, /t/, or /Id/, according to their pronunciation. The grammatical term for this ed ending is an inflectional morpheme. Referring to Amazingly Grammar in Context (online), an inflection is a change that signals the grammatical function of nouns, verbs, adjectives, adverbs, and pronouns (e.g., noun plurals, verb tenses). In other words, inflectional morphemes are used to create a variant form of a word in order to signal grammatical information without changing the meaning of a word. Inflectional suffixes have grammatical meaning only and cannot precede a derivational suffix[1].

'The list of regular verbs is open-ended. There are thousands, perhaps tens of thousands, of regular verbs in English... and new ones are being added to the language all the time,' according to Pinker (1999). However, it is a closed list of only about 150-180 irregular verbs in modern English, Pinker. That means that irregular verbs will not be increasing and are usually learnt and memorized rather than being used by applying a rule. The word-and-rule theory for regular and irregular verbs is an ongoing statement which has inspired two alternative theories whereby intensive research, debate, and theory have solved and illuminated such processes as the ways that children learn to talk, and the way language is processed in the brain, Pinker. It is said that the ed regular verb past tense endings are applied to all verbs by default, Pinker, unless the rule is blocked by memory.

It is quite common for English language textbooks (from low to high levels) to include a section for the practice of sorting ed endings, into three columns depending on the pronunciation of the suffix- /d/, /t/, or /Id/. Students usually listen to the sounds and categorize the regular past tense forms of the verbs. Doing this task does not seem to excite the students

[1] A derivational suffix usually applies to words of one syntactic category and changes them into words of another syntactic category (National Library of Medicine).

very much. It is not clear whether it is confusing, difficult, tedious or overdone. It is unclear how long students have already spent on such tasks and whether it is good usage of classroom time or not to repeat them. These exercises in the textbooks seem to be effective, but it is unclear how effective.

A written study conducted at an Indonesian university, Khinanti, Syafrizal, and Zahrida, (2020), concluded that the students needed more practice, "It can be concluded that the English Education Study Program students got low predicate in recognizing -ed ending words pronunciation ...." The researcher also mentions that /d/ is the most recognized sound and that /t/ does not score well with possible interference from the first language (L1).

At the conclusion of this university study in Arar, Saudi Arabia, Mohamedahmed (2021), observed that students held some common misconceptions about ed- morpheme endings, for instance, 'they think that every single regular past tense verb ending in 'ed' is pronounced as /d/. They cannot distinguish between /t/ and /d/ sounds at the end of regular verbs, they confuse 'd' with 'Id' sounds, and students are unaware that the decision of which allomorph to be pronounced depends entirely on the final sound that precedes the -ed morpheme'. In light of these findings, a number of recommendations were made, including for the learners of the English language to understand that there are three different -ed sounds, and for teachers of English to explain to students why there are different pronunciations of the -ed morpheme. The researcher stressed the importance of the learner practicing a lot. 'Practice will help them extend and broaden their knowledge of how to differentiate between voiced and voiceless sounds' he adds.

Here in Japan, listening to presentations on campus, it is at times noticeable that the students' pronunciation of the regular past tense verb endings is not always accurate. Especially as the pronunciation of these suffixes is used from early on, as soon as the past tense is introduced in English to the Second Language learner, any flaws should be investigated in the usage of these inflectional morphemes. Generally, Japan has a reputation for studying knowledge and being well-educated in the English language, but when it comes to application, production of work on paper seems preferable to oral output. This reputation may still be true, so comparing the knowledge of the three different pronunciations of past tense verb ed endings with an assessment of the students' spoken

competence seemed a fitting place to start investigating ability.

Explaining the meaning of linguistic knowledge, Rod Ellis 2005, says that generally speaking there are two schools of thought. Ellis refers to Chomsky, 1976. Chomsky supports the view that linguistic competence consists of a biological capacity for acquiring languages, commonly referred to as Universal Grammar (UG). Ellis adds that this view is largely restricted to grammar and is mentalist in orientation. Cognitive psychologists Rumelhart and McClelland (1985), do not view language learning as cognitively different from other forms of learning, in that it draws on a general mental capacity for registering and storing phonological, lexical, and grammatical sequences in accordance with their distributional properties in input. Linguistic knowledge emerges gradually as learners acquire new sequences, restructure their representation of old sequences, and, over time, extract underlying patterns that resemble rules, cited in Ellis 2005. Rumelhart and McClelland (1985) view their work on past-tense morphology where rules are not required to be 'figured out' by a child as a step toward a revised understanding of language.

