

Research on Flipped Classroom Teaching of Business English Translation Based on Big Data

Xiaohan Zhou

School of Foreign Languages, Xi'an Shiyou University, Xi'an, China

14969680@qq.com

Abstract. Based on the rapid development of Internet technology in the era of big data, this paper conducts research on flipped classroom teaching of Business English translation by referring to the previous research results of flipped classroom teaching mode and combining with the teaching experience of translation course. It explains the necessity and feasibility of flipped classroom teaching in the course of Business English translation, especially in the context of big data, and probes into its teaching breakthrough such as the resource renewal, innovation of the teaching process and learning methods, and innovation of teaching evaluation. It also elaborates the tasks of teachers and students in each stage, and puts forward some new ideas for the flipped classroom teaching mode from six aspects: video production, teaching logic design, preparation of learning materials before class, classroom teaching design, classroom problem solving, and after class evaluation. Compared with traditional Business English translation teaching, flipped classroom teaching greatly improves the teaching effect and quality, and helps to achieve the matching of Business English translation teaching with market demand and current technical requirement. It is hoped that this paper can offer some useful reference for the reform of Business English translation course.

Keywords: Flipped classroom; Business English translation; Big data; Teaching mode

1. Introduction

As the science and technology develops fast, mobile Internet, cloud computing and smart phones have been gradually integrated into all aspects of people's lives, which fully illustrates the arrival of the era of big data. With the widespread popularity of e-Schoolbag, electronic textbooks, iPad and other new technology applications, educators and teachers have realized that there is an internal relationship between the advance of science and technology and flipped classroom teaching mode. Due to the fact that conventional teaching mode cannot adapt to the needs of the market and modern times, flipped classroom teaching provides some new perspectives in the course of Business English translation. In the research, this paper explores the connotation of the flipped classroom teaching and its necessity and feasibility in the Business English translation class. It further proposes some new ideas for the flipped classroom teaching from the following aspects such as video production, teaching logic design, preparation of learning materials before class, classroom teaching design, classroom problem solving, and after class evaluation. With the usage of advanced technology applications in the big data era, flipped classroom teaching can improve the renewal of teaching resources and the innovation of learning and teaching methods, which not only enhances students' critical thinking ability and problem-solving skills, but also promotes the whole teaching efficiency

and quality. The analysis and proposals in this paper may offer some inspiration or guidance in the teaching mode of Business English translation.

2. The Connotation of Flipped Classroom Teaching Mode

The students' learning process is interrelated with the internalization of knowledge. According to Piaget's research, knowledge internalization is divided into two processes: assimilation and adaptation. Assimilation means that learners bring new knowledge from outside into their own knowledge structure; adaptation means that learners change their existing knowledge structure to adapt to new knowledge content. However, according to the research on students' free fall concept by American professors Petitto and Dunbar, the process of knowledge internalization can be further divided into three types: assimilative knowledge internalization, adaptive knowledge internalization and progressive knowledge internalization. There are two characteristics of progressive knowledge internalization: if the correct concepts appear repeatedly in different scenarios, the probability of wrong concepts will be reduced; the process of knowledge internalization is not achieved overnight, but gradually, little by little.

Flipped classroom teaching mode and knowledge internalization theory are inextricably linked. Flipped classroom originated from the "video course" advocated by American Khan Academy, which has attracted great attention of educators and scholars around the world. Flipped classroom is to achieve the goal of knowledge internalization by "flipping" the roles of teachers and students. In the conventional teaching process, teacher is the center of the classroom; while students passively accept knowledge in class and mainly complete the task of knowledge internalization by completing the homework assigned by the teacher after class. Instead, students in the flipped classroom are no longer passively being taught but actively seek knowledge, and complete the learning task through three ways of knowledge internalization.

The teaching process of flipped classroom is usually divided into three steps: the first step is the guiding question stage. According to the students' knowledge reserve, teachers put forward problems related to new knowledge, and mobilize students to use existing knowledge to analyze and assimilate new knowledge. This is the "warm-up" stage of teaching. The second step is the video viewing stage. This stage of teaching must be built on the basis of the first stage, that is, through the internalization of new knowledge, teachers let the students clearly know their cognition of new knowledge, with questions to watch the video, further internalize new knowledge, and then put forward new questions. The third step is problem solving. Compared with the traditional teaching process where this stage is completed by homework after class. The stage is "flipped" to the class, and the teacher is no longer the center of classroom teaching but the participant of classroom discussion. Teachers collect problems in class, classify similar problems, and then send them back to students. Through group discussion, students are encouraged to solve problems independently.

