

Research Report on Application of the Flipped Class Model Based on Micro-course in the Oral English Teaching of Universities

Taking the Oral English Teaching of Wuchang Shouyi University as an Example*

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Abstract—With the popularization and acceleration of internet and the changing functions of mobile learning terminals, resources has becoming increasingly related to people's life, and the educational reform arises. In March 2012, the Ministry of Education issued the Ten Year Development Planning of Information-based Education (2011-2020) to implement "Three Accesses and Two Platforms" (schools' access to broadband network, classes' access to high-quality access and people's access of online learning space, the two public service platforms of educational resources and educational management). In June 2016, the 13th Five-Year Plan of Information-based Education issued by the Ministry of Education raises, "stick to integrated innovation and improve the efficiency of information-based education; insist on deepening application and release the role of information technology in the educational and teaching reform and development". Pushed by the policy, universities nationwide are wild about the information-based educational reform and try all kinds of the internet plus independent learning models, such as blending learning and flipped class teaching. This project tries to conduct empirical research on college English teaching through micro-course-flipped class teaching on the basis of the mobile digital management platform and explore how to effectively execute the brand-new teaching model of micro-course-based flipped class through doing experiment on non-English majors.

Keywords—micro-course; flipped class; oral language teaching; practice research

I. RESEARCH BACKGROUND AND SIGNIFICANCE

A. Research Background

1) *The traditional English teaching model faces reform:* The sharp rise of internet has influenced the learning environment of several generations and changed their learning model. The traditional teaching is increasingly weak in meeting the requirements of student group.

2) *The identity of teachers changes gradually:* In the era

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of information explosion, students need correct searching and the reestablishment of knowledge structure, so students need teachers to guide them find appropriate resources and build learning framework to gradually internalize knowledge.

3) *Teaching objects are called the emerging human of "Z" generation:* They are deft at multithreading working, capturing information and care about social networking but have no directions in real life. The key to solve the problem is to integrate teaching and internet and carry out the interaction between teaching and network in class to reach the purpose of interacting with students.

4) *The new requirements of college English course:* Training application-oriented talents is the major objective of English teaching reform in universities, according to the newest course requirements of college English teaching issued in 2015. The teaching model turns from the focus on examination-oriented teaching to the centering on training the transfer ability of students, and the classroom pattern should be student-centered and no longer teacher-centered. Micro-course and flipped class model are just suitable for the requirements of current English teaching reform.

5) *The traditional teaching materials have been unable to adapt to students at different levels:* The traditional textbooks have detailed knowledge structure and are convenient for students to build a complete structure. However, the soaring development of internet will make knowledge fragmented. It is convenient and timely for students to directly find out answers via network according to their needs. Students will not depend on contents on the textbook and the learning pattern will become more independent and individualized.

B. Research Significance

The teaching model of information-based education can be described as follows: It is student-centered and learners give full play to the enthusiasm in the learning environment such as situation, collaboration and conversation created by teachers, conduct meaning construction via knowledge learnt and solve practical problems through what they have learnt (Zhu Zhiting,

2000). The micro-course and flipped class teaching model is a brand-new perspective. In this model, micro-course is used to help teachers realize mass teaching (such as present teaching information) and help students to finish pre-class learning, classroom collaborative learning and conversation. It serves as a cognitive tool for students to realize proactive learning, collaborative exploration and significance construction as well as solve practical problems.

II. THEORETICAL BASIS

A. "Micro-Course" Is "Micro Video Online Course"

According to the requirement of foreign language teaching, micro-course is defined as the micro-video of teaching activities that have the duration of 3 to 5 minutes and complete structure, involve some knowledge point or micro-skill and are carried out by teachers to improve teaching efficiency (Lin Li, 2017). On the basis of concepts defined in different ways and the characteristics of foreign language teaching, micro-course suitable for the classroom teaching of foreign language can be divided by teaching contents and teaching forms.

In terms of teaching contents, micro-course can be divided into three types: The first type is the micro-courses involving skill learning. The videos consist of the learning contents of language knowledge skills, such as phonetic learning and grammar. The second type is the micro-courses involving knowledge expansion, which consists of extracurricular supplementary knowledge related to textbook knowledge, and the major function is expansion and supplement such as vocabulary development history, etc. The third type is the micro-course of guiding reflection that raises questions via contrast or event description and lets students learn knowledge point and acquire critical thinking skills.

In terms of teaching forms, micro-course can be divided into two types: The first type is the fragment of demonstrated class, namely the fragmented video of excellent class shot by others in the teaching process. The second type is a fragmented video of some knowledge point (key points, difficult points and exercises, etc.) recorded by teachers via screen recording software.

