

Developing Students' Listening Skills through Top-Down Process

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Abstract—Doing listening exercise is not an easy activity for students. Students find it difficult to grasp messages from oral communication; either from real communication or from audio/recording. The purpose of this study was to prove whether or not students' listening comprehension skills can be developed by the implementation of the Top-down Process. The pre-experimental research design was considered suitable to be implemented in this study by involving the Tenth Grade Students of Vocational School "Muhammadiyah 1" Palu. The researchers employed total sampling technique in selecting the sample. In conducting the research, pre-test, treatment, and post-test were employed. For several meetings, the sample of the research was taught by implementing the Top-down Process as one of the processes in doing listening activities. Test, in form of pre-test and post-test, was administered as an instrument of collecting data. After analyzing the data statistically from the test, it is concluded that the hypothesis of the research is accepted.

Keywords: *improving, listening, skill, strategy, top-down process.*

I. INTRODUCTION

Listening is the first skill developed by human being in acquiring language, particularly in the process of first language acquisition. An infant processes language from input s/he hears through interaction with adults [1] The input is stored in the mind. Later, when s/he is ready, s/he tries to communicate the input through speaking. However, in acquiring other languages such as English, learners process the language both through reading and listening activities as the first stage. Both reading and listening skills are receptive skills.

In the EFL context, learning listening skills is considered difficult as it does not only require knowledge of language and strategies in learning but also physiological barriers of the learners. Learners sometimes find themselves nervous in doing listening exercises. Ref. [2] argues why listening is considered difficult skill into four general categories; characteristics of the message, the delivery, the listener, and the environment. Ref. [3] in her research found that there were several factors faced by Indonesian students in doing listening of TOEFL; fewer basic skills, less practice, less motivation, and students' individual differences.

Despite its constraints, listening skills need to be taught to support learners' English communicative competence. As the listening skill is a part of the receptive skill, learners would find

themselves in the difficult situation to receive comprehensible input which they need in negotiating meaning in the conversation. According to [1], [4], [5]. It helps the learners to receive comprehensible language input successfully. Learners with listening comprehension ability may succeed in conducting communication in the international community. In addition, for Indonesian students, having listening comprehension ability may support them to get a high score of English subject at National Examination Test as listening comprehension is one of the skills tested besides reading comprehension.

Ref. [1] claim that listening activities during the teaching of EFL seems difficult to avoid as students do more listening to teachers than having speaking activities. However, based on the observation conducted at one of the high schools at Palu, Sulawesi Tengah, Indonesia, it was found that students still have problems in responding teachers' comment and doing listening exercises. It was due to the teaching of listening comprehension skill did not receive priority [6]. Students only listened while teachers were explaining the material. Teachers rarely guide the students on how to grasp the messages from oral language production either from reciprocal mode or nonreciprocal mode. In addition, it seems that teaching listening strategies and materials are rarely developed in the teachers' teaching method. It may be concluded that the main problem of teaching listening is the teachers' methodology. Based on the situation, the researchers conducted the experimental research to teach listening skills through the top-down process.

Top-down process in listening emphasizes the use of background knowledge to infer content [2], [4], [7], [8]. The listeners connect their background knowledge to the content of the audio material or the topic of conversation. They develop their schemata skills in summarizing the content or forming the main idea or topic of discourse. Ref. [8] suggests listening exercises in the top-down processing to develop the learners' ability as follows:

- Use keywords to construct the schema of a discourse;
- Infer the setting for a text;
- Infer the role of the participant and their goals;
- Infer causes or effects;
- Infer unstated details of a situation;

- Anticipate question-related to the topic or situation.

Ref. [9] had conducted the top-down process of teaching listening to Class XI IPA SMA Wira Usaha Bandungan in Academic Year 2013/2014. The result of this study was an improvement of students' listening comprehension by using of top-down strategy. Ref. [10] also propose that top-down interactive mechanisms, within auditory networks, play an important role in explaining the perception of spoken language.