Ellis, 2005, goes on to explain that Karmiloff-Smith (1979) distinguished two kinds of data for the study of child language development: epilinguistic[2] data and metalinguistic[3] data. Both involve awareness but of different kinds. Epilinguistic behaviour arises when a child can demonstrate intuitive awareness of implicit grammatical rules. Karmiloff-Smith suggested that this type of behaviour is evident when the child can recognize instantly that a sentence is ungrammatical. On the other hand, metalinguistic behaviour is evident when the child has conscious awareness of why a sentence is ungrammatical and can demonstrate this understanding with an explanation for the ungrammaticality. Developmental psycholinguists, such as Karmiloff-Smith, suggest that children first display epilinguistic behaviour and only later (5 years old or later) manifest metalinguistic behaviour. Thus, as children develop, their implicit knowledge becomes increasingly analysed, which allows for its explicit representation. Bialystok (1991) suggested that L2 acquisition is a similar process and that teaching learners explicit rules would only prove effective if the learners are ready to incorporate them into their "emerging

[2] Epilinguistic activity: defined as 'unconscious metalinguistic activity' by the French linguist Antoine Culioli in 1968, p.108 (Gombert, 1992). In French, Culioli (1968).

[3] Metalinguistics: a branch of linguistics that deals with the relation between language and other cultural factors in a society (Merriam-Webster).

representational structure" (p. 71), cited in Ellis, 2005.

The aim of the study was to compare the knowledge of the regular past tense ed verb ending pronunciation (on paper) with the application of the regular past tense ed verb ending pronunciation (read aloud) of Japanese university students in distinguishing between the three different ed ending sounds of regular past tense verbs. The dependent variable is the number of correct student responses to the tasks. It is predicted that the students will perform better on the written task than on the reading aloud task. The null hypothesis, Ho is: There will be no difference between the number of correct responses in the two conditions, pronunciation of reading text aloud and sorting written words on paper. The alternative hypothesis, Ha is: There will be a difference between the number of correct responses in the two conditions, pronunciation of reading text aloud and sorting written words on paper.

Method

A prospective cohort study was conducted. The data was collected in December, 2022 and January, 2023 from EFL students at a private women's university situated in Fukuoka, Japan. Consent forms were distributed and those students who signed them and agreed to participate in the research study answered three questions; one about English language proficiency, one about the length of time spent in an English-speaking country, and one asking for the age of the student (Appendix A), before being relocated to a Computer-Assisted Language Learning (CALL) classroom. Each student had a station with a desktop computer, and a headset with a microphone attached. The students were asked to log in. Students were handed an A4-size copy of a list of 30 short, five-word, sentences. (Appendix B). CaLabo EX software was used to enable the students to record themselves reading the sentences aloud in order from one to thirty. This was a very helpful piece of technology. Spoken data from a group of students can be collected and recorded simultaneously. It meant that a batch of data could be stored and assessed at a later date. Also, students did not need to be allocated private slots for interviews, so there was no waiting around. The private headsets and microphones facilitated the individual to focus on the task. It must be noted that students wore masks throughout the study. After recording was completed, students submitted their recordings to the teacher through an

application in the CaLabo EX software. Next, another A4-size print out was distributed to all students. They were given instructions orally to write the regular past tense verbs into the correct column according to the sound of the ed ending of the verb, /d/, /t/, or /Id/. At the bottom of this sheet was a short questionnaire asking students to rate the importance of pronunciation in English on a scale of 1 (very important) to 5 (not important at all), and there was a space for any comments to be written freely (Appendix C). Once completed, the papers were handed in. The thirty root verbs used in both the reading aloud and written exercises were the same. However, they were not presented in the same order. The verbs were selected from beginner to intermediate textbooks to represent the proficiency range of the target population.

In this study, only data from Japanese female university students about to complete their first year of study was analysed. However, responses from students that were non-Japanese or above first grade may be useful in future studies. The participants were assigned to a class named A-E for the purpose of this study. This reflected the students' proficiency, with A being the highest and E the lowest. In order to determine the knowledge and application of the morpheme inflection ed of regular past tense verbs of Japanese first-year students, there were two conditions, 30 five-word sentences to be read aloud, and 30 regular past tense verbs to be categorised into three columns /d/, /t/, and /Id/. All data analysed is from participants tested in both conditions.

