

The Rōmaji capability of university students - a preliminary study

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1 Introduction

Rōmaji is the fourth and final way of transcribing Japanese that school children in Japan learn. Despite the fact that it can be found everywhere in Japan such as in the naming of goods from cars to foodstuffs, the average Japanese speaker will hardly ever produce any written examples of romaji other than their own name or occasionally their address. However, rōmaji is almost universally used as the input method for Japanese word processing and its Roman alphabet cousin is taught in the English language classroom. In other words, although Japanese native speakers will themselves hardly ever produce any written rōmaji, whenever they sit in front of a computer they have to rely on it to input Japanese. Considering the proliferation of computers in the modern world, we would expect university students to be proficient in writing rōmaji. This paper sets out to investigate the capability of students in rōmaji and discuss the implications of the results.

It must be noted this paper will not however be drawn into the timeless debate on which of the recognised versions of rōmaji is should be taught in schools or used in general.

2 Method

261 students in different classes of different age groups were asked to write the following sentence first in Japanese and then transcribe it into rōmaji.

焼酎をしょっちゅう飲むけど、二日前新聞に宣伝された麦焼酎は飲みにくい。

The sentence, although somewhat stilted, was chosen because it includes words which can be written variously in the different recognised versions of rōmaji. For the purpose of this paper, we shall limit the recognised versions to Traditional Hepburn, Revised Hepburn, Modified Hepburn, Kunrei-shiki, Nippon-shiki and Waapuro. Since most Japanese speakers do not come into contact with JSL, it was considered that it need not be included.

The words that differ are as follows:

焼酎 (しょうちゅう), を, しょっちゅう, 二日 (ふつか), 新聞 (しんぶん) 宣伝 (せんでん), 麦焼酎 (むぎしょうちゅう), は

3 Results

The results will be given for each individual word, followed by the individual elements that differ in the different versions of rōmaji. The variants received for each word/element will be shown, as well as highlighting which the number of responses for recognised versions of rōmaji as well as those which can be used for inputting Japanese into the computer. Finally general analysis will be given.

To reduce complexity, diacritics are not distinguished, so both the macron eg \bar{o} and the circumflex eg \hat{o} are counted as the same, since both represent the presence of a long vowel. However usage of the diacritics will be addressed separately. Discrepancies can be seen in the totals of each word since not all students transcribed the whole sentence.

3.1 焼酎 (しょうちゅう)

i. Responses

Variant	Responses	%	Variant	Responses	%
1. shochu	35	13.94	27. syocyuu	1	0.40
2. shōchū	30	11.95	28. shocyu	1	0.40
3. syotyū	28	11.16	29. shouthuu	1	0.40
4. shouchu	18	7.17	30. syōtū	1	0.40
5. shouchuu	17	6.77	31. syoutyou	1	0.40
6. syoutyuu	15	5.98	32. shoutiyuu	1	0.40
7. shouchū	9	3.59	33. syouchū	1	0.40
8. syōtyū	9	3.59	34. syoucyuu	1	0.40
9. syochu	8	3.19	35. shōtyū	1	0.40
10. shōtyū	7	2.79	36. syo-chu	1	0.40
11. syouchuu	7	2.79	37. syōchu	1	0.40
12. syouchu	6	2.39	38. syōtyū	1	0.40
13. shoutyū	5	1.99	39. syoucyū	1	0.40
14. syōchū	5	1.99	40. shōutyū	1	0.40
15. syoutyū	4	1.59	41. syōchyū	1	0.40
16. syōcyū	3	1.20	42. syouchyū	1	0.40
17. shōchu	3	1.20	43. shyochu	1	0.40
18. syoutyū	3	1.20	44. shyotyū	1	0.40
19. shotyū	2	0.80	45. shyouthuu	1	0.40
20. shōcyū	2	0.80	46. shyōchū	1	0.40
21. shoutyuu	2	0.80	47. shyōtyū	1	0.40
22. shoutyū	2	0.80	48. shyo-tyu-	1	0.40
23. syoutyū	2	0.80	49. shyouchū	1	0.40
24. shotthu	1	0.40	50. shyouchuu	1	0.40
25. shochū	1	0.40	51. shyochyū	1	0.40
26. shotyū	1	0.40	52. shytyū	1	0.40
			Total	251	

Of 251 responses, 52 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
Traditional Hepburn	shōchū	30	11.95
Revised Hepburn	(shochu)	(35)	(13.94)
Modified Hepburn	shoouchuu	–	–
Kunrei-shiki	syōtyū	9	3.59
Nippon-shiki	(syotyū)	(28)	(11.16)
Waapuro	shouchuu	17	6.77
Total		119	47.41

Note: Results do not include variants, which have used a diacritic in just one half of the word.