This study tries to prove if the implementation of Top-down Process can develop students' listening comprehension. The result of the research may be as one of the listening strategies which can be implemented by the teacher in the teaching-learning process. The reason for implementing the top-down process in the teaching of listening is the students do not need to rely only on every individual word from the oral language sources. Ref. [2] assumes that most errors in listening comprehension were caused by students mishearing individual words. For example students get confused to differentiate /son/ and /sun/ , /love/ and /laugh/ as they have similar sound. It is expected that the listeners understand the messages through the context of the discourse.

II. METHODS

The quantitative research approach was adopted in answering the research question whether the top-down process can develop students' listening comprehension skills. The researchers conducted the experimental teaching to the tenth-grade students of Pharmacy class, at one of the vocational high schools in Palu through pre-experimental research design. They were twenty-one students consisted of one male and twenty females. The researcher used total sampling technique in selecting the sample. The sample was treated by the implementation of the top-down process as a strategy to develop students' listening skill. The pre-test was administered to students to find out students prior listening skills before conducting the treatment. After giving a treatment, the researchers conducted post-test to find out the result of the strategy that had been applied. A test was used as the instrument to collect data. The test consisted of picture cues and true/false. Each of them consisted of ten numbers. The former kind of test required the students to choose a picture based on the information from the audio material. The last, the true/false test required the students to choose either the provided statement was correct based on the information from the recording. Every correct answer has 1 point. So that the maximum score is 20.

Conducting a treatment for six meetings of teaching, the researchers applied top-down process to improve students' listening skill. The researchers prepared course content and the test that related to the syllabus given in recording. They designed the treatment in the following steps:

1) Pre-Activity

- Researchers led the students to the topic by showing a picture and asking some questions
- Researchers guided the students to build up their knowledge to the topic

2) While Activity

- Students made mind mapping based on the topic discussed
- Students identified keywords related to the topic discussed
- Students tried to find the answers to listening exercise while they were listening to the recording
- The researchers played the recording at the second time to check whether students' answers were correct or not.
- Researchers and students discussed the answer to the listening exercise.
- If the students still have wrong answers, the researchers re-played the recording*

The data of this research was analyzed by applying statistical analysis. The researcher analyzed the individual score of the students' pre-test and post-test, then the researcher calculated students' mean score both of pre-test and post-test. Then, the researcher computed Mean Deviation (Md) which was taken from [11] as follows:

$$Md = \frac{\sum d}{n} \quad (1)$$

- Md = Mean deviation between pre-test and post-test
 $\sum d$ = The summary of deviation
 n = The number of students

After analyzing the mean deviation of pre-test and post-test, the researcher calculated the Sum of Square Deviation ($\sum x^2 d$) by adapting the formula from [12];

$$\sum x^2 d = \sum d^2 - \frac{(\sum d)^2}{n} \quad (2)$$

$\sum x^2 d$ = The sum of square deviation
 $\sum d^2$ = The sum of deviation
 n = The number of students

Finally, the researcher computed $t_{counted}$ the value to investigate whether the value of the students' pre-test and post-test had a significant difference or not. The result would show

the answer to the hypotheses by using the following formula [12].

$$t = \frac{Md}{\sqrt{\frac{\sum x^2 d}{n(n-1)}}} \quad (3)$$

- $t =$ The value of $t_{counted}$
- $Md =$ The mean deviation of pre-test and post-test
- $\sum x^2 d =$ The sum of square deviation
- $n =$ The number of students

III. RESULTS AND DISCUSSION

This section describes the result of research findings and the discussion. The researchers conducted pre-test before applying the strategy to measure prior knowledge of students' listening skill. There are twenty-one students who were given test and their test result was presented in the following table;