Results

In total, the responses of 41 female Japanese first-year university students met the inclusion criteria. Firstly, fifteen of the students' self-reported English language proficiency scores were Test of English for International Communications (TOEIC) 415-665 with an average score of 511, and Test in Practical English Proficiency *Jitsuyo Eigo Gino Kentei* (EIKEN) level pre-2 (two students), and level 2 (two students). The answer to the proficiency question was left blank, or included a note of forgotten, unknown or no results to report, by 22 students. In answer to the second question, the longest length of stay in an English-speaking country by a participant was one year. One participant had a stay of one month, and another participant had a stay of three weeks. Two students each had a stay of two weeks, one participant had a stay of one week, and a

participant had a stay of five days. Thirty-four students wrote that they had not stayed in an English-speaking country, or left the answer blank. The third question about age confirmed that the majority, 29 (70%) of the students were 19 years old. There were 11 (26%) eighteen-year-olds. The age of one participant was not documented, but must have been between 18 and 19 years old.

Regarding the recorded sentences that were read aloud, each student's past tense verb ending pronunciation was documented and was marked correct or not. The printed verbs on paper were also recorded as to which of the three phonetic symbols were chosen and marked correct or not. Both answers were first tabulated and compared for each student for each verb in both conditions by level, and then for the sample as a whole (table 1).

Table 1: *To Show the Comparison of the Number of Correct Past Tense Verb Endings for Each Student for Each Verb in Both Conditions, Reading Aloud and Choosing Phonetic Symbols*

Spoken	/d/	/t/	/Id/	Total	Written	/d/	/t/	/Id/	Total
1	10	10	10	30	1	7	7	0	14
2	10	10	10	30	2	10	0	0	10
3	10	7	10	27	3	10	1	0	11
4	8	8	10	26	4	8	6	7	21
5	9	9	10	28	5	6	3	1	10
6	9	6	10	25	6	9	7	8	24
7	10	10	7	27	7	8	3	2	13
8	10	10	10	30	8	7	5	5	17
9	10	10	10	30	9	7	7	7	21
10	8	9	10	27	10	7	7	10	24
11	10	9	9	28	11	10	3	10	23
12	10	10	8	28	12	6	3	0	9
13	10	7	10	27	13	7	8	0	15
14	9	9	9	27	14	8	2	7	17
15	10	9	10	29	15	9	9	10	28
16	10	10	10	30	16	4	6	0	10
17	8	8	10	26	17	9	9	9	27
18	10	10	10	30	18	7	5	0	12
19	10	9	10	29	19	9	5	2	16

20	10	10	10	30	20	10	4	10	24
21	10	10	10	30	21	9	8	9	26
22	9	10	7	26	22	7	0	6	13
23	10	9	10	29	23	8	10	9	27
24	7	2	5	14	24	4	0	0	4
25	8	6	8	22	25	5	0	4	9
26	10	8	10	28	26	2	0	1	3
27	10	7	9	26	27	9	1	0	10
28	8	8	10	26	28	7	7	2	16
29	8	3	1	12	29	4	1	0	5
30	10	8	10	28	30	9	1	2	12
31	8	4	2	14	31	6	3	3	12
32	10	9	9	28	32	6	3	7	16
33	10	6	7	23	33	7	1	2	10
34	9	8	9	26	34	5	6	4	15
35	8	4	0	12	35	3	1	3	7
36	9	9	10	28	36	3	4	2	9
37	8	2	4	14	37	7	3	4	14
38	9	7	10	26	38	6	5	5	16
39	10	6	10	26	39	10	5	4	19
40	10	8	8	26	40	6	3	3	12
41	10	8	9	27	41	4	4	4	12
Total	382	322	351	1055		285	166	162	613
%	93.20 %	78.50 %	85.60 %	85.80 %		69.50 %	40.50 %	39.50 %	49.80 %
standard deviation σ	0.895	2.215	2.548	5.027		2.118	2.819	3.428	6.473
variance $\sigma 2$	0.802	4.905	6.49	25.269		4.485	7.949	11.754	41.9

Analysis

Method of Analysis

1. A table of the relationship between the correct score for the pronunciation of a word and the correct score for the choice of the phonetic symbols /d/, /t/, and /Id/ for the word was created, (table 2).

