The effect of project-based learning on students' speaking skills at the first grade of SMAN 1 Tomia

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ABSTRACT

This study aimed to find out whether there was a significant effect of using project-based learning on students' speaking skills in the first grade of SMAN 1 Tomia. The research question formulated "is there any significant effect of project based-learning on students' speaking skills at SMAN 1 Tomia?". The design of the study was a pre-experimental research design that consisted of one group pre-test and post-test. Post-test was done to know students' ability after treatment by using project-based learning. The sample of this study was the students in the first grade of SMAN 1 Tomia, namely class X IPA1 who were registered in the academic year 2018/2019. The data analysis of the study was a paired sample t-test to determine the effect of using project-based learning on students' speaking skills. The results showed that students' speaking ability in the post-test (3.1875) was higher than in the pre-test (2.0893). The hypothesis testing found that the significance level was 0.00 since if the significance value was less than 0.05, i.e., 0.00<0.05. This indicated that the null hypothesis (H_0) was rejected, and H_1 was accepted. It meant that there was a significant effect of using project based-learning to improve students' speaking skills in the first grade of SMAN 1 Tomia.

Keywords:
speaking, teaching speaking, project-based learning.

1. Introduction

There are four language skills that language learners should master, namely listening, reading, writing, and speaking. Those skills are taught at in senior high school level, including the last-mentioned skill. In the basic competence of English in SMA, it is stated that the students should master the competence of creating written and spoken text. It means that speaking skill is no more the last thing to teach English at school. In other words, speaking now equals other skills.

To have good speaking skills, students do not only need to master the knowledge of the language. Harmer (2001) stated that to speak fluently; students must master the ability to process information and language on the spot. To be a good speaker, students need to master not only grammar, vocabulary, and pronunciation but also speech production, articulation, automaticity, fluency, and other skills. Those skills are needed to be mastered by the students to help them to master the skill of speaking. Unfortunately, mastering those skills is considered an uneasy thing since English is not the native language in Indonesia. In the process of teaching and learning English, it is a problem to be solved.

Speaking is an interactive process of constructing meaning that involves producing, receiving, and processing information (Florez, 1999). Then, Nunan in

Prawidya et al. (2022) added that speaking becomes the most significant skill to be learned by the students because this skill is grouped as productive skill. Speaking enables students to receive information from people through their conversation, after which they should understand the information and respond to it or communicate their understanding of the information.

However, as stated by Sandra et al. (2021), students are afraid to speak English in front of their friends so that teachers need to find techniques to teach students to speak. The standard of competence for first graders stipulates that in speaking skills, students should be able to express the meaning of simple conversation for interpersonal and transactional purposes in formal and informal situations to communicate with the nearest environment and /or in an academic context. It means that the students must be able to speak to express what they want to show to others. Besides, the difficulties are caused by embedded language components, and other factors also cause the difficulty of mastering it. One of the factors is teaching technique. Several teaching techniques can be used to increase students' speaking skills. They are role play, communication games, group discussion, scaffolding talk, project-based learning, etc.

The writer believes that choosing the best technique will allow the teacher to manage the problems in class. The problems are actually faced by language teachers in most educational agents, including in SMAN 1 Tomia. Sometimes, the teacher asks students to practice speaking spontaneously. The teacher should give a model first; therefore, the students will understand what kinds of speaking they will produce. Thus, English teachers must look for the best solution to overcome the problems to reach the target of teaching English.

Based on the preliminary observation, the student's initial speaking skill in that school was still lacking. Most of the students did not respond or answer when the teacher asked or instructed them in English. It was assumed that there were some possibilities why they did not respond to the questions in English. First, the students perhaps were not familiar yet with the teacher's vocabulary, so they did not understand what the teacher said or asked. Second, they perhaps understood the questions or what the teacher said but did not know how to respond. Third, they might understand and know how to respond but are not confident to say it.

To investigate first graders' proficiency in spoken English, the researcher conducted a preliminary study of the first graders at SMAN 1 Tomia. The researcher found that the students have several problems with speaking, such as reluctance, shyness, and fear of committing oral mistakes. Besides, the students show poor speaking ability and lack peers or social circles with whom they can explore their speaking potential.