3. The Present Situation of Traditional Business English Translation Teaching

3.1 Teaching Content Does Not Match the Demand of Market. In the traditional Business English translation teaching, teacher needs to have a wealth of relevant professional knowledge. For example, students need to master a lot of knowledge about international trade, securities, bulk commodity trading, exchange rate and foreign exchange, laws and regulations, international business regulations, etc. At the same time, Business English translation involves professional English translation. Whether it is English Chinese translation or Chinese English translation, it must be used in terms of writing format, stylistic features and oral standards, and meets the psychological

needs and communication needs of business objectives. This kind of extremely strict translation requirement is almost impossible to achieve in the traditional teaching class, where both textbooks and teaching cases have lagged behind the actual situation of market development. Some teachers have even been using the teaching courseware more than ten years ago. As a result, many students are out of touch with the reality in learning translation skills, which is extremely incompatible with the translation market demand at this stage.

3.2 Teaching and Evaluation Methods Do Not Match the Needs of Modern Times. In the fast-growing modern times, Internet as the main media of information age has gone deep into the university students' study and lifestyles, who have got used to and greatly dependent on the electronic devices like mobile phones and laptops. In the conventional Business English translation class, however, some teachers still adopt the detailed explanation of the textbook knowledge to the students and do not know how to effectively use the new information technology in teaching, which is seriously out of step with the times. In addition, students' academic performance is evaluated only by examinations, which lacks the objective measurement of students' learning process and translation ability. Under the background of big data, the students' actual mastery of knowledge can depend on various channels or data. Thus, the traditional teaching and assessment methods cannot adapt to the demands of modern times.

4. The Necessity and Feasibility of Flipped Classroom in Business English Translation Class

Business English translation course is mainly about the analysis of business text characteristics, the application of translation skills, translation practice and so on. Based on the consideration of teaching content, teachers generally use the teaching method of explaining skills and characteristics in class combined with translation examples, and students try to complete relevant translation exercises after class. This traditional teaching method aims to enable students to initially master translation skills and business text characteristics through the teacher's classroom explanation, that is, to preliminarily internalize the knowledge. Through the completion of homework, students will apply the learned translation skills to translation practice, and then complete the secondary internalization of knowledge. Traditional teaching methods have played a part in teaching translation skills. However, because Business English translation is a "language output" based course, the simple knowledge of translation skills and business texts cannot meet the requirements of students in translation practice, and cannot fully help students solve the problems encountered in translation practice. For example, there is no direct connection between translation skills and some translation practice; then students show low interest and enthusiasm in learning because students are still unable to complete translation practice after learning translation skills.

In view of the above problems, Business English translation course must be reformed. The appearance of big data provides the possibility for the reform of Business English translation course, and the development of flipped classroom teaching mode brings new perspectives to the course reform.

4.1 The Connection between Big Data and Flipped Classroom. In the past few years big data has been widely used and become a hot spot in the world, which is quite useful in storing and using data for analysis. Big data analysis can collect a large amount of data and conduct in-depth analysis, so as to reveal the inherent laws hidden in the underlying data. To apply big data analysis to flipped classroom teaching, it is firstly necessary to collect students' learning behavior data, such as students' online learning time, learning progress, learning results, etc. and then structurally process these data to build its own student behavior database. After that, big data analysis tools are used to analyze the

data, dig out the hidden rules, and thus provide useful information and strategies for the real implementation of the teaching mode of flipped classroom.

4.2 Teaching Breakthrough of Flipped Classroom Based on Big Data.

Innovation of Teaching Resources Renewal. In the flipped classroom teachers are required to prepare teaching resources ahead of time, and then upload them on the Internet for students to download and learn. Relying on big data technology, teachers can update and renew teaching materials and courseware cases in time through the Internet, so that students can freely acquire the latest knowledge of translation. As to the same teaching materials, teachers can design different teaching cases for different-level students to learn in the network learning. It not only expands the space of classroom teaching practice, but is also conducive for teachers to teach according to individual and achieves the individualized teaching. Therefore, flipped classroom teaching mode greatly improves the teaching resources preparation and promotes the upgrading of translation knowledge of all students.