Even including results that have not used diacritics, the success rate of students reproducing the word しょうちょう was low. No student used the Modified Hepburn version of *shoouchuu*.

iii. Variants that can be inputted

Variant	Responses	%	Variant	Responses	%
1. shōchū	30	11.95	9. syōchū	5	1.99
2. shouchuu	17	6.77	10. syoutyū	4	1.59
3. syoutyuu	15	5.98	11. syōcyū	3	1.20
4. shouchū	9	3.59	12. shōcyū	2	0.80
5. syōtyū	9	3.59	13. shoutyuu	2	0.80
6. shōtyū	7	2.79	14. syouchū	1	0.40
7. syouchuu	7	2.79	15. syoucyuu	1	0.40
8. shoutyū	5	1.99			
			Total	117	46.61

Here we can see that almost half of the students wrote a form that could be used to

input Japanese into a computer. However it must be noted that 12 of the 15 variants given are either a mixture of different recognised forms such as *syoutyuu*, which has the consonants of Kunrei-shiki/Nippon-shiki and the vowels of Waapuro, or rely on non-standard forms such as the *cy-* of *syōcyū* which can be used to input the sound into the computer.

3.2 を

i. Responses

	Variant	Responses	%
All Hepburn Kunrei-shiki	o	3	1.17
Nippon-shiki Waapuro	wo	252	98.82
Total		255	100

Here we see almost universal use of *wo*, despite the fact that both Hepburn and Kunrei-shiki are taught in schools. There may be two reasons for this. Firstly to differentiate を from お, or secondly because *wo* is the only form that can be used to input を into the computer.

3.3 しょっちゅう

i. Responses

Variant	Responses	%	Variant	Responses	%
1. shocchu	39	15.92	31. shoochuu	1	0.41
2. shocchū	23	9.39	32. shotchū	1	0.41
3. shottyū	21	8.57	33. shotcyū	1	0.41
4. shottyū	19	7.76	34. shotthū	1	0.41
5. shocchuu	18	7.35	35. shotthu	1	0.41
6. syottyūu	18	7.35	36. shotthuu	1	0.41

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7. shottyū	13	5.31	37. shottiyuu	1	0.41
8. syocchu	10	4.08	38. shottuchuu	1	0.41
9. shottyuu	9	3.67	39. shottuu	1	0.41
10. syottyū	7	2.86	40. shouttyu	1	0.41
11. shotchu	4	1.63	41. shoxtsu	1	0.41
12. syocchuu	4	1.63	42. shttyu	1	0.41
13. shochu	3	1.22	43. shyocchyu	1	0.41
14. shottū	3	1.22	44. shyochu	1	0.41
15. syocchū	3	1.22	45. shyottchuu	1	0.41
16. shoccyu	2	0.82	46. shyottyū	1	0.41
17. shottu	2	0.82	47. shyttyu	1	0.41
18. shotyu	2	0.82	48. ssyotyū	1	0.41
19. shyocchū	2	0.82	49. syōcchuu	1	0.41
20. shyottyuu	2	0.82	50. syocchyū	1	0.41
21. syoltutyuu	2	0.82	51. syocchyuu	1	0.41
22. syottu	2	0.82	52. syocyuu	1	0.41
23. schocchū	1	0.41	53. syotchu	1	0.41
24. shhotyuu	1	0.41	54. syotsucyu	1	0.41
25. shoccyū	1	0.41	55. syotthuu	1	0.41
26. shoccyuu	1	0.41	56. syottou	1	0.41
27. shochū	1	0.41	57. syottsū	1	0.41
28. shōchū	1	0.41	58. syottuu	1	0.41
29. shochuu	1	0.41	59. syotyū	1	0.41
30. shoochu	1	0.41			