Table 2 : *To Show the Percentage of Correct Answers in Both Conditions, Spoken/Read Aloud and Written/Sorted*

Spoken/ Read Aloud	/d/	/t/	/Id/	Total	Written/ Sorted	/d/	/t/	/Id/	Total
% (Percentage of Correct Answers)	93.2	78.5	85.6	85.8	% (Percentage of Correct Answers)	69.5	40.5	39.5	49.8

The p-values in the two conditions, the correct score for the pronunciation of each word and the correct score for the choice of phonetic symbols /d/, /t/, and /Id/ for the word, both had values that were less than 5%, see table 3.

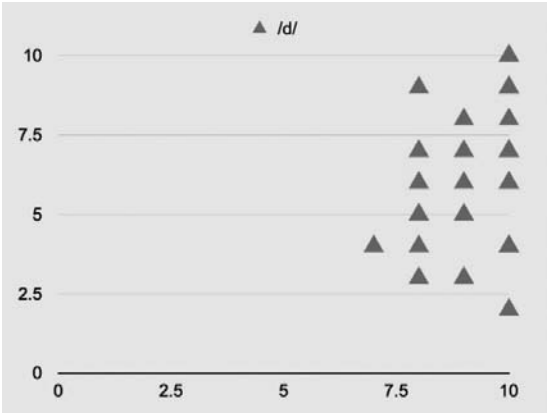
Table 3: *The P-values*

	/d/	/t/	/Id/	Total
P-value (Spoken/Written)	<0.001	<0.001	<0.001	<0.001
Relationship coefficient (Spoken/Written)	0.3425	0.3371	0.2210	0.4134

2. Graphs were plotted for each ed phonetic symbol, /d/, /t/, and /Id/, to show the relationship between the number of correct answers in each condition, written verbs sorted into 3 columns and the pronunciation of spoken/read aloud verbs in short sentences, (graphs 1, 2, and 3).

Graph 1: *To Show the Relationship between the Number of Correct Answers in Both the Reading Aloud and Choosing the Phonetic Symbol for the Pronunciation of /d/*

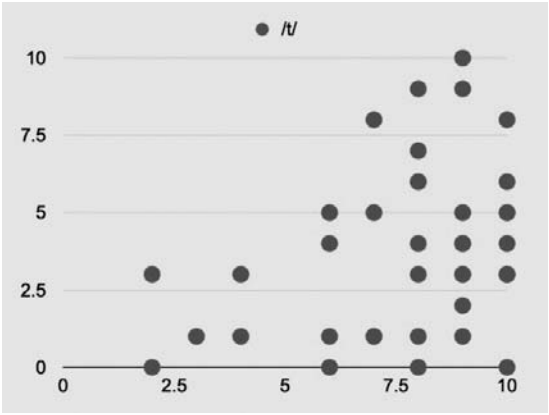
Y-axis:
Written in Phonetic
Symbol Columns
Correctly



X-axis: Verbs Spoken/Read Aloud Correctly

Graph 2: *To Show the Relationship between the Number of Correct Answers in Both the Reading Aloud and Choosing the Phonetic Symbol for the Pronunciation of /t/*

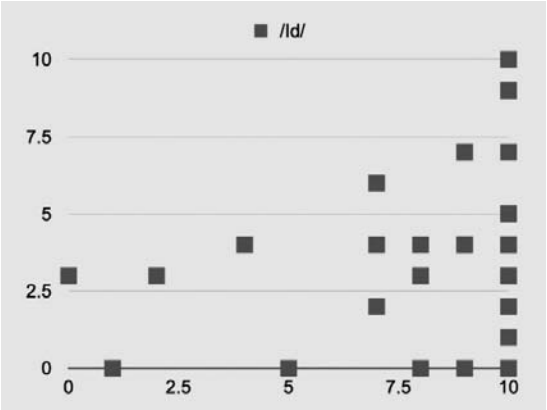
Y-axis:
Written in Phonetic
Symbol Columns
Correctly



X-axis: Verbs Spoken/Read Aloud Correctly

Graph 3: *To Show the Relationship between the Number of Correct Answers in Both the Reading Aloud and Choosing the Phonetic Symbol for the Pronunciation of /Id/*

Y-axis:
Written in Phonetic
Symbol Columns
Correctly



X-axis: Verbs Spoken/Read Aloud Correctly

3. The correlation coefficient between the two correct scores from the relationship table, Pearson correlation coefficient.

$$Correl(X,Y) = \frac{\sum (x-\bar{x})(y-\bar{y})}{\sqrt{\sum (x-\bar{x})^2 \sum (y-\bar{y})^2}}$$

This value represents the relationship between two values in the range 0 to 1. Zero is considered to have no relationship and one is considered to have a relationship.