TABLE I. STUDENTS' SCORES IN PRE-TEST

No.	Initial	Obtained Score		Total	Individual Score
		Picture Cues	True/False		
1	ABA	7	4	11	55
2	AF	5	8	13	65
3	Ald	4	6	10	50
4	Alf	5	7	12	60
5	AR	5	3	8	40
6	CD	8	7	15	75
7	DA	8	5	13	65
8	F	7	8	15	75
9	H	5	7	12	60
10	HA	4	7	11	55
11	I	5	7	12	60
12	N	4	7	11	55
13	NH	8	6	14	70
14	NI	9	6	15	75
15	NM	4	7	11	55
16	NMu	6	8	14	70
17	NS	7	8	15	75
18	RF	6	6	12	60
19	RJP	7	6	13	65
20	SAS	8	8	16	80
21	YC	8	7	15	75
<i>Total</i>					1340

The researchers analyzed an individual score by using the following formula;

$$IS = \frac{PCS + TFS}{2} \times 10 \quad (4)$$

- $IS =$ Individual Score
- $PCS =$ Picture Cues Score
- $TFS =$ True or False Score

For Example:

$$AR = \frac{5 + 3}{2} \times 10 = 40$$

Tabel. I shows that SAS got 80 which is the highest score among all of the students. Meanwhile, the lowest score was 40, gained by AR. The students' mean score for pre-test is 63,809 which is considered low based on the passing grade stated by the school. The passing grade for English subject is 65.

After conducted pre-test test, the researchers treated the students by implementing the top-down process in teaching listening skills for six meetings. As the strategy recommends students background knowledge in inferring the content of the audio material, the researchers provided them pictures. The researchers raised questions to stimulate students' knowledge related to the picture. Pictures which were shown to students were based on the topic discussed. At first, students gave respond in Bahasa Indonesia as they lacked English vocabulary, but later they had shown their effort trying to speak English. The researchers provided keywords of each topic discussed on board. As listening skills are rarely practiced during the English lesson, the students were not familiar to do the exercises. The researchers played the recording twice. At the first role, the students tried to find the answers to the listening exercises. The researchers gave a pause between each recording to give time to students in answering the exercises. Then the recording was played for the second time to give chance for students to check whether their answers were correct. The students made inferences in answering the exercises. The recording material used by the researchers were listening to material from [13]. The students showed their enthusiasm in attending the treatment class as they rarely listened to recording listening materials. However, the school environment which was deafening contributed difficult situation for the researchers to teach listening skills. It is recommended for the school to provide one classroom which has soundproof room to maximize the teaching of listening skills.

Next, the students were tested through post-test to measure their ability in listening after applying the strategy of the top-down process. The result of students' post-test would be presented in the following Table II.

Table. II shows that the highest score of the post-test is 95, which is possessed by ABA, I, and SAS. On the other hand, the lowest score is 45 got by NH. The students' mean score of post test is 78,095 which had reached the maximum passing grade stated; 65. Every school should determine its Passing Grade Score for each subject. The school in one area would have the different passing grade for the similar subject as it is determined by the characteristic of the school.

TABLE II. STUDENTS' SCORES IN POST-TEST

No.	Initial	Obtained Scores	Total	Individual
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		Picture Cues	True/False		Scores
1	ABA	9	10	19	95
2	AF	8	8	16	80
3	Ald	8	7	15	75
4	Alf	9	8	17	85
5	AR	7	8	15	75
6	CD	6	7	13	65
7	DA	8	8	16	80
8	F	7	10	17	85
9	H	2	9	11	55
10	HA	6	10	16	80
11	I	9	10	19	95
12	N	5	6	11	55
13	NH	5	4	9	45
14	NI	9	9	18	90
15	NM	7	10	17	85
16	NMu	9	8	17	85
17	NS	8	9	17	85
18	RF	5	9	13	70
19	RJP	8	10	18	90
20	SAS	9	10	19	95
21	YC	6	8	14	70
<i>Total</i>					1640

Relating to students mean score of the post-test (78.095) which is higher than the students' mean score of pre-test (63.809) shows that the treatment of the top-down process in teaching listening affects the students' listening skills development. As a result, the researchers concluded that top-down process could develop students' listening skill. Even though the result of both pre-post tests shows the improvement of the students' learning achievement, the researchers need to apply some formulas to prove whether the hypothesis is accepting or rejecting. So that, the researchers computed deviation (d) and square deviation (d²) of pre-test and post-test score as follows.