After identifying the sources of the problem, the researcher looked for an appropriate action to solve it. The researcher noticed that the effect of Project-based Learning in English classrooms has become more popular in recent years. There are numerous studies in the English language teaching context that suggest that it provides a more contextual environment to learn the four macro skills of English, enhances the teaching-learning quality, enhances learners' higher-level cognitive development, and improves learners' language learning achievement (Baş & Beyhan, 2010).

The researcher considers the effect of Project-Based Learning as an appropriate technique to help the students improve their speaking skills. Project-Based Learning (PBL) is an individual or group activity that goes on over a period of time, resulting in a product, presentation, or performance, as quoted in IAE-Pedia. PJBL is different from traditional instruction in that it emphasizes learning through student-centered, interdisciplinary, and integrated activities in real-world situations (Poonpon, 2011).

In view of this, Project Based Learning is one of the recommended teaching techniques. Project Based Learning refers to a technique that allows "the students to design, plan, and carry out an extended project that produces a publicly exhibited output such as a product, publication, or presentation" (Patton, 2013). Project Based Learning gives contextual and meaningful learning for the learners through the project as their learning environment. Through Project Based Learning, the learners are engaged in purposeful communication to complete authentic activities (project work) so that they have the opportunity to use the language in a relatively natural context (Haines in Maulany, 2013) and participate in meaningful activities which require authentic language use (Fragoulis, 2009). Based on some considerations above, the researcher is interested in conducting research entitled "The effect of project-based learning on students' speaking skills at the first grade of SMAN 1 Tomia."

2. Methods

The design of this study was pre-experimental (one group pre-test and post-test). This study only applied one class that was given pre-test and post-test before and after treatment. The population of this study was all the tenth-grade students of SMAN 1 Tomia in science class who registered in the academic year 2018/2019. The total was 82 from three classes. The sample of this study was one class, namely class X IPA1 which consisted of 28 students. The technique in sampling process of this study was the purposive sampling technique.

The Instrument of this study was a speaking test. The first meeting and the last meeting were used to determine students' speaking skills in fluency and accuracy after being taught by using Project Based Learning Technique. There were two kinds of speaking tests, namely pre-test, and post-test. The topics the researcher provided in the pre-test and post-test were the same. The score of speaking skill was used as a band score proposed by Ur (1996) for fluency and accuracy.

In collecting the data, the researcher gave the pre-test to the students in the first meeting. The pre-test was used to find out students' speaking skills before conducting the treatment. In the treatment, the teacher taught the students speaking skills using project-based learning in class X IPA1. After all, the treatments had been done, the researcher gave a post-test to the students. The aim of doing the post-test was to see whether project-based learning could improve the students' speaking skills in terms of fluency and accuracy. Post-test conducted in the last meeting.

Furthermore, the researcher used descriptive-quantitative as a technique for analyzing the data. The data was analyzed by using SPSS 16.0 software. The pre-test and post-test data were analyzed using paired Sample T-Test. The inferential statistics aimed to test the hypothesis.

1. If Sig > 0.05, H0 hypothesis was accepted, there was no significant effect of using Project Based Learning to improve students' speaking skill at second grade of SMAN 1 Tomia.
2. If Sig ≤ 0.05, H1 hypothesis was accepted, there was a significant effect of using Project Based Learning to improve students' speaking skill at first grade of SMAN 1 Tomia.

3. Result
3.1. Description of Students' Score on Pre-test

Using project-based learning, a pre-test is performed before applying the teaching and learning process. This test is given to students' speaking skills before treatment. The result of students' pre-test scores was measured by using a band score from Ur (1996), which involves accuracy and fluency. The results of students' speaking achievement in the pre-test can be seen in the following table:

Table 1. Descriptive Students' Score On Pre Test

| Students' Score	Frequency	Percentage (%)
1	2	7.14 %
1,5	2	7.14 %
1.75	5	17,85 %
2	9	32.14 %
2.25	1	3.57 %
2.5	4	14.28 %
2.75	2	7.14 %
3	3	10.71 %
Total	(Score=58.5) (N=28)	100 %
Mean	2.0893	
Maximum	3	
Minimum	1	
Std. Deviation	0.53668	

Based on the table above, the descriptive analysis of students' pre-test scores shows that 2 students get a score of 1, 2 students get a score of 1.5, 5 students get a score of 1,75, 9 students get a score of 2, and 3 students get a score 3. Most of them are categorized as poor and very poor criteria. Moreover, the maximum score of students' speaking achievement in the pre-test is 3, and the minimum score is 1. The mean score is 2.0892, whereas the Std. Deviation score is 0.53668. Therefore, generally, the students' speaking achievement is still slow competence.

