

The Effectiveness of Using Microlecture to Assist In High-School English Grammar Learning -Based on a Case Study of Guanghai High School

Liu leilei¹, Ye Shuang²

¹college of foreign language education, China West Normal University

²The foreign language school, Civil Aviation Flight University of China

Abstract: This study aims to define microlecture as a tool to assist students in English grammar learning after class. Through an empirical research, this study took the non-predicate verb as an example and combined relevant theories at home and abroad to find that most of teachers and students have positive attitudes toward the use of microlecture to assist in grammar learning; microlecture can effectively assist students in English grammar learning; the assisting effect of microlecture is better than lecture notes.

Keywords: Microlecture; English Grammar; Non-Predicate Verb, Assist learning

I. Introduction

For a long time, grammar teaching of high school in China has been in a state of “time-consuming and low-efficiency”. At the same time, “microlecture”--- a new way of informatization education, is responding such demand. It gradually applied widely into the field of teaching, because it can present students specific goals, flexible forms and refined content.

Both grammar teaching and learning need something new to renew the traditional methods --- “grammar explanation – student practice”. Most importantly, students need another method to learn English grammar systematically to complement knowledge points that haven’t been learnt in class. What’s more there are little researches about applying microlecture into grammar learning. Applying microlecture into grammar learning will be a relatively new trend in information era. Therefore, it’s indispensable to conduct the study to check whether microlecture can assist effectively in grammar learning and explore some suggestions and ways of the appropriate use of microlecture for teachers.

II. The Definition of Microlecture

Now in China, many various levels of research on microlecture have been carried out by university researchers, regional education researchers, and frontline teachers, thus microlecture has a lot of different definitions. The Official Document of First Microlecture Competition in Primary and Secondary Schools describes the microlecture, the full name of microlecture is “micro video course”. It uses teaching videos as main form of presentation. Moreover, microlecture is an organic combination of related resources.

Zhang Yichun (2013) holds that in order to make learners who conduct self-learning can get the best effect, microlecture bases on streaming media to present brief and completed teaching activities about a certain knowledge point or teaching procedures. The main characteristics can be concluded in the following Table 1.

Table 1. Main Characteristics of Microlecture from Zhang Yichun (2013)

Purpose	The best effect
Design	Careful informatization teaching design
Form	Streaming media: video or animation. ect.
Content	A certain knowledge point or teaching procedures
Time	Short
Nature	Completed teaching activity

The definition of microteaching is closely related to the term microlecture. Microteaching adopts a minority of students as objects and tries a small class teaching way, which is within a relatively short time (about 5-20 minutes). Then the whole teaching process should be recorded and analyzed again after class. This is a new and important method to conduct teacher training and improve teacher’s teaching level. Microteaching emphasizes the purpose on teacher training and teaching level improving, but microlecture pays more attention to students learning.

In this paper, microlecture is not simple fragment form of the classroom teaching. It adopts videos which are about 10 minutes as main carrier to record the whole process of teaching and learning activities about a certain knowledge point (key point, difficult point or doubtful point), which can be watched anywhere to get

the helpful information. The teaching plan of contains a complete teaching process, such as teaching materials, teaching objectives, teaching procedures and teaching aids, and so on.

III. Research Design

This study tried to address the following two questions:

1. Can microlecture assist students effectively in English grammar learning?
2. Compared with lecture notes, which has a better effect on assisting English grammar learning?

Three high-school English teachers took part in this study. (as shown in Table 2).86 subjects, students from two classes in Grade one in Guanghan High school, took part in this study. Students who have different levels of English score were equally divided into every normal class when they were admitted into High School. In this way, students in different English levels have similar proportion in each class. Two classes were randomly arranged as the experiment group and the control group. Experiment group had 43 students, and control group had 43 students. The above information implied that the English level of two classes was similar, and Table 9 also showed that there was no significant difference in the pretest between experiment group and control group.