Innovation of Teaching Process and Learning Methods. In the flipped classroom, teachers have more choices in their teaching methods; meanwhile students possess more learning channels and opportunities, who even can select courses and teachers according to personal preferences. For instance, flipped classroom teaching mode puts more emphasis on students' learning before class and practicing in class, which reverses the traditional teaching process. In this way, students can make good use of their free time to do the preview work of the course and master some latest knowledge of Business English translation before class. In class, students have much time to practice and innovate. They can answer the questions offered by teachers or solve some practical problems in translation of Business English in the form of group discussions. Teachers are just the participants of group discussions, responsible for guiding and evaluating students' performance and creativity. This kind of teaching mode can enhance the interaction between teachers and students, and also help to cultivate the creative thinking and problem-solving ability of students. Moreover, depending on the big data technology, the data about the difficult points of exercises and students' mastery of translation knowledge can be collected in the hands of teachers timely and then more innovation about teaching reform and learning methods will come into the classroom.

Innovation of Evaluation Methods. On the basis of big data, a major breakthrough has been made in the evaluation methods of the flipped classroom teaching. In the flipped classroom, teachers can easily use the Internet applications for course teaching and conduct an immediate evaluation on the learning outcomes of students. Meanwhile, teachers can draw inferences about the students' mastery of knowledge and the range of difficult points from the data such as the time period of video playback and the test scores. They can also set up some evaluation indicators such as the students' learning time, learning progress and quiz scores, which are helpful to make an objective assessment of student' learning situation. In this way, the flipped classroom based on big data can realize network evaluation and input students' regular online learning performance as part of students' final assessment, which is more comprehensive and convincing in teaching evaluation.

In a word, compared with conventional teaching mode, the center of flipped classroom is transferred from teachers to students, which can fully mobilize learners' enthusiasm and initiative in learning. Moreover, flipped classroom shifts the focus of teaching content from knowledge transfer to students' problem solving, which contributes to solving students' problems in translation practice, so as to help students adapt to or assimilate the knowledge of translation skills. From the above analysis, we can see that flipped classroom with the usage of big data technology can help students to accept new knowledge more effectively and cultivate their creativity and problem-solving ability, which is quite necessary and feasible in Business English translation class.

5. Proposals on the Flipped Classroom Teaching Mode in Business English Translation Course

Flipped classroom teaching mode cannot be simply understood as watching video after class and solving problems in class. The design of teaching mode must consider teaching objectives, teaching process, learners' knowledge reserve and other factors, so teachers must design teaching mode scientifically. Here some ideas and proposals are put forward on the flipped classroom teaching mode in the course of Business English translation.

5.1 Video Production. Video viewing is an important part of students' learning before class. Compared with a quite formal classroom video, micro video is more suitable for flipped classroom because its time is much shorter and its recording forms are more various. However, teachers still have to spend a lot of time on the technology of recording micro videos. The author thinks that with the usage of big data technology the characteristic demonstration class can be made by the teachers themselves, and the videos suitable for a semester or a course can be made by the teaching group, or purchased by the school or by inter school cooperation.

5.2 Teaching Logic Design. The flipped classroom teaching design needs a set of rigorous teaching logic systems under the background of big data. Flipped classroom is not just a procedure change, however, it contains the content that teachers should take charge of and the activities that students should participate in. Besides, flipped classroom can adopt big data technology to design a feasible and all-sided teaching platform. For example, nowadays many colleges and universities adopt MOOC platform to provide public course resources for students, but they are restricted to the copyright of teaching resources and students' privacy protection. In this case, they could create their own teaching platform with the technology of big data, or design and use it jointly by some other universities. The teaching logic design can start from pre-class preparation and classroom teaching, and formulate an effective system of learning, communicating and group working in combination with the actual situations of Business English translation. The specific logic design diagram is shown in Figure 1.