Micro-course has become an important part of teaching resources in common use because it is easy and fast to make, search and spread and has small capacity, and the contents are semi-structured and easy to recombine and expand. At present, micro-courses have been applied to different learning forms such as flipped class, extracurricular independent learning, remote learning and mobile learning; at the meantime, it also support the implementation of independent, collaborative, exploratory and situational learning pattern of constructivism.

B. The "Flipped Class" Model Reverses the Traditional Teaching Model Involving the Teaching Habit That Students Listen to the Teachers' Explanation in Class and Do Homework after School

The origin of the combination between micro-course and it is the tremendous free teaching videos uploaded on YouTube by Salman Khan, the initiator of Khan Academy, in 2011, and the teaching videos are popular among students and parents.

The high-quality teaching videos freely provided by Khan Academy have overcome the important barrier to implement flipped class. It has greatly reduced the threshold for teachers to enter flipped class and promoted the popularization of flipped class.

C. Relevant Researches at Home

Since the popularization of flipped class teaching model, a large number of teachers and scholars at home are doing the teaching practice of flipped class. Wang Binhong (2014) proposes the learning of college students should concentrate on independent learning in order to let students develop better in the extracurricular learning of discussion-based teaching. Lu Haiyan (2014) has designed a teaching model of "flipped class" on the basis of micro-course. She has mainly analyzed the feasibility of applying the new-type teaching model to college English teaching. Meanwhile, she has reached the conclusion that the teaching model can effectively make up for the deficiencies of the existing college English teaching model.

III. MAIN CONTENTS AND OBJECTIVES

A. Main Contents

The research aims at implementing the flipped class teaching model based on micro-course on non-English majors in universities and exploring whether the model can promote the independent English learning of students at different levels and improve the ability of spoken English, such as how to transform "information transfer", the first step of classroom learning process focused by traditional teaching into "absorption and internalization", the important link of learning in the classroom teaching process by way of micro-course, how to apply classroom to teacher-student interaction, peer collaboration and communication and independent learning, etc. Then, it strengthens students' learning enthusiasm and ability of independent learning and improves their language output ability of spoken English through different teaching contents according to students with different English learning requirements.

B. Problems to Be Solved in the Project

- Different requirements brought about by the difference of English levels between college students.

In this regard, students can make use of the time after class to learn and consolidate knowledge ahead of time through micro-course, and then internalize knowledge through the effective interaction and communication of flipped class and teachers' guidance.

- In the era with rapid development of information, we can realize the flipped class model based on micro-course through the mobile digital teaching platform to conduct the brand-new college English teaching.
- In the new classroom teaching model, we can intensify the interaction between teachers and students in class and prolong the time for teaching and learning through maximizing the "pre-learning time", in order to realize

the deep internalization of knowledge and improve learning efficiency.

C. Target Expected to Be Reached

Non-English majors in colleges have obviously improved the ability of independent English learning and language application through the flipped class teaching model based on micro-course, especially in the aspect of spoken English.

IV. RESEARCH METHODS

A. Investigation

In the initial stage of the project, the investigation on the classification teaching of college English course with micro-course as the platform mainly adopts such methods as questionnaire survey, interview, test and classroom observation; related conclusions are reached through data analysis.

B. Practice Research

In the middle stage of the project, organizational strategies such as task-based teaching involving problems or projects, learning of design group and game-based learning are implemented and formative evaluation is conducted on learning.

C. Experimental Research

In the later stage of the project, experimental groups are arranged to try out the experimental comparison before and after micro-course flipped class and small-range questionnaires and interview between teachers and students.

V. RESEARCH STEP

A. Initial Stage (Jun. 2015 To Sept. 2015)

The author has looked up and collected information and books related to the research and have designed a questionnaire survey before project implementation, and it is realized by virtue of "technology reception model". The questionnaire mainly understands students' understanding and requirements of micro-course flipped class from two aspects of "usefulness" and "availability". In September 2015, I distributed 219 questionnaires in some specialties of four departments of Wuchang Shouyi University, and all have been collected, with the recovery rate of 100%; a total of 195 valid questionnaires exist, with the effective rate of 89%. The result of data shows:

1) *With regard to the understanding of functions of the "flipped class"*: 36 percent of students show they do not understand, and 34 percent of students say they know little about it. Most students expect to experience or deeply experience the flipped class teaching. It is obvious that most students hold a positive attitude toward the application of flipped class on the whole.

2) *In terms of the understanding of functions of "micro-course"*: 89 percent of students say they do not understand, and 13.6 percent of students know some about it. In addition,

when asked about whether they are willing to learn through micro-courses, 61.1 percent of students show they are willing to and 8.6 percent of students say they would love to. Obviously, most students are willing to try micro-courses.