Table 2. Teachers' teaching information

Pseudonym	Age	Gender	Length of teaching	Their ways of grammar teaching
Ms. Xie	43	Female	20 years	Explanation-conclusion notes-practice-test (one grammar points, one specific exercise)
Ms. Ye	28	Female	3 years	Deductive and inductive method-practice-test
Ms.Qing	36	Female	12 years	Explanation-practice-test

3.3 Research Instruments

Test-retest is one of the most widely used techniques for check effect of the experiment. Difficulties of the pretest and the posttest were that two tests should have time interval, and students who take both pretest and posttest should have different differences in knowledge. In this study, all students haven't accepted any teaching about non-predicate verb before experiment, so this study firstly used pretest paper to test their non-predicate verb grammar before teaching; then after one-week learning, the study used posttest paper to test students again. Pretest paper and posttest paper have the same questions, but the order of questions on the posttest paper was rearranged randomly to avoid that students would finish the posttest according to their memories from pretest. Comparing results in two tests, the author can check whether microlecture and lecture notes can effectively assist in English grammar learning. Test-retest method used in pretest and posttest can insure the reliability of test.

As for questions in the test paper, this study referred to questions in university entrance exams, content of microlecture videos and lecture notes. The total number of the question was 21. There were 5 questions in easy level, 10 questions in the middle level and 6 questions in difficult level. This method of selecting the questions tried to ensure that the test scores may directly reflect the effect of microlecture and lecture notes.

3.4 Research Procedures

To ensure the objective reliability of this experiment, the specific experiment process was only known by experiment teachers, and teachers guided students to finish every procedure. Therefore, two classes of students completed the experiment under natural conditions. Specific procedures are as follow:

- (1) Before the experiment, three English teachers accepted interview and discussion about how to practically carry out this experiment.
- (2) All students were asked to take a pretest about non-predicate verb, and then their scores should be recorded to compare with scores in posttest.
- (3) Then come to Ms Xie's teaching period. Ms Xie said that non-predicate verb occurred in the Module 3, Book One and it also scattered in Module 2 and Module 4, Book Two. Because of unordered distribution, she would teach the only one point of non-predicate verb when it occurred. At the first lesson, she introduced the definition and the classification of non-predicate verb, and then she continued to teach about the *-ed* form according to examples in the Module 3 Book One.
- (4) After the first lesson of Ms Xie, she shared two microlecture videos to experiment group, and at the same time distributed two lecture notes to control group (as shown in APPENDIX V). In order to help students do self-learning actively, Ms Xie emphasized that all students should actively learn non-predicate verb with these two kinds of materials after class.
- (5) In Book One, there was no content about non-predicate verb except Module 3 and Module 7 Revision. Therefore, during the following week, students in two groups respectively used their materials to learn non-predicate verb by themselves after class.
- (6) One week later, all students took part in the posttest to check their learning effect after respective using

microlecture and lecture notes. Their scores were compared with scores in pretest to draw conclusions of this study.

(7) Next, nine students who were randomly selected from the experiment group and three teachers participated the interview.

In the end, data were collected and analyzed with the help of SPSS.

IV. Results And Discussions

This study adopted the control experiment, and two groups (control group & experiment group) were involved in the whole experiment. Therefore the analysis of test also contained three parts: (1) Control group (2) Experiment group (3) Comparison between control group and experiment group.

This study selected the total score and a question in the test paper to analyze. Question orders in posttest paper were rearranged. Therefore, the selected question was the 8th question in the pretest paper but was the 12th question in the posttest. The selected question was in the following:

(8)& (12) Tom took a taxi to the airport, only___ his plane high up in the sky.

A. finding B. to find C. being found D. have found

In addition, reasons for selecting this question:

(1) Grammar point tested in this question was “only to do”, which was taught in the microlecture video. (as shown in Figure 4)



Figure 4. Screenshot of microlecture video

(2) The degree of score variation in this question was remarkable between pretest and posttest, which will be discussed in the following parts.