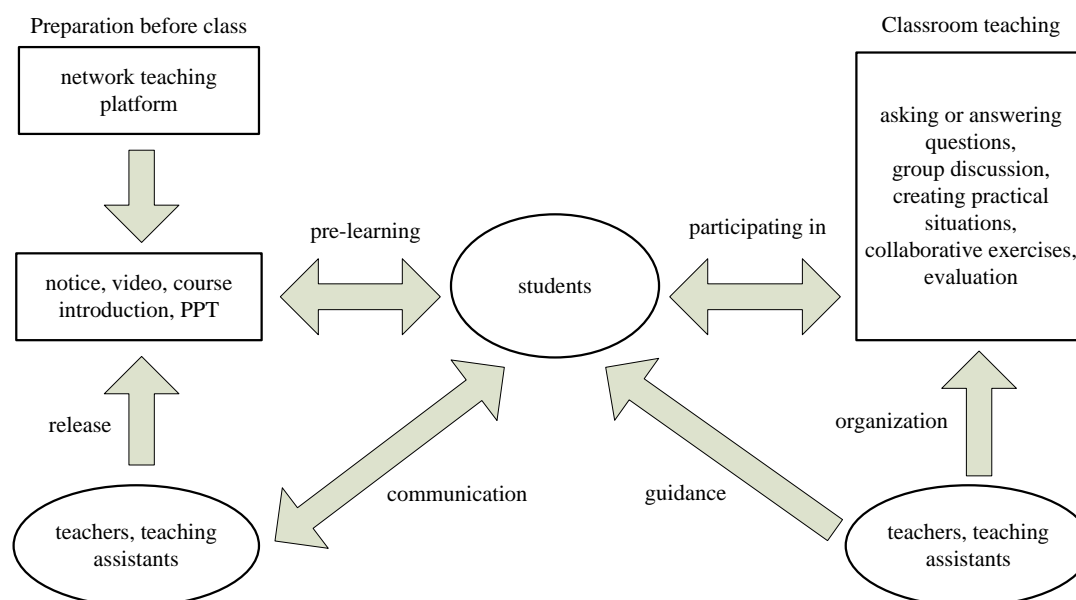


Figure 1. The logic design of flipped classroom teaching in Business English translation class

5.3 Preparation of Learning Materials before Class. The preparation of learning materials before class is not only a crucial basis of flipped classroom teaching, but also a key part of the whole teaching process of Business English translation. The difficult point of this course is how to

make the translation theories and knowledge fit some practical business situations such as product marketing, business laws and regulations and management rules, etc. For example, with regard to the translation activities of financial institutions, teachers can put the translation of some terms of financial market, financial regulations, securities and names of commercial banks into the basic translation knowledge base in the courseware. In addition, in view of the grammar knowledge required by the textbook, some translation skills about how to transform Chinese and English sentence structure, how to use attributive clause and etc. should also be supplemented in the courseware before class. The courseware can highlight some key learning materials of Business English translation such as specific terms of international trade, vocabulary with Chinese characteristics, specific contract and legal terms and sentences, etc. Moreover, some questions and tasks can be designed in the recorded courseware, so that students can be able to put the knowledge learned into practice. To eliminate cheating problem the question bank can be used to randomly select questions or exercises based on the platform database.

In a word, the compilation of learning materials before class should follow the following principles: the contents of learning materials and micro videos complement each other; it should obey the learning rules from easy to difficult; the learning materials should include some questions and exercises related to the course contents.

5.4 Classroom Teaching Design. Business English translation involves the translation of business letters, government documents, commercial advertisements, product description, enterprise profiles, business contracts, financial securities, tourism texts and so on. This rich teaching content can be prepared through the online videos or platforms before class. The flipped classroom teaching can assess the performance of students' early learning and then choose the appropriate teaching methods in class based on the big data technology. In the class, teachers can decide the teaching content according to the teaching objective and students' early learning achievements, and design the group discussion or translation groupwork to solve the problems discovered and summarized in pre-class stage. Taking 30 students in each class as an example, they choose 5-6 students as a group to cooperate, and decide on their own division of labor and translation content. According to the summarized problems, they can query professional reference books to analyze and try to solve them existing in the practical translation situation. Meanwhile, teachers can give some guidance or advice in the students' translation activities as consultants, but the final decision rests with students.

