# Evaluation of the Effect of Flipping Classroom in the Teaching of Marketing 

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#### Abstract

The flipped classroom is proposed compared to traditional teaching, and its core is flipping. This flip has two main meanings: one is the flipping of the content, that is, the content taught in the teacher's class and the content of the student's learning after class; the second is the flipping of the role, that is, the role of the student and the teacher in the classroom. This research introduces the teaching concept of flipped Classroom into the teaching practice of Marketing. After two academic years, an empirical study of 220 students in four majors (e-commerce, tourism management, Marketing, accounting) found that the new teaching method not only improved students' interest in the subject, but also improves the ability of students to learn independently. At the same time, this teaching method has also been recognized and loved by students.


## Research Background

Flipped classroom is also called reversed classroom. Jonathan Bergmann and Aaron Sams, two chemistry teachers at Forest Park Middle School in Colorado, USA, first adopted the flipped teaching mode in class. [1] The core idea of the reversed classroom is to reverse the process of knowledge imparting and knowledge internalization. This mainly includes three aspects. First, the reversal of the role in class. In the traditional class, the teacher is the leading role and the students are the supporting role. Flipping the classroom is just the opposite. Teachers are supporting roles and students are leading roles. Second, the reversal of content. Traditional teaching, teachers lecture in class and students review and do assignment after class. Flipped classroom is exactly the opposite. Students do their homework and teachers answer questions in class, but teacher's lectures can be completed after class by issuing courseware or videos in the student's learning group. Third, the purpose of teaching is reversed. Traditional teaching focuses on imparting knowledge, aiming at students' acquisition of knowledge. The purpose of flipped classroom is to stimulate students’ interest in learning and enhance students' autonomous learning ability. [2]

Regarding the contents of examination, researchers, especially those in the US, have focused mainly on applied research. The areas of research have been concentrated mostly in science and engineering disciplines.[3] Some of Chinese scholars have applied this teaching mode in their own classrooms. At college and university level, flipped classroom has been largely used some subjects such as information technology and college English courses. [4] In this study, we employ quantitative research methods to explore the effects of flipped classroom in a Marketing course. This research allows us to obtain empirical data from the students, as well as provide results that might benefit other scholars of similar interest.

## Research Purpose and Significance

The purpose of this paper is to assess whether applying the teaching concept of "flipped classroom" to the teaching of Marketing can enhance students' autonomous learning ability, stimulate interest and improve academic performance. In the same time, it will create a new way for lecturing class.

Research Contents: Course design, teaching evaluation methods, etc.

Research Methods: Empirical research method.

## Teaching Results Evaluation and Testing

Successful teaching is mainly reflected in two aspects. The first is reflected in the students' mastery of the knowledge of the course, and the second is reflected in their interest levels in the course. This study evaluated the effectiveness of the new teaching method from these two aspects by using students' test scores and their self-reported interest in the course. Further, student's self-learning ability and teacher satisfaction scores were also obtained.[2]

## Research Process

The research process is divided into three processes. The first process is the design of Marketing teaching model. The second process is a final exam of the students. The third process is to survey student satisfaction.

## The Design of Marketing Teaching Model[4]

Role Swapping. In classroom, Students lead; teachers facilitate. Teachers ask questions; students study, discuss, and answer questions. Students and teacher co-manage the classroom. In this link, the allocation of time is the key. One-third of the time in class is allocated to teachers and two-thirds to students.

Process Design. First, Marketing is a highly applied discipline. It is mainly used to solve the relationship between company, product (service), customer and society. Therefore, the entire book can be designed into a story. That is, a company encounters various problems in the course of its operations. How to solve these problems with the marketing theory they have learned is the key. The chapters in the book can be designed in such a way that companies use different methods to solve problems that the company encounters at different times. This can also be seen as a recombination of case teaching methods.

Second the students are grouped according to the principle of voluntary participation. The purpose of grouping is to provide a discussion group for students to stimulate their enthusiasm for learning, to help each other in the learning process, and to facilitate each student to participate in learning

Third, the teacher provides theoretical knowledge and learning support. For example, we establish an online learning instant message group, such as QQ group, where professor can share courseware, homework answers, and instant feedback before or after class.