Based on the band scale of Ur (1996), students' speaking achievement on the pre-test can be categorized into scores 1, 2, and 3. So, it can be said that the students speaking achievement on the pre-test are categorized in moderate, poor, and very poor criteria because their speaking achievement in fluency criteria are (1) Little or no communication, (2) very shy, brief statements, sometimes difficult to understand and (3) gets idea across, but hesitantly. For accuracy criteria, (1) Little or no produce, (2) poor vocabulary, mistakes in basic grammar, strong foreign accent, and (3) adequate but not rich vocabulary makes obvious grammar mistakes, slight foreign accent (Ur, 1996)). For detail, the distribution of student's scores in the pre-test is described below:

Table 2. Distribution of Students' Score on Pre-test

No	Speaking Criteria	Interval Score	Frequency	Percentage
1	Very Good	5	0	0%
2	Good	4	0	0%
3	Moderate	3	3	10.71%
4	Poor	2	16	57.14%
5	Very Poor	1	9	32.14%

From the table above, no students get scores 4 and 5 as classified as good and very good, which means they get a lower percentage. There are three students (10.71%) who are categorized as "moderate," 16 students (57.14%) are categorized as "poor criteria," and nine students (32.14%) are categorized as "very poor" criteria. The highest percentage is 57.14%) which is classified as poor criteria. It can be concluded that most students' speaking achievement in pre-test categories is poor criteria. The detailed explanations are shown in graph 1.1:
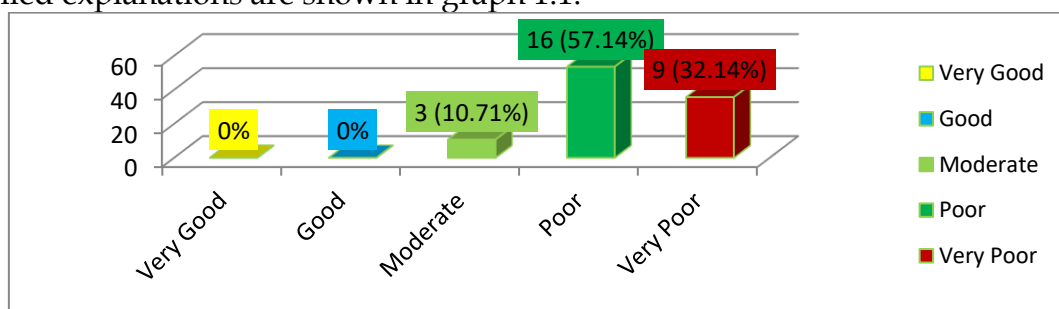
Based on the graph above, generally, students in pre-test get poor scores, and some get very poor scores. Therefore, only small students get moderate scores, and no students get very good or good scores. It can be concluded that their speaking achievement in the pre-test is still lower.

3.2 Description of Students' Score on Post-test

Post-test is given after treatment for the students. This test is used to know the student's speaking achievement after the teaching-learning process by using project-based learning. Students' post-test scores are measured using band scores from Ur (1996), which involves accuracy and fluency. The result of the students' speaking scores in the post-test can be seen in Table 3. and 4.

Table 3. Descriptive Students' Score On Post Test

| Students' Score	Frequency	Percentage (%)
2	1	3.57 %
2.25	2	7.14 %
2.5	2	7,14 %
2.75	2	7.14 %
3	10	35.71 %
3.25	1	3.57 %
3.5	1	3.57 %
3.75	4	14.28 %
4	5	17.85 %
Total	(Score=88.25) (N=28)	100%
Mean	3.1875	
Maximum	4	
Minimum	2	
Std. Deviation	0.57181	

The descriptive analysis of students' scores in the pre-test above shows that 1 student gets a score of 2, 2 students get a score of 2.25, 2 students get a score of 2.5, and 2 students get a score of 2,75. These are categorized as poor levels. Then, 10 students get a score of 3, 1 student gets a score of 3,25, and1 student gets a score of 3.5, and 4 students get a score of 3.75. These are categorized as moderate level, and 5 students get a score of 4 is categorized as a good level.