Total 245

Of 245 responses, 59 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
Traditional Hepburn	shotchū	1	0.42
Revised Hepburn	(shotchu)	(4)	1.63
Modified Hepburn	shotchuu	–	–
Kunrei-shiki	syottyū	7	2.86
Nippon-shiki	syottyū	(21)	(8.57)
Waapuro	shocchuu	18	7.35
Total		51	20.82

iii. Variants that can be inputted

Variant	Responses	%	Variant	Responses	%
1. shocchū	23	9.39	7. syocchuu	4	1.63
2. shocchuu	18	7.35	8. syocchū	3	1.22
3. syottyū	18	7.35	9. syoltutyū	2	0.82
4. shottyū	13	5.31	10. shoccyū	1	0.41
5. shottyū	9	3.67	11. shoccyū	1	0.41
6. syottyū	7	2.86			
			Total	99	40.41

The word しょっちゅう provided the most difficulty for students probably due to the combination of two consonants as well as the sokuon. Of the 245 responses only 21% managed to produce a recognised version and only 40% managed a version that could be input into the computer. It is interesting to note here that 2 respondents gave syoltutyū. The -ltu- combination here is used to input the sokuon, つ, into the computer and does not represent the pronunciation at all. Once again we see use of the cy- combination which is also used only in computing.

3.4 二日 (ふつか)

i. Responses

Variant	Responses	%	Variant	Responses	%
1. futsuka	84	32.81	6. 2ka	1	0.39
2. futuka	52	20.31	7. hutzuka	1	0.39
3. hutsuka	56	21.88	8. huchuka	1	0.39
4. hutuka	55	21.48	9. 2tuka	1	0.39
5. huthuka	5	1.95			
Total				256	

Of 256 responses, 9 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
All Hepburn Waapuro	futsuka	84	32.81
Kunrei-shiki Nippon-shiki	hutuka	55	21.48
Total		139	54.30

iii. Variants that can be inputted

Variant	Responses	%
1. futsuka	84	32.81
2. futuka	52	20.31
3. hutsuka	56	21.88
4. hutuka	55	21.48
Total	247	96.48

Here the four versions that could be inputted are almost equally distributed. It is interesting to note that there is clear mixing of the Hepburn and Kunrei-shiki versions.

3.5 新聞 (しんぶん)

i. Responses

Variant	Responses	%	Variant	Responses	%
1. shinbun	174	71.02	7. sinbunn	5	2.04
2. sinbun	29	11.84	8. shinnbun	4	1.63
3. shinnbunn	13	5.31	9. schinbunn	1	0.41
4. sinnbunn	6	2.45	10. shibun	1	0.41
5. shimbun	5	2.04	11. shimbunn	1	0.41
6. shinbunn	5	2.04	12. sindun	1	0.41
Total				245	

Of 245 responses, 12 variations were recorded.

ii. Recognised responses

	Variant	No.	%
Traditional Hepburn	shimbun	5	2.04
Revised Hepburn Modified Hepburn	shinbun	174	71.02
Kunrei-shiki Nippon-shiki	sinbun	29	11.84
Waapuro	shinnbunn	13	5.31
Total		221	90.20

iii. Variants that can be inputted

Variant	Responses	%
1. shinbun	174	71.02
2. sinbun	29	11.84
3. shinnbunn	13	5.31
4. sinnbunn	6	2.45

5. shinbunn	5	2.04
6. sinbunn	5	2.04
Total	232	94.69

The combination of んぶ in Japanese is pronounced with an /m/. However only 2% of respondents used -mb-. This probably due to the fact that apart from the combinations of -mb-, -mp-, and -mm-, ん is always written with an n. What is more for computers only n can be used.

