

A Comparison of Listening to Time-Compressed Speech and Normal Rate Speed -An effective teaching tool for foreign language listening

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1. Introduction

The purpose of this research was to see if listening to compressed speech could improve subjects' listening comprehension test scores.

We conducted an experiment with the procedure below.

- 1) pre-test
- 2) grouping
- 3) self-learning
- 4) post-test
- 5) non-parametric test

2. What is the Compressed Speech?

It is the speech spoken at twice or three times as quickly as normal speed without changing the intonational patterns or the pitch. We compressed the listening test items of STEP 2nd and Step pre-2nd test (The Society for Testing English Proficiency) which are 158 wpm. Fulford (1992) stated that average conversational speed is about 125-150wpm. Therefore We prepared the following materials which is appropriate for the experiment.

normal speed: 156 wpm

double speed: 312 wpm

triple speed: 468 wpm

3. Procedure

3.1 Subjects(Ss)

Japanese 12 university students and 10 middle-aged English learners

3.2 PRETEST, POSTTEST

We used STEP 2nd Grade Test for university students, while Pre-2nd Test for middle-aged learners. Both the pretest and posttest were the same ones.

3.3 Grouping

On the basis of pre-test scores, Ss were divided into three groups by one-way analysis of variance($r=0.95$);

A: normal speed listeners Mean score 15.75

B: double speed listeners Mean score 12.75

C: triple speed listeners Mean score 15.25

3.4 Self-Learning of Ss

The scripts were selected from listening section of STEP Test which were the same grade and test form as pre-test and post-test.

Ss were given four different scripts because only one scrip is not enough if they continued listening to the same scrip for 30 times. Ss listened to one script twice a day for 3 or 4 days, totaling 30 times. Ss read the scripts as they listened to the tapes because they might not be able to follow the double and triple speed tapes. To give Ss the same experiment condition, the subjects who were given a normal speed tape were allowed to read the script as well.

4. The Results of the Experiment

From the table 2, we found that the differences were not statistically significant, but that there was a tendency that double and triple speed compressed speeches could give some beneficial effects on listening skills.

TABLE 1

The average test score, standerd deviation and variance of University Students

Normal	PRE	POST	POST-PRE
A	15	14	-1
B	16	18	2
C	18	19	1
D	14	14	0
AVE	15.75	16.25	0.5
SD	1.479	2.278	1.118
VAR	2.188	5.188	1.25

Double	PRE	POST	POST-PRE
E	18	18	0
F	16	16	0
G	11	18	7
H	6	10	4
AVE	12.75	15.5	2.75
SD	4.657	3.2787	2.947
VAR	21.69	10.75	8.687

Triple	PRE	POST	POST-PRE
I	17	19	2
J	14	18	4
K	11	19	8
L	19	17	-2
AVE	15.25	18.25	3
SD	3.031	0.829	3.605551
VAR	9.188	0.688	13

Double & Triple	PRE	POST	PRE-POST
E	18	18	0
F	16	16	0
G	11	18	7
H	6	10	4
I	17	19	2
J	14	18	4
K	11	19	8
L	19	17	-2
AVE	14	16.875	2.875
SD	4.123	2.758	3.295
VAR	19.428	8.696	12.410

TABLE 2

The average test score, standard deviation and variance of Middle-Aged Learners

Normal	PRE	POST	PRE-POST
A	9	7	-2
B	10	17	7
C	15	13	-2
AVE	11.333	12.333	1
SD	2.624	4.1096	4.242
VAR	10.333	25.33	27

Double	PRE	POST	PRE-POST
D	13	14	1
E	11	12	1
F	12	16	4
AVE	12	14	2
STDEVP	0.816	1.632	1.414
VARIANCE	0.666	2.666	3

Triple	PRE	POST	PRE-POST	<i>Double&Triple</i>	PRE	POST	PRE-POST
G	18	19	1	D	13	14	1
H	16	16	0	E	11	12	1
I	11	15	4	F	12	16	4
AVE	15	16.666	1.666	G	12	19	7
SD	2.943	1.699	1.699	H	18	16	-2
VAR	13	4.333	4.333	I	16	15	-1
				AVE	13.666	15.333	1.666
				SD	2.494	2.134	3.036
				VAR	7.466	5.466	11.066

TABLE 3

Asymptotic Value of University Students and Middle- Aged Learners. (1 vs 2 vs 3) (1 vs 2 & 3)

	University Students	Middle-Aged Learners
Normal Speed Group	0.414	1
Double Speed Group	0.18	0.713
Triple Speed Group	0.197	0.109
Double & Triple speed Group	0.058	0.307

(s<0.05)

4.2 Test Analysis

In the test analysis, we compared the double and triple groups' correct answers (CA) of pretest and posttest with the normal group to find out what kind of question items they did better.