Most of them are categorized as moderate, some at a good level, and there are few students as categorized as poor. Moreover, the maximum score of students' speaking achievement in the post-test is 4, and the minimum score is 2. The mean score is 3.1875, whereas the Std. Deviation of the score is 0.57181. Therefore, the students' speaking achievement is generally moderate and competent. For detail, the distribution of student's scores in the post-test is described below:

Table 4. Distribution of Students' Score on Post-test

No	Speaking Criteria	Interval Score	Frequency	Percentage
1	Very Good	5	0	0%
2	Good	4	5	17.85%
3	Moderate	3	16	57.14%
4	Poor	2	7	25%
5	Very Poor	1	0	0%

Table 4 shows that no students get scores 5 as classified as a very good score. Then, 5 students (17.85%) are categorized as "good," 16 students (57.14%) are categorized as "moderate," 7 students (25%) are categorized as "poor" criteria, and no students are categorized as "very poor" level. The highest percentage is 57.14% which is classified as moderate. It can be concluded that most students' speaking achievement in post-test is categorized as moderate criteria. The detailed explanations are shown in the following graph:
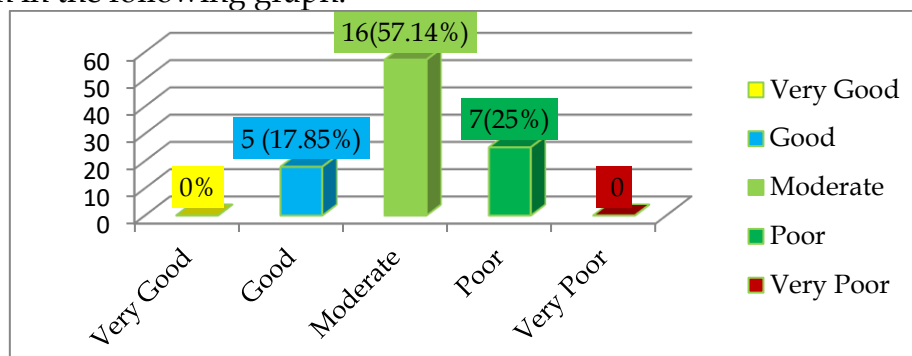
Based on the graph above, it can be seen that generally, students in post-test are mostly classified on "moderate" criteria. Therefore, some students are classified as "good" criteria, and some are still on the "poor" level. And then, no student was on the "very good" level and "very poor" criteria. It can be concluded that the speaking achievement in the post-test is improved. The improvement can be seen clearly in the following charts:
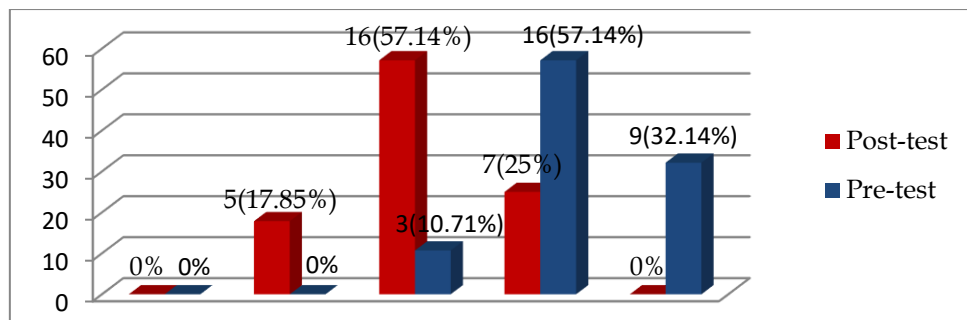
Based on the graph above, it can be seen the difference after and before the treatment (pre-test and post-test). Most of the students on the pre-tests are on the "poor" level, and most of the post-tests are on the "moderate" level. In both the pre-test and post-test, no one student is categorized as having a very good level, but in the post-test, some students are categorized as having a "good" level, while in the pre-test, no one is categorized as having a "good" level. Although some students are still on the "poor" level in the post-test, no one is categorized as "very poor." It can be concluded that the students' speaking skill in the pre-test is higher than the students' speaking skill in the pre-test.