3.6 宣伝 (せんでん)

i. Responses

	Variant	Responses	%
1.	senden	238	93.33
2.	senndenn	10	3.92
3.	sendenn	4	1.57
4.	sennden	3	1.18
	Total	255	

Of 255 responses, 52 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
All Hepburn Kunrei-shiki Nippon-shiki	senden	238	93.33
Waapuro	senndenn	10	3.92
	Total	248	97.25

All of the responses given can be inputted

3.7 麦焼酎 (むぎじょうちゅう)

For this response 麦 has been ignored since it does not differ across the versions of rōmaji. Also some students did not use the dakuon, those results have also not been included.

i. Responses

Variant	Responses	%	Variant	Responses	%
1. jochu	16	7.55	32. zhouchu	2	0.94
2. jyotyū	15	7.08	33. zhoutyuu	2	0.94
3. jōchū	11	5.19	34. zyochū	2	0.94
4. jyochu	10	4.72	35. zyouchu	2	0.94
5. jyōtyū	9	4.25	36. zyoutyū	2	0.94
6. jotyū	8	3.77	37. dyoutyuu	1	0.47
7. jyōchū	8	3.77	38. gyochu	1	0.47
8. zyotyū	8	3.77	39. gyōtyū	1	0.47
9. jouchuu	7	3.30	40. jhotyū	1	0.47
10. jyouchuu	7	3.30	41. jochū	1	0.47
11. jouchū	6	2.83	42. joutiyuu	1	0.47
12. jyouchu	6	2.83	43. joutsū	1	0.47
13. zyōtyū	6	2.83	44. joutyū	1	0.47
14. zyoutyuu	6	2.83	45. jyōcyū	1	0.47
15. zyochu	5	2.36	46. jyotu	1	0.47
16. jōchu	4	1.89	47. jyoucyū	1	0.47
17. jouchu	4	1.89	48. jyoutyū	1	0.47
18. jyouchū	4	1.89	49. zhōtyū	1	0.47
19. jyoutyuu	4	1.89	50. zhouchū	1	0.47
20. zyōchū	4	1.89	51. zhouthu	1	0.47
21. zyoutyū	4	1.89	52. zhouthuu	1	0.47

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22. jōtyū	3	1.42	53. zhoutyu	1	0.47
23. jyoutyu	3	1.42	54. zhyōtyū	1	0.47
24. zhōchū	3	1.42	55. zyōtyu	1	0.47
25. zhouchuu	3	1.42	56. zyouchū	1	0.47
26. zyouchuu	3	1.42	57. zyūchū	1	0.47
27. gyouchuu	2	0.94	58. zyouchu	1	0.47
28. jōtyu	2	0.94	59. zyouthou	1	0.47
29. joutyu	2	0.94	60. zyouthu	1	0.47
30. joutyuu	2	0.94	61. zyoutyu-	1	0.47
31. zhochu	2	0.94			

Total 212

Of 212 responses, 61 variations were recorded.

ii. Recognised responses

	Variant	No.	%
Traditional Hepburn	jōchū	11	5.19
Revised Hepburn	jochu	(16)	(7.55)
Modified Hepburn	joochuu	-	-
Kunrei-shiki	zyōtyū	6	2.83
Nippon-shiki	zyotyū	(8)	(3.77)
Waapuro	jouchuu	7	3.30
Total		48	22.64

iii. Variants that can be inputted

Variant	Responses	%	Variant	Responses	%
1. jōchū	11	5.19	11. zyōchū	4	1.89
2. jyōtyū	9	4.25	12 jōtyū	3	1.42
3. jyōchū	8	3.77	13 zyouchuu	3	1.42
4. jouchuu	7	3.30	14. joutyuu	2	0.94
5. jyouchuu	7	3.30	15. zyoutyū	2	0.94

6. jouchū	6	2.83	16. joutyū	1	0.47
7. zyōtyū	6	2.83	17. jyōcyū	1	0.47
8. zyoutyuu	6	2.83	18. jyoutyū	1	0.47
9. jyouchū	4	1.89	19. zyouchū	1	0.47
10. jyoutyuu	4	1.89			
			Total	86	40.57

It is clear that students had more difficulty in producing じょうちゅう than しょうちゅう. One reason for this can be the increased number of possible variations that the students have to choose from.

3.8 は

i. Responses

	Variant	Responses	%
All Hepburn Kunrei-shiki	wa	71	27.52
Nippon-shiki Waapuro	ha	187	72.48
	Total	258	100

Unlike を, where we saw almost complete use of the Nippon-shiki/Waapuro *wo*, with は we see more use of the Hepburn/Kunrei-shiki version, *wa*, even though it is only *ha*, that can be inputted to give は. The reason for this could be greater influence from the pronunciation.