3) *Understanding about the current learning problems*: 52 percent of students do not have the habit of previewing before class; 67 percent of students have ordinary and not so abundant resources before class; 90 percent of students are absent-minded in the traditional class; 76 percent of students are anxious about English learning. It shows the traditional English class teaching model should be adjusted and changed properly;

4) *The degree of receiving new teaching methods*: 75 percent of students prefer the combination of traditional class and network class; 62 percent of students are willing to try the teaching model of micro-course—flipped class. It shows most students are looking forward to the new teaching model.

5) *Recognition degree of classroom activities*: 81 percent of students think it will be helpful for learning through the combination of classroom discussion and group cooperation; 83 percent of students are willing to participate in classroom interaction. This shows students well support the implementation of classroom activities and discussions.

From the perspective of usefulness, sophomores in the university affirm the value of flipped class and its facilitation of school, teachers, students and courses; from the perspective of availability, most of the students hold relatively rational attitudes toward the implementation of micro-course—flipped class on the whole. They think it is feasible to implement the flipped class but sufficient research and publicity should be conducted in the process of concrete implementation. According to the investigation and analysis, although the time spent by teachers in teaching in class is reduced, it still needs teachers to carry out overall dominance and design of the arrangement of the whole teaching process, and teaching links such as the organization of teaching activities in classroom before class and interaction with students. In this way, teachers are still playing a dominant role. The research shows because college students have a relatively high ability of independent learning and the network infrastructure are well guaranteed, micro-course—flipped class is more advantageous in the learning autonomy and transfer, compared with the traditional teaching. What's more, it has significance on college teaching reform and improving teaching effects. Therefore, the application and promotion of micro-course—flipped class has prominent availability.

B. Experimental Stage (Sept. 2015 To Jun. 2016)

1) *Homogeneity analysis and pre-test*: The research objects of oral English course in this project are two advanced classes and six parallel classes of grade 2014; the experimental classes of grade 2014 are advanced class 1, accountant 1407, law 1402, computer science and technology 1401; the corresponding control classes are advanced class 2, electrical engineering 1402, marketing 1401, computer science and technology 1402. Experimental class and control class have the equivalent level before the experiment: the test

results of independent t show, 1) No significant difference exists in the final examination of college English in the third term of grade 2014 ($P>.05$).

TABLE I. NO SIGNIFICANT DIFFERENCE IN THE FINAL EXAMINATION OF COLLEGE ENGLISH IN THE THIRD TERM OF GRADE 2014 ($P>.05$)

| Experimental Class—Control Class | t | df | Sig. (Both Sides) |
|---|--------|----|-------------------|
| Advanced class 1 — Advanced class 2 of grade 2014 | -1.589 | 25 | .125 |
| Accountant 1407—Electrical engineering 1402 | -1.673 | 30 | .105 |
| Law 1402—Marketing 1401 | 1.975 | 20 | .062 |
| Computer science and technology 1401—Computer science and technology 1402 | .667 | 32 | .510 |

No significant difference exists in the oral test of experimental class and control class before the experiment ($P>.05$).

TABLE II. NO SIGNIFICANT DIFFERENCE IN THE ORAL TEST OF EXPERIMENTAL CLASS AND CONTROL CLASS BEFORE THE EXPERIMENT ($P>.05$)

| Experimental Class—Control Class | t | df | Sig. (Both Sides) |
|---|--------|----|-------------------|
| Advanced class 1—Advanced class 2 of grade 2014 | -2.016 | 26 | .054 |
| Accountant 1407—Electrical engineering 1402 | .748 | 28 | .461 |
| Law 1402—Marketing 1401 | -.106 | 15 | .917 |
| Computer science and technology 1401—Computer science and technology 1402 | .493 | 32 | .626 |

2) *Experimental process of listening and speaking courses:* The experimental class adopts the micro-course—flipped class teaching model, while the control class adopts the traditional listing and speaking teaching model. The teaching duration and learning materials are the same. Two differences exist in the teaching of control class and experimental class: First of all, the control class does not have the link of “micro-course” to input knowledge points, but in consideration of the factor of fairness, teachers will teach contents in micro-course ahead of time in class. In the second place, before the flipped class, the teacher of the experimental class will read and appraise and diagnose students’ homework of micro-course and present the results to students before class, in order to lay a good foundation for the learning of flipped class; the control class also has the appraisal and diagnosis of teachers, but does not has related discussion and the process of consolidating knowledge again after the teacher teaches knowledge.