4.1 Control Group

Before used the lecture notes about non-predicate verb, students in control group had taken part in pretest; then after used the lecture notes for one week, students have taken the posttest. Total score and score of that selected question were analyzed and showed in the following.

Total score (TS) Question (Q)

Table3. Paired Samples Statistics of control group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TS of pretest	8.44	43	3.893	.594
	TS of posttest	10.49	43	3.058	.466
Pair 2	8 th Q in pretest	.14	43	.351	.053
	12 th Q in posttest	.56	43	.502	.077

Table 4. Paired Samples Correlations of control group

		N	Correlation	Sig.
Pair 1	TS of pretest & TS of posttest	86	.483	.000
Pair 2	8 th Q in pretest & 12 th Q in posttest	86	.245	.023

Table 5. Paired Samples Test between pretest and posttest of control group

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	TS of pretest - TS of posttest	-2.442	3.907	.421	-3.279	-1.604	-5.797	85	.000
Pair 2	8 th Q in pretest & 12 th Q in posttest	-.512	.526	.057	-.624	-.399	-9.026	85	.000

According to the Paired Samples Test between pretest and posttest of control group, Table 9, Pair 1 Sig= 0.000< 0.05, which shows that there exists significant difference between pretest and posttest about total score. In addition, Table 5, Pair 2 Sig=0.000< 0.05 which shows that there exists significant difference between 8th question in pretest and 12th question in posttest.

- (1) Table 3 shows that mean of total score in pretest is 8.44, and mean of total score in posttest is 10.49, which indicates total score in posttest is remarkably higher than in pretest.
- (2) As for the selected question, mean in pretest is 0.14, while mean in posttest is 0.56, which shows score of selected question in posttest is much higher than in pretest.

4.2 Experiment Group

During the period of experiment, the experiment group used microlecture to learn non-predicate verb instead of lecture noted. And the analysis of total score and score of the selected question was in the following. Total score (TS) Question (Q)

Table 6. Paired Samples Statistics of experiment group

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	TS of pretest	9.74	43	4.671	.712
	TS of posttest	12.58	43	2.692	.411
Pair 2	8 th Q in pretest	.21	43	.412	.063
	12 th Q in posttest	.81	43	.394	.060

Table 7. Paired Samples Correlations of experiment group

		N	Correlation	Sig.
Pair 1	TS of pretest & TS of posttest	43	.781	.000
Pair 2	8 th Q in pretest & 12 th Q in posttest	43	.246	.112

		Paired Differences					t	df	Sig. (2-tailed)
					95% Confidence Interval of the Difference				
		Mean	Std. Deviation	Std. Error Mean	Lower	Upper			
Pair 1	TS of pretest- TS of posttest	-2.837	3.070	.468	-3.782	-1.892	-6.060	42	.000
Pair 2	8 th Q in pretest- 12 th in posttest	-.605	.495	.075	-.757	-.452	-8.015	42	.000

According to the Paired Samples Test on pretest and posttest of experiment, Table8, Pair 1 Sig= 0.000< 0.05, which shows that there exists significant difference between pretest and posttest about total score. In addition, Table 8, Pair 2 Sig=0.000< 0.05 which also shows that there exists significant difference between 8th question in pretest and 12th question in posttest.

- (1) Table 6 shows that mean of total score in pretest is 9.74, and mean of total score in posttest is 12.58, which indicates total score in posttest is much higher than in pretest.
- (2) As for the selected question, mean of pretest is 0.21, while mean of posttest is 0.81, which shows score of selected question in posttest is remarkably higher than in pretest.