3.9 しょう

i. Responses

Variant	Responses	%	Variant	Responses	%
1. shou	55	21.91	8. shyou	3	1.20
2. shō	43	17.13	9. shyō	2	0.80
3. syou	42	16.73	10. shōu	1	0.40
4. sho	41	16.33	11. shyo-	1	0.40
5. syo	37	14.74	12. shy	1	0.40
6. syō	21	8.37	13. syo-	1	0.40
7. shyo	3	1.20			
Total				251	

Of 251 responses, 13 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
Traditional Hepburn	shō	43	17.13
Revised Hepburn	(sho)	(41)	(16.33)
Modified Hepburn	shoo	–	–
Kunrei-shiki	syō	21	8.37
Nippon-shiki	(syo)	(37)	(14.74)
Waapuro		55	21.91
Total		197	78.48

iii. Variants that can be inputted

Variant	Responses	%
1. shou	55	21.91
2. shou	42	16.73
Total	97	38.64

3.10 ちゅう

i. Responses

Variant	Responses	%	Variant	Responses	%
1. chu	186	26.20	14. chyu	3	0.42
2. tyu	133	18.73	15. cyū	3	0.42
3. chū	122	17.18	16. tiyuu	3	0.42
4. chuu	74	10.42	17. chyū	2	0.28
5. tyū	74	10.42	18. tsu	2	0.28
6. tyuu	64	9.01	19. tuu	2	0.28
7. cyū	7	0.99	20. tyu-	2	0.28
8. cyu	6	0.85	21. chyuu	1	0.14
9. thuu	5	0.70	22. thou	1	0.14
10. tu	5	0.70	23. tou	1	0.14
11. cyuu	4	0.56	24. tsū	1	0.14
12. thu	4	0.56	25. tyou	1	0.14
13. tū	4	0.56			
			Total	710	

Of 710 responses, 25 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
Traditional Hepburn	chū	122	17.18
Revised Hepburn	(chu)	(186)	(26.20)
Modified Hepburn Waapuro	chuu	74	10.42
Kunrei-shiki	tyû	74	10.42
Nippon-shiki	(tyu)	(133)	(18.73)
Total		589	82.96

iii. Variants that can be inputted

	Variant	Responses	%
1.	chuu	74	10.42
2.	tyuu	64	9.01
3.	cyuu	4	0.56
	Total	142	20.00

Here we see use of two non-standard forms of rōmaji that are used for inputting into the computer, *tyuu* and *cyuu*. *Tyuu* finds its origin in Kunrei-shiki/Nipponshiki whereas *cyuu* is a hybrid that has arisen from computing.

3.11 しよ

i. Responses

	Variant	Responses	%		Variant	Responses	%
1.	sho	150	61.22	7.	shho	1	0.41
2.	syo	77	31.43	8.	shō	1	0.41
3.	shyo	8	3.27	9.	shou	1	0.41
4.	shoo	2	0.82	10.	shy	1	0.41
5.	scho	1	0.41	11.	ssyo	1	0.41
6.	sh	1	0.41	12.	syō	1	0.41
					Total	245	

Of 245 responses, 12 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
All Hepburn Waapuro	sho	150	61.22
Kunrei-shiki Nippon-shiki	syo	77	31.43
	Total	227	92.65

The variants that can be inputted are the same as the recognised versions.

3.12 The sokuon, ッ

i. Responses

Variant	Responses	%	Variant	Responses	%
1. -cch-	102	41.63	9. -ltuty-	2	0.82
2. -tty-	93	37.96	10. -ttch-	2	0.82
3. Not given	15	6.12	11. -tcy-	1	0.41
4. -tt-	10	4.08	12. -tsucy-	1	0.41
5. -tch-	6	2.45	13. -tliy-	1	0.41
6. -ccy-	4	1.63	14. -tts-	1	0.41
7. -tth-	3	1.22	15. -ttuch-	1	0.41
8. -cchy-	2	0.82	16. -xts-	1	0.41
			Total	245	0.41

Of 245 responses, 16 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
All Hepburn	-tch-	6	2.45
Kunrei-shiki Nippon-shiki	-tty-	93	37.96
Waapuro	-cch-	102	41.63
	Total	201	82.04

iii. Variants that can be inputted

Variant	Responses	%
1. -cch-	102	41.63
2. -tty-	93	37.96
3. -ccy-	4	1.63
4. -ltuty-	2	0.82
Total	201	82.04

Despite fact that -tch- is the Hepburn version, it cannot be used for inputting っち into the computer. As mentioned above -ltuty- comes from the keys used in one method of inputting っち.