TABLE III STUDENTS' SCORES IN PRE-TEST AND POST-TEST

No.	Initial	Students' Individual Score		Deviation (d)	Square Deviation (d ²)
		Pre-Test	Post-Test		
1	ABA	55	95	40	1600
2	AR	40	75	35	1225
3	I	60	95	35	1225
4	NM	55	85	30	900
5	Ald	50	75	25	625
6	Alf	60	85	25	625
7	HA	55	80	25	625
8	RJP	65	90	25	625
9	AF	65	80	15	225
10	DA	65	80	15	225
11	NI	75	90	15	225
12	NMu	70	85	15	225
13	SAS	80	95	15	225
14	F	75	85	10	100
15	NS	75	85	10	100
16	RF	60	70	10	100
17	N	55	55	0	0
18	H	60	55	-5	25
19	YC	75	70	-5	25
20	CD	75	65	-10	100
21	NH	70	45	-25	625

<i>Total</i>	300	9650
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Table. III shows that there were about four students got minus deviation; H, YC, CD, and NH as their post-test scores were lower than their scores of the pre-test. However, there were about sixteen students got higher scores of post-test than pre-test. Nevertheless, N indicated that there was no score alteration between post-test and pre-test, it was constant. In conclusion, the researcher argued that the sixteen students had improved their listening ability after having applied top-down process strategy, but it did not prevail for five students.

To analyze the mean deviation of pre-test and post-test on the previous table, the researchers applied the following formulation that had been revealed previously.

$$Md = \frac{\sum d}{n} \tag{5}$$

$$Md = \frac{300}{21} = 14.287/14.3$$

Further, the researchers calculated the value of the square deviation. In this case, they applied formulation as follows:

$$\begin{aligned} \sum x^2 d &= \sum d^2 - \frac{(\sum d)^2}{n} \\ \sum x^2 d &= 9650 - \frac{(300)^2}{21} \\ \sum x^2 d &= 9650 - \frac{90000}{21} \\ \sum x^2 d &= 9650 - 4285.71 \\ \sum x^2 d &= 5364.29/5364.3 \end{aligned}$$

To know, whether the value of students' pretest and post-test had a significant difference or not, the researchers computed it by using formulation below:

$$\begin{aligned} t &= \frac{Md}{\sqrt{\frac{\sum x^2 d}{n(n-1)}}} \\ t &= \frac{14.3}{\sqrt{\frac{5364.3}{21(21-1)}}} \\ t &= \frac{14.3}{\sqrt{\frac{5364.3}{21(20)}}} \\ t &= \frac{14.3}{\sqrt{\frac{5364.3}{420}}} \end{aligned}$$

$$t = \frac{14.3}{\sqrt{12.772}}$$

$$t = \frac{14.3}{3.6}$$

$$t = 3.97/4.00$$

The result of this research proves that the mean score of post-test is higher than the mean score of the pre-test. In addition, the value of t_{counted} (4.00) is higher than the value of t_{table} (1.72) with 0.05 the level of significance (21 – 1) degree of freedom (df). The facts indicate that top-down process can develop students' listening skill of tenth grade of Pharmacy class of SMK Muhammadiyah 1 Palu.

IV. CONCLUSION

The researchers had conducted their research about listening skill at Vocational School "Muhammadiyah 1" Palu. The sample of the research was 21 students of the tenth grade of Pharmacy class which was selected through total sampling technique. The top-down process was implemented in manipulating students' listening comprehension skills. Students were trained to develop their listening skills by activating their background knowledge and experience to infer the intention of discourse given. The data of the research were analyzed statistically. The string of formula applied shows that the mean score of post-test is higher than mean score of the pre-test. In addition, the value of t_{counted} (4.00) is higher than the value of t_{table} (1.72) with 0.05 the level of significance (21 – 1) degree of freedom (df). It indicates that the hypothesis stated was accepted.

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