Analysing the relationship between phonetic symbols /d/, /t/, and /Id/, the correlation coefficient between the correct score for the pronunciation of a word and the correct score for the choice of the correct phonetic symbol of the word ending:
/d/ 0.3425
/t/ 0.3371
/Id/ 0.2210

Consideration

1. The p-value of the correct score for the pronunciation of each word and the p-value of the correct score for the choice of phonetic symbols for the word both have values less than 5%.

2. The correlation coefficient between the correct score for the pronunciation of each word and the correct score for the choice of phonetic symbols for the word both have values less than 5%.
The correlation coefficient is:
/d/ 0.3425
/t/ 0.3371
/Id/ 0.2210

3. Graphs, Graph 1 Pronunciation /d/, Graph 2 Pronunciation /t/, and Graph 3 Pronunciation /Id/, were created to compare both conditions, written sorted phonetic symbols and spoken/read aloud regular past tense verbs.

As can be seen from the three points given above, there is no link between being able to understand the correct pronunciation of each word (phonetic symbols) and being able to pronounce it correctly. That is to say, there is no connection between being able to understand the correct pronunciation of each word and being able to pronounce the word correctly.
The spelling of regular past tense English verbs is almost always +ed, which may seem unnatural at first glance. The clearly higher percentage of correct answers for the /d/ diacritic indicates that most Japanese students consider the pronunciation of verbs in the past tense to be /d/.
The correct pronunciation of the past tense in 'watch' is +/t/, even if the Japanese students intend to pronounce it as /d/, the Japanese students consciously and mistakenly pronounce it as +/t/. However, it is thought that there are many cases where Japanese students consciously pronounce the past tense of watch as +/d/, but in fact only pronounce it as +/t/.

Checking for Patterns of Correctness with Particular Verbs (tables 4, 5 and 6)

The 30 Regular Past Tense Verbs Used in The Two Conditions

1. listened	11. baked	21. stayed

2. cooked	12. worked	22. inherited
3. invited	13. invented	23. married
4. started	14. talked	24. decided
5. watched	15. opened	25. announced
6. called	16. visited	26. lived
7. played	17. moved	27. reacted
8. washed	18. walked	28. contacted
9. landed	19. wanted	29. introduced
10. cleaned	20. reached	30. received

Table 4：*Comparison of correct words in each spoken and written condition by class*

A Class Words	Correctly Spoken	Correctly Written	Difference	B Class Words	Correctly Spoken	Correctly Written	Difference
1 /d/	11	8	-3	1 /d/	8	8	0
2 /t/	11	6	-5	2 /t/	7	6	-1
3 /Id/	11	6	-5	3 /Id/	8	4	-4
4 /Id/	11	6	-5	4 /Id/	8	2	-6
5 /t/	9	4	-5	5 /t/	5	7	2
6 /d/	11	8	-3	6 /d/	8	4	-4
7 /d/	10	8	-2	7 /d/	8	6	-2
8 /t/	10	1	-9	8 /t/	8	5	-3
9 /Id/	11	6	-5	9 /Id/	8	3	-5
10 /d/	9	10	1	10 /d/	7	7	0
11 /t/	11	4	-7	11 /t/	8	4	-4
12 /t/	11	7	-4	12 /t/	8	6	-2
13 /Id/	11	6	-5	13 /Id/	8	2	-6
14 /t/	11	9	-2	14 /t/	8	6	-2
15 /d/	10	9	-1	15 /d/	7	7	0
16 /Id/	11	6	-5	16 /Id/	8	3	-5
17 /d/	10	8	-2	17 /d/	8	4	-4
18 /t/	9	9	0	18 /t/	8	4	-4
19 /Id/	11	5	-6	19 /Id/	8	2	-6
20 /t/	9	2	-7	20 /t/	7	4	-3
21 /d/	11	8	-3	21 /d/	7	5	-2
22 /Id/	11	6	-5	22 /Id/	8	3	-5
23 /d/	10	9	-1	23 /d/	8	6	-2
24 /Id/	10	4	-6	24 /Id/	8	4	-4
25 /t/	11	3	-8	25 /t/	8	3	-5
26 /d/	11	11	0	26 /d/	8	5	-3
27 /Id/	9	2	-7	27 /Id/	6	3	-3
28 /Id/	10	3	-7	28 /Id/	7	2	-5
29 /t/	6	4	-2	29 /t/	5	2	-3
30 /d/	11	10	-1	30 /d/	8	7	-1