Both the experimental class and the control class have related knowledge of learning oral expressions: Describe places and events and express their opinions through the contrast of things and dialogues. After the learning of 14-week courses finishes, students of grade 2014 take the test of spoken English for degree uniformly and the questions of the same level have been adopted. The voice band of them is taken as sample of after-test.

204 samples of spoken English for grade 2014 have been collected before and after the experiment, including 102 samples of pre-test and after-test of experimental class, 102 samples of after-test of control class. The samples are analyzed according to the following two steps:

Read and appraise. After samples are collected, the order is disrupted. Grading of each class is done by two teachers of listening and speaking jointly according to the language, contents and logic of oral expression. Teachers adopt 50-score system (10=very poor; 20=poor; 30=so so; 40=good; 50=excellent) in grading and inspect whether the wording of language is accurate and rich; the contents inspect whether the expression of language is complete; the logic of expression inspect whether students can explicitly describe contents in oral expression and whether the expression is clear.

Score statistics. SPSS 17.0 statistical software is adopted to carry out the independent sample t test and the inter-group contrast analysis for the total scores of spoken English of experimental class and control class.

The result shows, 1) no significant difference exists in the oral proficiency of students in advanced class 1 and advanced class two belonging to the experimental class of grade 2014 ($P>0.05$); 2) significant difference exists in the oral proficiency of students in the three experimental classes and three control classes belonging to the parallel class of grade 2014 ($P<0.05$).

TABLE III. DIFFERENCE IN THE ORAL PROFICIENCY OF STUDENTS IN ADVANCED CLASS 1 AND ADVANCED CLASS TWO BELONGING TO THE EXPERIMENTAL CLASS OF GRADE 2014 ($P>0.05$) AND IN THE ORAL PROFICIENCY OF STUDENTS IN THE THREE EXPERIMENTAL CLASSES AND THREE CONTROL CLASSES BELONGING TO THE PARALLEL CLASS OF GRADE 2014 ($P<0.05$)

| Experimental Class—Control Class | t | df | Sig.(Both Sides) |
|---|--------|----|------------------|
| Advanced class 1—Advanced class 2 of grade 2014 | -1.346 | 23 | .191 |
| Accountant 1407—Electrical engineering 1402 | 1.993 | 28 | .036 |
| Law 1402—Marketing 1401 | -2.323 | 14 | .016 |
| Computer science and technology 1401—Computer science and technology 1402 | 2.403 | 32 | .022 |

3) *Analysis of research result:* The experimental result shows no significant difference exists in the total scores of English speaking and writing of students in the advanced class of grade 2014. It is probably because students take class in the evening, which is difficult for the implementation of practical activities of flipped class. The class has limited influence on students’ participation in oral English activities and fails to arouse students’ interests in proactively practicing language. Besides, the limitation of experimental design has also influenced the full exertion of the advantages of flipped class: in the first place, the content setting of micro-course is inclined to the teaching of basic knowledge to guarantee the knowledge points have moderate difficulty, so it does not take the language competence and learning needs of students in advanced classes into consideration. In the second place, on account of the restriction of contents, the design of activities

in flipped class is more suitable for the level of parallel class, so it fails to enable students of advanced class to realize independent learning more effectively. The teaching time of parallel class of grade 2014 is in the morning or in the afternoon. Students have high participation, the key and difficult points involved in micro-course are easy to accept, and it is more advantageous to conduct practical activities of flipped class, so students' abilities are improved obviously.

C. Result Analysis (Sept. 2016 to Dec. 2016)

According to the result of stage analysis executed in the experiment, we have designed a questionnaire survey after project implementation and investigated the feedback of students after they take micro-course—flipped class from two aspects of “effectiveness” and “interactivity”. In September 2016, we distributed 203 questionnaires in relevant specialties of four departments in Wuchang Shouyi University, collecting 203 questionnaires, with the recovery rate of 100%; there are 203 valid questionnaires and the effective rate of questionnaire is 100%.

The data result shows:

1. Feedback on the effects of “flipped class”: 23.6 percent of students show the flipped class model enables them to participate in classroom discussion more efficiently, 46.31 percent agree with that. After experiencing the flipped class teaching, most students hold an affirmative attitude toward the application of flipped class on the whole.

2. Feedback on the service condition of “micro-course”: 25 percent of students say they are enthusiastic about watching videos before class, 49.25 percent of students like it. Besides, 41.8 percent of students say they frequently play the videos that are difficult for them to understand repeatedly, and 35.96 percent of students say they do this in most of the time. It is evident that micro-course is helpful to the independent learning of students.