## Student Achievement Assessment Results

The assessment of the results was based on the results of the final bare test. The number of Grade 15 undergraduate students majoring in E-commerce was 55 . The average score of the final exam was 81 , the passing rate was $100 \%$. Grade 15 undergraduate students majoring in Tourism Management had 46 students. The average score of the final exam was 80 , the passing rate was $100 \%$. Grade 17 students majoring in Marketing had 60 students. The average score of the final exam was 75 , the passing rate was $100 \%$. Grade 18 students majoring in accounting had 59 students. The average score of the final exam was 81 , the passing rate was $94.92 \%$. The scores distribution appeared as follows:

Table 1. Final exam score distribution

| class |  | Fractional segment | $\left[\begin{array}{c}\text { 100-90 } \\ ]\end{array}\right.$ | (90-80] | (80-70] | (70-60] | (60-0] |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | (grade) | (excelle <br> nt) | (good) | $\begin{array}{\|c\|} \hline \text { (mediu } \\ \mathrm{m}) \end{array}$ | Pass (\%) | failed |
| Grade 15 <br> undergraduate students <br> majoring in <br> E-commerce  | 81 | $\begin{gathered} \hline \begin{array}{c} \text { Number of people } \\ \text { (55) } \end{array} \\ \hline \end{gathered}$ | 8 | 25 | 18 | 4 | 0 |
|  |  | percentage(\%) | 14.55 | 38.18 | 40 | 7.27 | 0.00 |
| Grade 15 <br> undergraduate students <br> majoring in Tourism <br> Management | 80 | Number of people (46) | 8 | 21 | 8 | 9 | 0 |
|  |  | percentage(\%) | 17.39 | 45.65 | 17.39 | 19.57 | 0.00 |
| Grade 17 students majoring in Marketing | 75 | $\begin{array}{\|c} \hline \begin{array}{c} \text { Number of people } \\ (60) \end{array} \\ \hline \end{array}$ | 2 | 22 | 9 | 19 | 0 |
|  |  | percentage(\%) | 3.85 | 42.31 | 17.31 | 36.54 | 0.00 |
| Grade 18 students majoring in accounting | 81 | $\begin{aligned} & \text { Number of people } \\ & \text { (59) } \\ & \hline \end{aligned}$ | 1 | 20 | 23 | 12 | 3 |
|  |  | percentage(\%) | 1.69 | 33.90 | 38.98 | 20.34 | 5.08 |

## Empirical Analysis: Student Study Interest, Self-learning Ability and Teaching Satisfaction Survey

The Survey Object. 55 E-commerce major students, 46 Tourism Management major students, 60 Marketing major students, 59 major students, total of 190 people.

The Purpose of the Survey. First, was the student interested in the course? Second, had students' self-learning ability been improved? Third, did students like to flip the classroom?

Research Content. After the introduction of the teaching method of flipping classroom, we wanted to know whether the students' learning interest, and learning ability and their satisfaction with teaching have been improved.

Research Method. Online questionnaire survey method. In the process of learning the course, we set up a statistical learning QQ group.

Questionnaire Content. It consisted of two parts, student background information and survey content. The background questions asked about student gender, major, test scores The research content was measured with the 5 -point Likert type scale, where $1=$ Strongly Disagree, $2=$ Disagree, 3 = Neutral, 4 = Agree, and $5=$ Strongly Agree. The questions asked students to what extent they had an interest in the course, to what extent their self-learning ability had been improved, and to what extent they preferred the main teaching method. The details are as follows:

Table 2. Research content

| Interest in <br> statistics | Like teaching materials, easy to understand |
| :---: | :--- |
|  | Clearer than other course materials |
|  | The content of the course is completely mastered |
| Self-learning <br> ability, | Ability to analyze and solve problems increased by |
|  | Self-learning ability has been improved |
|  | Teamwork ability has been improved |
| Satisfaction <br> with the <br> teaching <br> method | Improved expression skills |
|  | I like this teaching method more teachers also use this method of teaching |
|  | More willing teachers to adopt a student-led approach to teaching |

Descriptive Statistical Analysis. The number of valid questionnaires collected for this survey was 144, accounting for $65.45 \%$ of the total number of students. The statistical results are as follows:

Table 3. Summary of the basic situation of students

|  | category | frequenc | percentag <br> e | Effective percentage | Cumulative percentage |
| :---: | :---: | :---: | :---: | :---: | :---: |
| gender | 0=Girl | 91 | 63.2 | 63.2 | 63.2 |
|  | 1=boy | 53 | 36.8 | 36.8 | 100 |
|  | total | 144 | 100 | 100 |  |
| Education | 1=Undergraduate | 100 | 69.4 | 69.4 | 69.4 |
|  | 2=College | 44 | 30.6 | 30.6 | 100 |
|  | total | 144 | 100 | 100 |  |
| Student source | 1=urban | 23 | 16 | 16 | 16 |
|  | 2=rural | 121 | 84 | 84 | 100 |
|  | total | 144 | 100 | 100 |  |
| achievement | $1=>91$ | 28 | 19.4 | 19.4 | 19.4 |
|  | $2=>81$ | 64 | 44.4 | 44.4 | 63.9 |
|  | $3=>71$ | 37 | 25.7 | 25.7 | 89.6 |
|  | $4=>61$ | 12 | 8.3 | 8.3 | 97.9 |
|  | 5=Other | 3 | 2.1 | 2.1 | 100 |
|  | total | 144 | 100 | 100 |  |
| major | 1=E-commerce (undergraduate) | 55 | 38.2 | 38.2 | 38.2 |
|  | $2=$ Tourism (undergraduate) | 45 | 31.3 | 31.3 | 69.4 |
|  | 3=Marketing(Junior College) | 16 | 11.1 | 11.1 | 80.6 |
|  | 4=Accounting Junior College) | 28 | 19.4 | 19.4 | 100 |
|  | total | 144 | 100 | 100 |  |

Among 144 students participated in the survey, of which 53 were males, accounting for $36.8 \%$ of the total number, 91 were females, accounting for $63.2 \%$ of the total number. 100 students were undergraduates accounting for $69.4 \%$ of the total number, 44 were college students, accounting for $63.2 \%$ of the total number. 23 students came from urban areas, accounting for $16 \%$ of the total; 121 students came from rural areas, accounting for $84 \%$ of the total; 92 students scored above 80 , accounting for $63.9 \%$ and the number of failures was 3 , accounting for only $2.1 \%$ of the total; There were 55 students majoring in E-commerce, accounting for $38.2 \%$ of the total number and 45 students majoring in tourism management, accounting for $31.3 \%$ of the total. There are 16 students majoring in Marketing, accounting for $11.1 \%$ of the total and 28 students majoring in accounting, accounting for $19.4 \%$ of the total.

Table 4. Summary of project scores

| category | project | N | Mean | Category mean |
| :---: | :---: | :---: | :---: | :---: |
| Learning interest | 12. I like this textbook, easy to understand. | 143 | 3.33 | 3.31 |
|  | 13. The textbooks of this course are written more clearly and clearly than the textbooks of other courses. | 143 | 3.34 |  |
|  | 14. I have mastered the content of this course. | 143 | 3.02 |  |
|  | 15. I hope that I have the opportunity to learn about the knowledge and issues related to the course. | 143 | 3.54 |  |
| Self-learn ing ability | 16.Through the study of this homework, I found that my self-learning ability has been improved. | 143 | 3.46 | 3.52 |
|  | 17. Through the study of this homework, I found that my self-learning ability has been improved. | 143 | 3.45 |  |
|  | 18. During the course of learning this course, I found that my teamwork ability has been improved. | 143 | 3.57 |  |
|  | 19. Most of the courses are going to take the stage to express their views and find that their ability to express is improved. | 143 | 3.59 |  |
| Satisfacti on with the New Teaching Method | 20. I hope that other teachers will use this teaching method to teach other courses (by student-led, group discussion, teacher-oriented counseling). | 143 | 3.42 | 3.43 |
|  | 21. I prefer this teaching method to the traditional teaching method (teacher, classmates, and homework). | 143 | 3.4 |  |
|  | 22. If I were to choose a teaching method, I would prefer the teacher to adopt this student-led teaching method instead of the traditional teaching method. | 143 | 3.65 |  |
|  | 23. If you don't use this method, but use the traditional way of attending this course, I will be disappointed. | 143 | 3.29 |  |
|  | Valid n (list state) | 143 |  |  |

Compared with the group median value of 3 , the scores of all items were larger than 3 . In order to facilitate the comparison, the sub-items of each indicator were averaged to obtain the scores of the three indicators. The scores of the three indicators were $3.31,3.52$ and 3.43 which were higher than the median score of 3 .

Reliability Test of Questionnaire. The reliability test of this study is based on the calculation of Cronbach's alpha.