The top two differentiating words for Class A (n=11) were 'washed and announced'. Perfect scores were attained in both conditions for 'lived'.
The top two differentiating words for Class B (n=8) were 'started and wanted'. Perfect scores were achieved for 'listened, cleaned and opened'.

Table 5：*Comparison of correct words in each spoken and written condition by class*

C Class Words	Correctly Spoken	Correctly Written	Difference	D Class Words	Correctly Spoken	Correctly Written	Difference
1 /d/	4	4	0	1 /d/	5	6	1
2 /t/	4	3	-1	2 /t/	3	2	-1
3 /Id/	3	4	1	3 /Id/	5	0	-5
4 /Id/	4	4	0	4 /Id/	5	2	-3
5 /t/	4	2	-2	5 /t/	2	1	-1
6 /d/	4	4	0	6 /d/	6	4	-2
7 /d/	4	2	-2	7 /d/	5	3	-2
8 /t/	4	2	-2	8 /t/	3	0	-3
9 /Id/	4	4	0	9 /Id/	5	1	-4
10 /d/	4	4	0	10 /d/	7	4	-3
11 /t/	4	2	-2	11 /t/	6	1	-5
12 /t/	4	2	-2	12 /t/	4	1	-3
13 /Id/	4	2	-2	13 /Id/	6	0	-6
14 /t/	4	3	-1	14 /t/	5	1	-4
15 /d/	4	4	0	15 /d/	7	4	-3
16 /Id/	4	4	0	16 /Id/	6	0	-6
17 /d/	4	3	-1	17 /d/	5	3	-2
18 /t/	4	3	-1	18 /t/	5	1	-4
19 /Id/	4	3	-1	19 /Id/	6	0	-6
20 /t/	3	1	-2	20 /t/	5	1	-4
21 /d/	3	3	0	21 /d/	7	3	-4
22 /Id/	4	2	-2	22 /Id/	4	1	-3
23 /d/	4	2	-2	23 /d/	7	4	-3
24 /Id/	4	4	0	24 /Id/	7	2	-5
25 /t/	4	2	-2	25 /t/	3	1	-2
26 /d/	4	4	0	26 /d/	7	6	-1
27 /Id/	3	3	0	27 /Id/	5	1	-4
28 /Id/	3	4	1	28 /Id/	4	2	-2
29 /t/	4	2	-2	29 /t/	6	1	-5
30 /d/	4	4	0	30 /d/	5	3	-2

Class C (n=4) made two mistakes each on 11 words. For Class C, 'watched, played, washed, baked, worked, invented, reached, inherited, married, announced, and introduced' had the most differences. Perfect scores were

reached for 12 words, 'listened, started, called, landed, cleaned, opened, visited, stayed, decided, lived, reacted and received'.
The top three differentiating words for Class D (n=7) were 'invented, visited, and wanted'. No perfect scores were achieved for one word.

Table 6 : *Comparison of correct words in each spoken and written condition by class*

E Class Words	Correctly Spoken	Correctly Written	Difference
1 /d/	9	8	-1
2 /t/	8	3	-5
3 /Id/	7	4	-3
4 /Id/	9	4	-5
5 /t/	6	2	-4
6 /d/	11	9	-2
7 /d/	11	8	-3
8 /t/	6	4	-2
9 /Id/	9	4	-5
10 /d/	11	6	-5
11 /t/	7	7	0
12 /t/	9	4	-5
13 /Id/	8	2	-6
14 /t/	10	6	-4
15 /d/	11	8	-3
16 /Id/	7	4	-3
17 /d/	9	6	-3
18 /t/	10	2	-8
19 /Id/	9	2	-7
20 /t/	7	3	-4
21 /d/	10	2	-8
22 /Id/	8	4	-4
23 /d/	10	4	-6
24 /Id/	8	6	-2
25 /t/	5	4	-1
26 /d/	9	9	0
27 /Id/	5	5	0
28 /Id/	8	6	-2
29 /t/	3	3	0
30 /d/	10	3	-7

For Class E (n=11) the words 'invented, walked, wanted, stayed, married, and received' had the most differences. Perfect scores were not achieved for any one word, but 'lived' had nine correct answers in both conditions.