3.3 Statistical Hypothesis

In this study, the researcher uses paired sample t-test to know whether there is a significant effect of using Project Based Learning to improve students' speaking. Theoretically, If Sig ≤ 0.05, H1 hypothesis is accepted, it means that there is a significant effect of using Project Based Learning to improve students' speaking skills. If Sig > 0.05, H0 hypothesis is accepted, and there is no significant effect of using Project Based Learning to improve students' speaking skills. The result of the hypothesis of this study can be shown in Table 5:

Table 5. Group Statistics

			Paired Samples Statistics		
		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	PreTest	2.0893	28	.53668	.10142
	PostTest	3.1875	28	.57181	.10806

		Paired Differences					T	Df	Sig. (2-tailed)
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
					Lower	Upper			
Pair 1	Pretest – Posttest	-1.09821	.43748	.08268	-1.26785	-.92858	-13.283	27	.000

Based on the table, group statistics paired samples t-test shows that the value of sig (2-tailed) = 0.000 is smaller than α= 0.05 (0.000<0.05). It means that project-based learning has a significant effect on Students' Speaking skills among the first-grade students of SMA Negeri 1 Tomia. It can be concluded that project-based learning effectively increases students' speaking skills.

4. Discussion

Project-based learning is a teaching method involving students individually and collaboratively in a series of phases to develop an end product through which the students have opportunities to construct their knowledge and practice their skills. Harris & Katz (2001) stated that student-centered learning leads the students to investigate a topic worth through the process of learning outcomes either individually or cooperatively. When applied, project-based learning in English-speaking classes for first-grade students of SMAN 1 Tomia showed a significant effect on students' speaking achievement.

A significant effect on students' speaking achievement can be seen in improving students' scores and mean scores from the pre-test to the post-test. The students' score increases from pre-test to post-test. Besides, the mean score of students in the post-test is higher than the mean score in the pre-test. Moreover, the paired sample t-test result shows that the significance value was lower than 0.05 (0.00<0.05). It means that project-based learning has a significant effect on students' speaking achievement.

From the above finding, project-based learning is a teaching technique that can change and motivate students to learn. It is supported by Barrows (1986) that PBL helps students develop flexible knowledge, effective, effective problem-solving skills, self-directed learning, effective collaboration skills, and intrinsic motivation. Similarly, Thomas et al. (2002) said that it engages the students in gaining knowledge and skills through structured tasks and designing products carefully. Also, Sarwar (2018) stated that its focal aim is to give the students opportunities to become fluent and confident in using English by utilizing and expanding their existing language repertoire.

This study finding is also in line with Boss et al. (1995) that some of the advantages of the PBL technique in learning are: (1) Increase in motivation: learners can choose their own topics, the extent to of content, and the presentation mode. Learners build their projects to suit their own interests and abilities. These kinds of activities are highly motivating for learners. (2) Increase in problem-solving abilities: Project-Based Learning encourages learners to engage in complex and ill-defined contexts. From the beginning, learners identify their topics and problems and seek possible solutions. By participating in both independent work and collaboration, learners improve their problem-solving skills, thereby developing their critical thinking skills. (3) Improves media research skills: Project-Based Learning provides a real-world connection to context. Learners conduct research using multiple information resources. By locating the resources, themselves, their research skills develop and improve. (4) Increases in collaboration: learners create and organize their own groups in the processing stages. They share knowledge and collaboratively construct artifacts. Through collaboration, they develop social communication skills and obtain multiple perspectives.

Likewise, as stated by Nunan (2004), teaching speaking must provide opportunities for students to talk by using group work or pair work and limiting teacher talk: pair work and group work activities can be used to increase the amount of time that learners get to speak in the target language during lessons. Those principles are based on the principles of project-based learning. The project-based

learning was designed to increase students' motivation. Learners can choose their own topics based on their interests and abilities, foster teamwork, and challenge students to solve problems. The teacher acts to facilitate and guide the learners. It may help students become active and makes students responsible for their learning.

Overall teaching and learning activities, the researcher provides topics based on content related to learners' everyday life that helps students' enthusiasm in the learning process and makes it easy to get ideas to speak up. In applying problem-based learning, the researcher asked the students to make videos to describe someone with a group member outside the classroom. While the in-class activity, the students were allowed to criticize, give good comments, and give feedback on the other groups' videos. It can stimulate students to think critically and develop their knowledge creatively.