Table 5. Reliability Marketing

| Cronbach's <br> Alpha | Number of items |
| :--- | :--- |
| .930 | 12 |

Table 6. Questionnaire Reliability Test

| index | project | Cronbach coefficient |
| :---: | :---: | :---: |
| Interest i <br> Marketing | Like the textbook is easy to understand | 0.82 |
|  | in Clearer than other course materials |  |
|  | The content of the course is completely mastered |  |
|  | I want to know more about the course. |  |
| Autonomous learning ability | Improved ability to analyze and solve problems | 0.923 |
|  | Self-learning ability has been improved |  |
|  | Teamwork ability has been improved |  |
|  | Improved expression skills |  |
| Satisfaction <br> with <br> teaching <br> method <br> the I hope other teachers also use this method of teaching. |  | 0.849 |
|  |  |  |
|  |  |  |
|  |  |  |

As can be seen from the above two tables, the Cronbach's Alpha of the total project of the questionnaire was 0.93 , indicating that the reliability of the scale was high. The reliability of the indicator of "autonomous learning, ability" was 0.923 , very high. The reliability of the indicator of "interest in Marketing" and "satisfaction with the teaching method" were 0.82 and 0.849 . The reliability was acceptable as Cronbach's alpha was higher than 0.80 .

## Means Test <br> Single Sample T test

Table 7. Single sample T test

| item |  | Test value $=3$ |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | t | df | Sig. | Mean Differen се | 95\% confidence interval for difference |  |
|  | mean |  |  |  |  | Lower bound | Upper bound |
| Interest in Marketing | 3.3059 | 4.607 | 142 | . 000 | . 30594 | . 1747 | . 4372 |
| Self-learning ability | 3.5192 | 6.779 | 142 | . 000 | . 51923 | . 3678 | . 6706 |
| Satisfaction with the teaching method | 3.4388 | 5.891 | 142 | . 000 | . 43881 | . 2916 | . 5861 |

As shown in Table 9, the mean value of each item was larger than that of the group median 3. As shown in Table 9, the observed differences from the median in all three variables were also statistically significant, because the $p$ value calculated for the $t$-tests were 0.000 respectively, which were all lower than 0.05 . Thus, from the survey results, students were satisfied with the new teaching methods, students' interest in learning was high, and their self-learning ability had been improved.

## Independent Sample Test and One-way ANOVA

Table 8. Independent Samples T-Test and one-way ANOVA

| Independent Samples T-Test |  |  |  | ANOVA |  |
| :--- | ---: | ---: | ---: | ---: | :---: |
|  | Gender | Education | Student <br> source | Examination <br> result | professional |
|  | Sig. | Sig. | Sig. | Sig. | Sig. |
| Interest in <br> Marketing | equal variance assumed | 0.476 | 0.644 | 0.064 | 0 |
| equal variance not <br> assumed | 0.49 | 0.654 | 0.074 |  | 0.307 |
| Self-learni <br> ng ability | equal variance assumed | 0.059 | 0.365 | 0.21 | $\underline{0.001}$ |
| equal variance not <br> assumed | 0.055 | 0.37 | 0.206 |  | $\underline{0.259}$ |
| Satisfactio <br> n with the <br> teaching <br> method | equal variance assumed | 0.563 | 0.586 | 0.149 | 0.345 |

As can be seen from the above table, gender, education and student source did not affect students' scores on the three variables, because the $p$-values associated with the three $t$-tests were all greater than 0.05 . The level of test scores affected the students' scores of "interest in Marketing" and "self-learning ability. Because the multi-factor analysis of variance found that the $p$-values calculated by the mean equation were 0 and 0.001 , respectively, less than 0.05 . While professional did not affect students' scores on the three variables, because the $p$-values associated were greater than 0.05 .

## Conclusions

In conclusion, introducing the teaching concept of flipping classroom into the teaching of Marketing, more than $60 \%$ of the students have achieved excellent academic results. At the same time, students' interest in the subject and their ability to learn independently have also improved. In addition, the teaching method has also been recognized and loved by students. We also found that students' satisfaction with this type of teaching was not affected by the gender, professional, academic qualifications, source, and academic performance of the students. However, students with excellent academic performance felt that their abilities were higher than those of other students in terms of "disciplinary interest" and "self-learning ability". These results indicate that using flipped classroom in Marketing teaching brings win-win outcomes for both the teacher and students.

In the past four years, we have not only introduced the teaching method of flipping classrooms into "Marketing", but also introduced the method into "Statistics" and "Financial Statistics and Analysis" earlier, all of which achieved the same good effect. Therefore, we can initially judge that it is a good attempt to introduce the teaching concept of flipping classroom into the applied discipline of economic management, because the common characteristics of these three lessons are all applicable disciplines. Our research will continue. We hope that the above research results might benefit other scholars of similar interest.

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