3.13 ふ

i. Responses

	Variant	Responses	%
All Hepburn Waapuro	fu	136	53.13
Kunrei-shiki Nippon-shiki	hu	118	46.09
Total		254	100

Both of these variants can be inputted.

3.14 つ

i. Responses

	Variant	Responses	%
1.	tsu	140	54.69
2.	tu	108	42.19
3.	thu	5	1.95
4.	tzu	1	0.39
5.	chu	1	0.39
	Total	255	

Of 255 responses, 5 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
All Hepburn Waapuro	tsu	140	54.69
Kunrei-shiki Nippon-shiki	tu	108	42.19
Total		248	97.25

Both *tsu* and *tu* can be inputted to give つ.

3.15 ん

i. Responses

—んぶ

	Variant	Responses	%
1.	-nb-	215	87.76
2.	-nnb-	23	9.39
3.	-mb-	6	2.45
Total		244	

—ん

	Variant	Responses	%
1.	-n	697	92.32
2.	-nn	58	7.68
Total		755	

ii. Recognised responses

—んぶ

	Variant	Responses	%
Traditional Hepburn	-mb-	6	2.45
Revised Hepburn Modified Hepburn Kunrei-shiki Nippon-shiki	-nb-	215	87.76
Waapuro	-nnb-	23	9.39
Total		244	100

—ん

	Variant	Responses	%
All Hepburn Kunrei-shiki Nippon-shiki	-n	697	92.32
Waapuro	-nn	58	7.68
Total		755	100

All versions except for -mb- can be used for the computer. Since -nn- is only used for inputting ん on computers, then it can be assumed that all occurrences of -nn and -nmb- show influence from word-processing.

3.16 じょう

i. Responses

Variant	Responses	%	Variant	Responses	%
1. jyo	26	12.26	10. zyō	11	5.19
2. jyou	26	12.26	11. zhō	4	1.89
3. jo	25	11.79	12. gyou	2	0.94
4. jou	24	11.32	13. zho	2	0.94
5. zyou	23	10.85	14. dyou	1	0.47
6. jō	20	9.43	15. gyo	1	0.47
7. jyō	18	8.49	16. gyō	1	0.47
8. zyo	15	7.08	17. jho	1	0.47
9. zhou	11	5.19	18. zhyō	1	0.47
			Total	212	

Of 212 responses, 18 variations were recorded.

ii. Recognised responses

	Variant	Responses	%
Traditional Hepburn	jō	20	9.43
Revised Hepburn	(jo)	(25)	(11.79)
Modified Hepburn	joo	–	–
Kunrei-shiki	zyō	11	5.19
Nippon-shiki	(zyo)	(15)	(7.08)
Waapuro	jou	24	11.32
Total		95	44.81

iii. Variants that can be inputted

	Variant	Responses	%
1.	jyou	26	12.26
2.	jou	24	11.32
3.	zyou	23	10.85
	Total	73	34.43

What is remarkable here is that jyo and jyou, forms which were developed for computers, were used the most. This again shows the influence of computing on rōmaji.

3.17 Diacritics

It was found that of the 261 responses, 174 (66.67%) of them had used no diacritics whatsoever. This is interesting since both versions of rōmaji that are taught in schools, Hepburn and Kunrei-shiki, use them. This could be the result of three things: the Anglicising of rōmaji, where words of Japanese origin used in English do not carry their diacritics, such as Tokyo or judo; or more simply because since students have spent so much more time learning English than they have rōmaji, using diacritics is unfamiliar to them; finally it could come from not being able to input the long vowels with one key on the computer keyboard.

Of responses that did use diacritics, 82% used macrons as in Hepburn and 18% used circumflexes as in Kunrei-shiki/Nippon-shiki. It must be noted though that the use of either macrons or circumflexes was not necessarily consistent with the word, hence examples such as *shô* or *syô*.

Further inconsistency could be seen in the transcription of しょうちゅう, where 12% of responses used a diacritic on only one of the vowels despite the word calling for two.