In the pre-test, the researcher found that the students were still confused about speaking, and then the researcher asked them to make some videos about descriptive text based on their group members. In the first students' videos, they are actually still nervous and shy to speak up in their conversation, although in a group member. Some of them sometimes speak slowly, making it difficult to express their ideas and making basic grammar errors. In the second, third, and fourth videos, students showed better progress than in their first videos. The students enjoyed themselves without feeling nervous and shy during their performance. Furthermore, in the class activities, students showed enthusiasm and became active learners while they criticized, commented, and gave feedback on the other groups' videos.

Therefore, based on the discussion above, it can be interpreted clearly that the use of project-based learning is significantly influenced students' speaking competence which was proved by the enhancement of students' mean scores on the pre-test to post-test and the hypothesis testing, which also showed that H0 is rejected and H1 is accepted which means that there is any significant effect on students' speaking ability at the first grade of SMAN 1 Tomia after taught using project-based learning.

5. Conclusion

Project-based learning is a teaching method involving students individually and collaboratively in a series of phases to develop an end product through which the students have opportunities to construct their knowledge and practice their skills. In teaching speaking using project-based learning, the class is more active and alive. The students seemed to enjoy and be motivated in the learning process. Based on the result of this study, the hypothesis is accepted; it means that there is a significant effect on the students' speaking skills by using project-based learning in the first grade of SMA Negeri 1 Tomia. It can be concluded that project-based learning can improve students' speaking skills in the first grade of SMAN 1 Tomia.

References

Barrows, H. S. (1986). A taxonomy of problem-based learning methods. Medical Education, 20(1), 481–486. https://doi.org/https://doi.org/10.1111/j.1365-2923.1986.tb01386.x

Baş, G., & Beyhan, Ö. (2010). Effects of Multiple Intelligences Supported Project-based Learning on Students' Achievement Levels and Attitudes towards English Lesson. International Electronic Journal of Elementary Education, 2(3), 366–368.

Boss, N., Krajcik, J. S., & Patrick, H. (1995). Telecommunications for teachers: Supporting reflection and collaboration among teaching professionals. Journal of Computers in Mathematics and Science Teaching, 14(12), 187–202.

Florez, M. A. C. (1999). Improving Adult English Language Learners' Speaking Skills. ERIC Publications, ERIC Numbe, 1–4. https://eric.ed.gov/?id=ED435204

Fragoulis, L. (2009). Project-Based Learning in Teaching of English as a Foreign Language in Greek Primary Schools: From Theory to practice. Journal of English Language Teaching, 2(1).

Harmer, J. (2001). The practice of English Language Teaching, 3th edition. Pearson Education Ltd.

Harris, J. H., & Katz, L. (2001). Young Investigators: The Project Approach in the Early Years. Teachers College Press.

Maulany, D. B. (2013). The use of project-based learning in improving the students speaking skill (A classroom action research at one of primary schools in Bandung). Journal of English and Education, 1(1), 30–42.

Nunan, D. (2004). Task-based Language Teaching. Cambridge University Press.

Patton, A. (2013). Work that matters : The Teacher's Guide to Project Based Learning. Paul Hamlyn Foundation.

Poonpon, K. (2011). Enhancing English skills through Project-based Learning. The English Teacher Journal, 15(1), 1–10.

Prawidya, I., Suhartini, L., & Sapan, Y. T. (2022). RAFT Strategy on Students' Speaking Competence. Journal of Teaching of English, 7(1), 93–98. http://ojs.uho.ac.id/index.php/JTE/article/view/25246/14903

Sandra, R., Pahlevi, M. R., & Abas, T. T. (2021). Secondary Students' Engagement on Story Completion of Speaking Classroom. Journal of Teaching of English, 6(4), 368–378. http://ojs.uho.ac.id/index.php/JTE/article/view/22695/13632

Sarwar, Z. (2018). Project-based Learning. Zakia Sarwar Research. http://spelt.org.pk/

Thomas, J., Michaelson, A., & Mergendoller, J. (2002). Project-based Learning: A Handbook for Middle and High School Teachers. The Buck Institute for Education.

Ur, P. (1996). A Course in Language Teaching Practice and Theory. Cambridge University Press Watson.