3. Feedback on the combination of micro-course and flipped class model: for example, when we say having the requirement of flipped class can improve the efficiency of learning micro-course, 24.14 percent of students cannot agree more, and 52.2 percent of students agree to some extent; when we say the flipped class model can make students participate in classroom discussion more efficiently, 23.65 percent of students cannot agree more, and 46.31 percent of students agree; 66 percent of students address they are more confident in grasping basic knowledge through learning micro-course. Obviously, the model of combining micro-course and flipped class can effectively stimulate students' enthusiasm of learning and promote their independent learning.

4. Degree of accepting new learning resources: 88 percent of students say various teaching resources (documents and videos) provided before class can meet learning requirements; 86 percent of students say watching videos recorded and finishing tasks arranged on micro-course is of vital importance for successful participation in classroom activities. It is evident that most students affirm the resources of new teaching model and its effects.

5. Feedback on the activities and evaluation mechanism of flipped class: 74 percent of students agree that the group comment and teachers' comments in class are helpful for the learning of knowledge points; 61.3 percent of students think they benefit a lot from the mutual evaluation system of homework assigned on the micro-course. It can be seen that students are pretty sure about classroom activities and evaluation system.

6. With regard to the learning experience, 76 percent of students are satisfied about the teaching design used by teachers in micro-course and flipped class; 60 percent of students think the micro-course—flipped class model has stimulated their interests in learning college English course; 28.57 percent of students very support that at least one activity of micro-course—flipped class exists in each unit, and 44.83 percent of students support relatively; compared with the traditional classroom teaching, 22.66 percent of students think the learning efficiency is very high and timely finish teachers' tasks on the basis of understanding, and 59.61 percent of students say the learning efficiency is relatively high and they can finish tasks on time. Students' learning efficiency and participation degree are improved obviously through the new teaching model.

7. With regard to the learning forms in the micro-course—flipped class model, 27.59 percent of students like pre-class learning plus group discussion, 9.8 percent of students like pre-class learning plus personal report, 40.89 percent of students like pre-class learning plus personal report plus group discussion, and 20.96 percent of students like pre-class learning plus teachers' teaching; in terms of the preference for the duration of micro-course, 10.84 percent of students think the relatively appropriate duration of micro-course is 1 to 3 minutes, 23.15 percent of students think the appropriate duration micro-course is 3 to 5 minutes, 22.17 percent of students think the appropriate duration of micro-course is 10 to 15 minutes, and 7.39 percent of students think the appropriate duration of micro-course is 15 to 20 minutes.

From the perspective of effectiveness, most of sophomores in this university on the whole have affirmed the learning effects brought by the micro-course—flipped class model and its role in independent learning; from the perspective of interactivity, most students are supportive of the activity design of micro-course—flipped class and the evaluation mechanism in class. In addition, the teaching objective of the interaction between teachers and students and between students has been reached.

In the research process, the teaching platform of Moso Teach is adopted in this project to carry out formative evaluation on students more effectively. By virtue of this platform, teachers can timely check students' situation of learning micro-course and learning resources released before class, and appraise the knowledge learnt by students before class according to various activities on the platform, timely adjusting classroom activities and improving students' participation degree. A number of classroom activities such as group activity, test, brainstorm, discussion and QA and classroom performance can be realized on the platform of Moso Tech. After the end of the semester, teachers can clearly

see each student's situation of participating in activities and learning materials. They can sort order automatically according to students' degree of participation and scores. It is very convenient for teachers to management and has more effectively realized the interaction between micro-course—flipped class teaching model and the learning of students.

VI. PROBLEMS EXISTING IN THE RESEARCH AND FUTURE CONCEPTION

In the research of “the Application of the Flipped Class Model Based on Micro-course in the Oral English Teaching of Universities”, the teaching model, methods and countermeasures raised by the project team have trained students' ability of independent learning and knowledge internalization and group collaboration, manifested the “student-centered” teaching idea in the era of internet and attracted intensive attentions of peers. Meanwhile, it has made certain achievements and formed the new model of fragmented learning. However, the effects of this model on the construction of knowledge system and framework are not significant. Although the teaching platform plays a role in supervision and timely interaction, it fails to effectively guide logical thinking in training students' ability of knowledge construction and recombination.

VII. CONCLUSION

In future teaching, we can try to comprehensively use different platforms to enhance the teaching effects of micro-course—flipped class model, integrate fragmented learning and systematic learning and train students' learning ability from different perspectives and improve their foreign language level. Besides, in the ability test of output, we should use more scientific and diversified evaluation methods, such as diagnostic evaluation, formative evaluation and summative evaluation. In this way, we can better promote teachers' teaching and students' learning through the flipped class model and truly achieve the effect that teaching benefits teachers as well as students.

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