3.18 Summary

Words

	Recognised forms	Forms that can be inputted
焼酎 (しょうちゅう)	47.41%	46.61%
しょっちゅう	20.82%	40.41%
二日 (ふつか)	54.30%	96.48%
新聞 (しんぶん)	90.20%	94.69%
宣伝 (せんでん)	97.25%	100%
麦焼酎 (じょうちゅう)	22.84%	40.57%

Particles and individual elements

	Recognised forms	Forms that can be inputted
しょう	78.48%	38.64%
ちゅう	82.96%	20.00%
を	100%	98.82%
しよ	92.65%	92.65%
っち	82.04%	82.04%
ふ	100%	100%
つ	97.25%	97.25%
んぶ	100%	97.54%
ん	100%	100%
じょう	44.81%	34.43%
は	100%	72.48%

Here it can be seen that apart for しんぶん and せんでん the students had less than 50% success in writing words in rōmaji which contained elements that differ in the different recognised versions. Looking at the individual elements of the words, students found it harder to write しょう, ちょう and じょう correctly. This is probably a result of both the post-consonantal y glides and the long vowels.

4 Discussion

From the results given above it is clear that there is vast inconsistency in the rōmaji the students produced. In fact not a single student produced a whole sentence that was consistent with one of the recognised versions of rōmaji. Also from the results we can see that many students are unsuccessful in their attempts to write rōmaji either in a recognised form or in a form that can be used on the computer. This would imply that they either have difficulty in inputting Japanese into a computer, or that they were not making the connection between the rōmaji they would use when typing and the rōmaji they were writing for this exercise.

One obvious reason for this is that rōmaji is only taught very briefly in schools. Kunrei-shiki is taught for several classes in the fourth year of elementary school and Hepburn is introduced for the same period of time the following year. In ICT classes there is no prescribed rōmaji for pupils to use, so it depends on how the teacher wishes to introduce typing to his students be it based on Kunrei-shiki or Hepburn. From this we can see that rōmaji does not start on a very strong footing, probably explaining for the large part the students' performance here. It could simply be the case that the school curriculum has not caught up with the needs of the modern world. Since despite the fact that it is possible to use kana to input Japanese into the computer, it is rōmaji that used by almost all.

The computer software companies have been very sympathetic to the rōmaji plight of

the general public. You could even go as far as to say that the software developers have, in their goal of letting as many forms as possible produce kana when inputting through rōmaji on the keyboard, added to the mayhem. For not only have they added new ingredients to the pot, such as *cyu* and *jyo*, but they also allow the inputting of mixed versions so that both *shoutyuu* and *syouchuu* will render the same しょうちゅう. Of course the software developers are not to blame for it is only their job to ease the customer use of their product, yet had someone had the wherewithal to supervise how rōmaji was to be used in the inputting of Japanese, it is possible that we would not have the plethora of variations that have been reported here.

5 Consequences

So are the results of this research troubling? Well, from the point of view of the individual Japanese using whatever version of rōmaji they wish, there is no problem. As long as their need for rōmaji is to input Japanese into the computer mixing versions is of little consequence.

However as soon as rōmaji is taken out of computer-input and used in the outside world, we can run into trouble. For in communicating with the global community rōmaji is a necessary tool, yet that could be made most difficult if regardless of there being a fixed standard or not, the general public is using a huge variety of forms.

However from a pedagogic point of view the most important question to raise here is that of phonemic awareness, something which at present is not part of the teaching of rōmaji in schools. Even though here we have only been concerned with those consonants and long vowels that differ among the recognised forms of rōmaji, it must be asked whether the students are connecting the phonemic value of the letters they are writing with the pronunciation of the words due to the large amount of variants. For those, who gave answers that were either not a recognised form or one that could be used on computers, the answer must be no. The same must be said for all of those who

showed inconsistency in their answers, for example transcribing long vowels in one place but not another.

As previously mentioned it could be argued that phonemic awareness of the letters has little importance if rōmaji is solely for use on the computer keyboard. However it could play a very important role in Japan, one that in fact should not be passed up on lightly. For if phonemic awareness were introduced to the teaching of rōmaji, then it would have a direct impact on the teaching of English. Pupils with a solid grounding in the use of the Roman alphabet for their own language would be better placed to begin learning English than they are at present.