From table 4, subjects raised their scores particularly in four questions: No 5, 9, 10, 14. In both double and triple group improved their scores at least 25% more than normal group.

TABLE 4

The Percentage Number of Correct Answer of Normal, Double and Triple Groups' Pretest and Posttest

	Question Number	1	2	3	4	5	6	7	8	9	10
Normal Group	Pretest of CA	25%	50%	100%	100%	75%	75%	100%	75%	75%	50%
	Posttest of CA	75%	75%	100%	100%	50%	100%	100%	75%	75%	75%
	Improvement of CA	50%	25%	0%	0%	-25%	25%	0%	0%	0%	25%
Double Group	Pretest of CA	25%	50%	75%	75%	50%	50%	100%	50%	75%	50%
	Posttest of CA	75%	50%	100%	75%	75%	100%	100%	75%	100%	75%
	Improvement of CA	50%	0%	25%	0%	25%	50%	0%	25%	25%	25%
Tripple Group	Pretest of CA	50%	100%	100%	75%	50%	75%	100%	100%	75%	50%
	Posttest of CA	75%	100%	100%	100%	100%	100%	100%	100%	100%	100%
	Improvement of CA	25%	0%	0%	25%	50%	25%	0%	0%	25%	50%

	Question Number	11	12	13	14	15	16	17	18	19	20
Normal Group	Pretest of CA	100%	100%	100%	100%	75%	75%	100%	75%	50%	50%
	Posttest of CA	75%	75%	100%	100%	75%	100%	100%	50%	50%	75%
	Improvement of CA	-25%	-25%	0%	0%	0%	25%	0%	-25%	0%	25%
Double Group	Pretest of CA	75%	50%	100%	75%	75%	50%	100%	50%	50%	50%
	Posttest of CA	100%	75%	75%	100%	75%	75%	100%	75%	25%	25%
	Improvement of CA	25%	25%	-25%	25%	0%	25%	0%	25%	-25%	-25%
Tripple Group	Pretest of CA	100%	100%	100%	50%	75%	75%	100%	100%	25%	25%
	Posttest of CA	100%	100%	100%	100%	100%	100%	100%	100%	50%	0%
	Improvement of CA	0%	0%	0%	50%	25%	25%	0%	0%	25%	-25%

CA: correct answers

4.2.2. Wpm Analysis

We analyzed the speech rate of each test item by wpm (Words Per Minute). Table 4 shows that in all of the test items No 5, 9, 10 and 14 average wpm were larger than all the other items. Therefore, this suggests that the double and triple groups succeeded in raising their scores at a higher rate test items than the normal group.

Table 4

The Average WPM of STEP Test Items

Average WPM of all the test items	159 wpm
Average WPM of No.5, 9, 10,14	164 wpm

4.3 The Questionnaire Analysis

1. Did you develop your listening skills after listening to the compressed speech?

	yes	no	neither
University students	27%	18%	55%
Middle-aged students	43%	57%	0

2.1. Do you think you could comprehend the words which you had not been able to do so on your first listening?

	yes	no	neither
University students	56%	11%	33%
Middle-aged students	86%	14%	0

2.2. If so, how many times did you need to listen to it?

	2 times	3 times	4 times	5 times	6 times	7 times
University students	20%	60%	20%	0	0	0
Middle-aged students	32%	17%	17%	17%	0	17%

3. Do you want to continue listening compressed speech?

	yes	no	neither
University students	73%	9%	18%
Middle-aged students	43%	14%	43%

Questionnaire No1 shows that more than half of Ss are not sure about the improvement of compressed speech because the double and triple speed tapes were too fast. Even though the post-test scores were raised, Ss did not think that their listening skills were developed. The questionnaire No3 shows that university students were more positive with further listening to the compressed speech than middle aged learners because the question No 2.2. implies that middle aged learners

needed much more times to get used to listening to compressed speech in comparison to the university students.

Findings from questionnaires shows that it is difficult to maintain the motivation for listening to the compressed speech and younger learners were easier to adapt themselves to such a unique device than the older learners of English.

5. Conclusion

Even though the asymptotic value showed no significant difference ($p=0.058$), listening to the compressed speech is an effective material for improving English listening ability because the results of only 15-day-experiment got closer to the statistically significant difference ($p<0.05$) and double and triple groups succeeded in listening to the higher wpm test items in the post-test.

Reference

Fulford, C. P. (1992). Systematically Designed Text Enhanced with Compressed Speech Audio. Proceedings of Selected Research and Development Presentations at the Convention of the Association for Educational Communications and Technology and Sponsored by the Research and Theory Division, Iowa.