Discussion

Knowledge of the regular past tense ed verb ending pronunciation (written on paper) was meant to be shown by the ability of sorting the regular past tense verbs into the correct columns. As the Japanese are generally said to be knowledgeable but not typically good speakers of English, it was hypothesized that the Japanese university students would perform better in the written sorting task than the reading aloud task. The question of which activity would provide more correct inflected morphemes was answered with results contrary to those expected. The data analysed showed that the null hypothesis was to be rejected, and that there was a weak correlation between being able to read aloud the correct pronunciation of /d/, /t/, or /Id/ for the ed ending of a regular verb, and knowing the correct phonetic symbol /d/, /t/, or /Id/ for the ed ending of a regular verb. It seems that reading the single verbs and trying to distinguish between the sounds was challenging. The students did not all know the rule of checking the pronunciation of the preceding sound before the ed ending. If they had, even if a word on the list had been new to them, by following the rule they would have been able to arrive at the correct pronunciation and choose the correct column to match the sound with the corresponding phonetic symbol.

Penke, 2012, explains that, "According to the symbolic view of cognitive processing, inflected word forms are structurally composed out of component morphemes by application of a mental operation that combines morphemes displaying the right abstract features such as [+V] or [+PAST]. Hence, an English past-tense form such as inflected is composed by an operation combining the verb stem inflect [V] with a past-tense marker-ed [PAST]. Antisymbolic approaches assume instead that inflected forms are structurally non-compositional and are learned and stored as whole-word forms in an associative memory network." This may partly contribute to an explanation of the fact that participants in the study could correctly pronounce the ed sounds of the regular past tense verbs in the short five-word sentences although they were not aware of the correct rule. Also in the study, the instructions to read the 30 short five-word sentences were given first. Students wore headsets with a microphone which enabled them to concentrate individually. It seems as though students focused on the full sentence which produced more fluent pronunciation which enabled a natural progression from one sound to the

next. Although the advantages of interaction with each other, not only with a computer are invaluable, and this has been confirmed after recent stints in isolated lockdown situations due to Covid 19, it seems as though reading aloud with the headset on has brought out the best in the students' pronunciation. It is said that as people generally speak to be understood, and do not usually want to stand out in Japan, they will even put on a Japanese accent when speaking English in class. It seems that some of the common verbs that the students are familiar with were pronounced well because they were recognized as a word and the context that it is used in would be clear, so that the student could be confident of the pronunciation of that word. Words that are repeated a lot in class, or are used a lot for talking about everyday activities, or are relevant to students' lives would probably be known.

Some of the verbs seemed particularly difficult for the majority: "baked", because the students had trouble with the root pronunciation. Another difficulty was reading "reached" and "reacted". It was easy to hear students guessing the words, 'delicious was read as decorated'. Another factor, as mentioned in the introduction, is that the students' first language can hinder the correct pronunciation. Endings *do*, *to*, and *Ido* were heard. More noticeably though, sometimes the natural progression from one sound to another was broken, or confused by a Japanese syllable. The results of this study have shown that although students may not understand how to do an exercise, it does not mean that they cannot use the language being studied. Some students claimed that they had not had the rule clearly explained to them. A specially tailored way to teach the ed /d/, /t/, and /Id/ morphed sounds to native speakers of Japanese would be beneficial as it seems that they are being thought of in a different way, for example, 'received,' so we know it is 'receive-d', an unvoiced sound continuing on to the /d/ sound. In Japanese, if you think about, 'receivu-do,' and the sound transference from the 'vu' to /d/ comes closer to a /Id/ sound. So, thinking about isolated words may prove complicated. Learning the sounds of the regular past tense verb endings in context seems better.