4.3 Comparison between Experiment Group and Control Group

Total score (TS) Question (Q) Experiment group (1) Control group (2)

Table 9. Group Statistics between experiment group and control group

	group	N	Mean	Std. Deviation	Std. Error Mean
TS of pretest	1	43	9.74	4.671	.712
	2	43	8.44	3.893	.594
8 th Q in pretest	1	43	.21	.412	.063
	2	43	.14	.351	.053

TS of posttest	1	43	12.58	2.692	.411
	2	43	10.49	3.058	.466
12 th Q in posttest	1	43	.81	.394	.060
	2	43	.56	.502	.077

Table 10. Independent Samples Test between experiment group and control group

		Levene's Test for Equality of Variances		t-test for Equality of Means		
		F	Sig.	t	df	Sig. (2-tailed)
TS of pretest	Equal variances assumed	1.281	.261	1.405	84	.164
	Equal variances not assumed			1.405	81.362	.164
8 th Q in pretest	Equal variances assumed	2.930	.091	.846	84	.400
	Equal variances not assumed			.846	81.926	.400
TS of posttest	Equal variances assumed	1.258	.265	3.369	84	.001
	Equal variances not assumed			3.369	82.675	.001
12 th Q in posttest	Equal variances assumed	24.146	.000	2.628	84	.010
	Equal variances not assumed			2.628	79.456	.010

- (1) According to the Independent Samples Test between experiment group and control group, Table 14 shows Sig.=0.164>0.05 (total score of pretest) and Sig=0.400>0.05 (8th question in pretest), which indicates that in pretest, control group and experiment group have no significant difference in total score and the score of 8th question.
- (2) In posttest, Table 10 shows Sig. =0.001<0.05 (total score of posttest) and Sig. =0.010<0.05 (12th question in posttest), which indicates that control group and experiment have specific differences in total score and the score of 12th question.
- (3) As for experiment group, mean of total score rises from 9.74 in pretest to 12.58 in posttest; as for control group, mean of total score rises from 8.44 in pretest to 10.49 in posttest.
- (4) As for experiment group, mean of selected question rises from 0.21 (8th question in pretest) to 0.81 (12th question in posttest); as for control group, mean of selected question rises from 0.14 (8th question in pretest) to 0.56 (12th question in posttest).

As for the analysis of test results, both control group and experiment group have remarkable difference in total score and the score of selected questions between pretest and posttest, which indicates that both lecture notes and microlecture can effectively assist in English grammar learning. Comparing the variation degree of total score and the score of selected question, it is clear that microlecture's assisting effect is better than lecture notes.

V. Conclusion

5.1 Major findings

Two groups wouldn't accept other teaching about non-predicate verb except Ms Xie's teaching at the beginning of experiment. Then two groups respectively used microlecture and lecture notes to learn non-predicate verb after class, which insure that the only variable in the experiment was the way of leaning non-predicate verb after class. According to the result comparison between pretest and posttest, increasing score in experiment group directly reflects the microlecture's assisting effect. After using the microlecture, students developed their scores into a high degree. Therefore, it can prove the previous assumption of this study -- using micorlecture in assisting learning grammar can effectively work.

The first conclusion of Table 9 shows there is no significant difference between experiment group and control group in pretest, which indicates that there is no remarkable difference in English level. During the experiment, experiment group used microlecture to assist learning non-predicate verb, while control group used lecture notes. Comparing mean of total score between control group and experiment group, the author found that as for experiment group, mean of total score rose from 9.74 in pretest to 12.58 in posttest, thus the specific increasing score was 2.84. As for control group, mean of total score rose from 8.44 in pretest to 10.49 in posttest, therefore the specific increasing score was 2.05. What's more, comparing mean of selected question between control group and experiment group, the author also found that mean in experiment group rose from 0.21 (8th question in pretest) to 0.81 (12th question in posttest), thus the increasing score was 0.6. As for control group, mean of selected question rose from 0.14 (8th question in pretest) to 0.56 (12th question in posttest), therefore the specific increasing score was 0.42. From what have been shown above, a conclusion can be naturally drawn that the microlecture's assisting effect is better than lecture notes.

5.2 Pedagogical Implications

In this experiment, the content of microlecture was tightly related to the questions in the test paper, thus scores in the posttest could improve to a higher degree after watching microlecture videos. The more grammar points of questions on the paper were taught in the microlecture video, the greater progress students could make.