In addition, students can conduct groupwork through various ways to seek the help and advice from teachers. For instance, the establishment of QQ group and WeChat group, etc., can help students ask for online support and cooperation. Students can integrate various ways and channels to improve their level of self-translation, then fully practice and do the translation exercises, understand and flexibly grasp the knowledge in the actual process of translation, instead of learning all kinds of theories by rote and learning the knowledge of Business English translation rigidly.

5.5 Classroom Problem Solving. Classroom problem solving is a significant part of testing the first stage of knowledge internalization, and also the second stage of knowledge internalization. Teachers should firstly summarize the content of micro video before class, identify and collect students' problems, and finally send the problems back to students to solve independently or through group discussion. Teachers and students can exchange their roles. Teachers can be students, and students can be teachers. For instance, students can further understand and consolidate the knowledge gained through watching videos by explaining knowledge to teachers. The application of this flipped mode is quite flexible. It can also be that students learn first and put forward some questions, and then teachers give the detailed explanations by answering the questions.

5.6 After Class Evaluation. Evaluation after class is also an indispensable part of teaching

system. It is not just the assessment of students' learning outcomes, but also the reference for future teaching improvement. Teachers in the flipped classroom can evaluate students by combining the actual performance in class with the online learning performance before class. Relying on the big data technology, teachers can design some evaluation indicators such as the students' learning time, learning progress and quiz results to make a relatively objective assessment of students' online learning before class. In the real classroom teaching, students' performance in the group discussion and practical translation activities can also be scored and evaluated by teachers. At last, teachers will calculate the final score of students' comprehensive academic performance according to their online learning performance, their real performance in class, their scores of some assignments, and their scores of middle and final examinations, etc. This kind of evaluation is apparently more objective and fairer for the students, compared with the conventional teaching mode. Besides, with the technology of big data, some problems about students' learning can also be evaluated and summarized for the improvement of future teaching.

6. Conclusion

With the fast development and popularization of data application technology based on big data, China's higher education has adopted the new technology to innovate the present teaching mode and has promoted the overall teaching efficiency and quality. Based on the big data, the flipped classroom teaching mode has been widely used and accepted in colleges and universities as a new attempt of teaching practice. It has made great progress in the teaching resource renewal, innovation of the teaching process and learning methods, and innovation of teaching evaluation, which can provide more data analysis support for schools and teachers. Compared with the conventional teaching mode, flipped classroom can greatly improve the teaching effect, which ultimately achieves the matching of some courses such as Business English translation with market demand. Therefore, with the usage of modern teaching technology, more and more professional and innovative college students will be cultivated and new achievements will be made in Chinese higher education.

References

- [1] Laura-Ann Petitto & Kevin Dunbar: *New Findings from Educational Neuroscience on Bilingual Brains, Scientific Brains and the Educated Mind* (National Academy Press, Washington, D.C. 2004).
- [2] Gillette C, Rudolph M, Kimble C, Rockich-Winston N, Smith L, and Broedel-Zaugg K: *American Journal of Pharmaceutical Education*, Vol. 82 (2018) No.5, p.6898.
- [3] Smith KM, Geletta S, and Duelfer K: *Journal of the American Podiatric Medical Association*, Vol. 110 (2020) No.5, p.11.
- [4] Vanka A, Vanka S, and Wali O: *European Journal of Dental Education*, Vol. 24 (2020) No.2, p.213.
- [5] Sohn S, Lee YM, Jung J, Cha ES, and Chun BC: *Korean J Med Educ*, Vol. 31 (2019) No.2, p.103.
- [6] Jian Qiang: *The Electronic Library*, Vol. 37 (2019) No.5, p.842.
- [7] Sergis S, Sampson DG, and Pelliccione L: *Computers in Human Behavior*, Vol. 78 (2018) No.3, p.368.
- [8] M Khayat, F Hafezi, P Asgari, and MT Shoushtari: *Journal of Medical Education*, Vol. 19 (2020) No.3, e110069.
- [9] Supiani M D, Arifani Y, and Asmana C H.: *Journal of English Teaching Literature and Applied Linguistics*, Vol. 4 (2021) No.1, p21.