The results from this study have shown that EFL learners need clear rules to focus on for a short time, and a lot of opportunity to practice on the point that they are learning. A mixture of teaching and lots of practical exercises are required. Students need to focus and engage with the task in hand. Reinforcement and repetition seem necessary. Interest will need to be maintained. There seems to be a strong association with the spelling of

the word and its pronunciation that could confuse students. Allowing learning to take place naturally through applying knowledge practically could have positive results.

Conclusion

In this study it can be concluded that contrary to the alternative hypothesis, the Japanese first-year EFL students were able to pronounce the inflected morphemes correctly, quite comfortably, even. There was a reliance on /d/ pronunciation which matches the spelling ed, but most of the students were able to either consciously, or naturally, produce the correct sounds. The fact that the verbs that were read aloud were in context may have been helpful. The singular past tense verbs sorted and written into columns by choosing the correct ed phonetic symbol, /d/, /t/, or /Id/, had a much lower success rate. More reading aloud, watching video footage with sound, and getting involved in listening and talking more freely in English with fellow students would be valuable time spent in pursuit of fine-tuning English pronunciation. It is noticeable that there is a lack of time spent abroad by the study population. This does not seem to have affected the students negatively. They seem to be finding innovative ways to practice and improve their pronunciation. A clear guidance rule on how to manage the pronunciation of regular past tense verb endings for metalinguistic knowledge is desirable. However, as the correlation showed no relationship between the application and knowing, immersion, shadowing, mixing, talking, reading aloud, listening and other practical activities during study and free-time are all suggested for improving pronunciation. More research to determine how to effectively engage Japanese university students in activities to improve their pronunciation is desirable.

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Appendices
Appendix A: Consent Form, and Student Information

Consent Form

I, Claire Suenaga, would like to conduct an experiment to help with my language research. Your participation would be greatly appreciated. Please write your name in the gap below to show you agree.

I _____ consent to participating in a language experiment voluntarily. I can quit at any time. This does not affect my final grades.

Your data will be presented anonymously. Your name will not be shown.

Thank you

同意書

私、クレア・スエナガは、私の言語研究のために実験を行いたいと思っています。ご協力よろしくお願いいたします。同意することを示すために、上の空白にあなたの名前を書いてください。
その事により自主的に語学実験に参加することに同意します。あなたはいつでも途中でやめることができます。そしてこれはあなたの最終成績には影響しません。
あなたのデータは匿名で提示されます。あなたの名前は表示されません。

よろしくお願いします。

Q1. What is your English language proficiency (IELTS/TOEFL/TOEIC etc.) test score?
Q1. 英語力（IELTS / TOEFL / TOEIC など）のテストスコアは？
A1.

Q2. How long have you spent in an English speaking country?
Q2. 英語圏の国でどのくらい過ごしましたか？
A2. _____ Days 日々
_____ Weeks 週
_____ Months 月

_____ Years 年

Q3. How old are you?
Q3. 何歳ですか？
A3.

Appendix B: Script to be Recorded Orally
1. We listened online for hours.
2. I cooked for my friend.
3. They invited us to join.
4. It all started so quickly.
5. He watched it on T.V.
6. I called my good friend.
7. They played in the garden.
8. We washed the dishes together.
9. Humans landed on the moon.
10. They cleaned their new flat.
11. She baked a delicious cake.
12. We worked for seven hours.
13. Maybe the Romans invented ice−cream.
14. We talked for three hours.
15. He opened a new shop.
16. She visited her favourite aunt.
17. We moved away to France.
18. They walked with the dog.
19. I wanted a new hat.
20. She reached for the stars.
21. They stayed at home together.
22. He inherited lots of money.
23. They married at three thirty.
24. She decided to buy them.
25. They announced a price cut.
26. They lived out of town.
27. Everyone reacted to the news.
28. We contacted her by phone.
29. He introduced it to me.
30. She received lots of flowers.

Appendix C: Columns to Sort Verbs, Questionnaire and Comments

listened cooked invited started watched called
played washed landed cleaned baked worked
invented talked opened visited moved walked
wanted reached stayed inherited married decided
announced lived reacted contacted introduced received

/d/	/t/	/Id/

Questionnaire:

On a scale of 1–5 (1 very important, and 5 not important), how important is the correct pronunciation of the –ed ending of regular verbs in the past tense to you?
Please circle one number.

Very important Important A little important I don't know Not important

1.....2.....3.....4.....5

Comments:

Thank you