According to this experiment, this study strongly suggests that when teachers choose microlecture videos, they should try their best to choose the video which is related to the teaching content as much as possible. Additionally, during the period of interview, students in experiment group said that they preferred the microlecture, because of its vivid form of presentation and clear explanation.

After finishing the experiment, 9 students in experiment group were interviewed. When they were asked “why did you watch micorlecture after class?”, and six of them gave a practical answer, that is, Ms Xie told them after watching the microlecture video, they would take an exam to check the learning effect. Although the answer seemed superficial, that was a practical pressure for students. Therefore, we also suggest that after selecting certain microlecture, the teacher should set specific goals for students, which can supervise and urge students to watch microlecture video after class. Specific goals could not be all tests. Some vivid activities in class may be good choices for teacher, such as discussion the content of microlecture, presentation of microlecture by students themselves, and summaries of microlecture according to students’ memories, etc. These tasks could tell students before watching the microlecture, which may bring students some hints or give them pressure to watch the video more seriously.

References

- [1]. Andrew M. Colman. 2009. *A Dictionary of Psychology*. Oxford University Press.
- [2]. Berger, Kathleen Stassen .2008. *The Developing Person through the Life Span (7th ed.)*. Worth. p. 45.
- [3]. Boeree, C. 2006. *Abraham Maslow*. Webspaces.ship.edu. Retrieved 2012-10-21.
- [4]. Bouwmeester, Rianne A.M.2013. *Online Formative Tests Linked to Microlectures Improving Academic Achievement*. Medical Teacher, 35(12): 1044-1046.
- [5]. Ernst von Glasersfeld, E.1990. An exposition of constructivism: *Why some like it radical*.*Research in Mathematics Education – Monograph 4*: 19–29 & 195–210
- [6]. Hall, Eric & Carol Hall.1988. *Human relations in education Psychology* Press. p. 14.
- [7]. Holec H. 1981.*Autonomy and Foreign Language Learning*. Oxford: Pergamon Press
- [8]. Johnson, Eli. 2013. *The Student Centered Classroom: Vol 1: Social Studies and History*.
- [9]. Jones, Leo. 2007. *The Student-Centered Classroom*. Cambridge University Press.
- [10]. Kemmis & McTaggart R. 1988. *The Action Research Planner*. Geelong, Victoria: Deakin University Press
- [11]. LeRoy A. McGrew.1993 *A 60 -Second Course in Organic Chemistry*. Journal of Chemical Education,70(7):543-544.
- [12]. Ludwig von Bertalanffy.1973.*General System theory: Foundations, Development, Applications*, George Braziller, Inc, fourth printing
- [13]. McLeod, S. A. 2012. *Piaget Cognitive Theory. Simply Psychology*. Retrieved September 18
- [14]. Power, B. F. C., Nuzzi, R. J., Narvaez, D., Lapsley, D. K., & Hunt, T. C. 2009. *Moral education: a handbook. Journal of Moral Education, 38(1), 109-110*.
- [15]. Shea, P., & Bidjerano, T. 2009. *Community of inquiry as a theoretical framework to foster “epistemic engagement” and “cognitive presence” in online education*. Computers & Education, 52(3), 543-553.
- [16]. Sweet, D. (2014). *Microlectures in a flipped classroom: application, creation and resources*. Mid-Western Educational Researcher, 26, 52-59.
- [17]. Tobias, S. & Duffy, T. M. 2009. *Constructivist instruction: Success or failure?* New York: Taylor & Francis.
- [18]. Vygotsky, L. S. (1978). *Mind in Society: The development of higher psychological processes*. Cambridge: Harvard University Press. Chapter 6 Interaction between learning and development (79-91).
- [19]. Wagner, Robert W. Edgar Dale .1970. Professional. *Theory into Practice*. Vol. 9, No. 2, Edgar Dale, pp. 89-95