

**Changing Teacher's Teaching Behavior to Improve Classroom Teaching Effectiveness
Through ODI (Organization Development Interventions) :
An Action Research at College of International Business (CIB), in Zhejiang
Yuexiu University of Foreign Languages (ZYUFL), in China**

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Abstract

Based on the analysis and intervention of CIB in ZYUFL teachers' teaching behavior, this paper aims to improve the classroom teaching effectiveness, including teachers' teaching outcome and students' learning outcome. First, it designed an interview outline for the research topic with business schoolteacher before the formal formulation of the intervention program. Second, we have consulted the contents about the effect of classroom teaching in colleges and universities at home and abroad, and fully understood the importance of improving the quality of classroom teaching. Third, the paper reviews about the main variables such as teachers' teaching behavior and teaching effectiveness. It puts forward the theoretical framework, conceptual frame of this study work and action research framework. It uses 360-degree evaluation method to evaluate teachers' teaching behavior and teaching effectiveness. Fourth, the intervention program aimed at changing teachers' teaching attitude, teaching content and teaching methods is designed, and the concrete method of data collection is formulated. Fifth, through ODI for 7 months, the data has been collected before and after the intervention. Excel and SPSS were used to analyze the data. Through mean analysis, teachers' teaching behavior and teaching effectiveness have been significantly improved. Through paired sample analysis with the control group, the change of teachers' teaching behavior is significant, but the evaluation gap of teaching effectiveness, especially the students' learning outcome is not obvious. Finally, the relevant research is prospected and suggested, and the short comings of this research are pointed out.

Keywords: teaching behavior, teaching effectiveness, intervention, organization development

Introduction

World-wide expansion and popularization of higher education globally have changed the focus from quantitative expansion to consolidation of gains of expansion with improvement in quality. Quality Assurance has emerged as the prime concern of higher

educational development. But the basis for evaluating and measuring the quantity and quality of work of colleges and universities relate to (1) Quality and Quantity of inputs supplied and used in education system; (2) Quality of process/mechanism of transforming inputs into output; and (3) Quantity and Quality of Outcomes of operations of higher educational processes. Most of these facets are manifested by the behavioral traits of both teachers and students. But the teachers play the key or pivotal role in the process of improvement in the learning-teaching quality of colleges and universities. Flynn (2015) believes that teacher is the motive force of educational change and social progress, and that teachers play a key role in the reform and development of teaching. This is the educational consensus of the international community at present.

According to the situation of undergraduate education in China, the country and society are very concerned about the quality of undergraduate talents training, and the Ministry of Education of China has issued a series of documents. ZYUFL is aware of the problems existing in the classroom teaching, and the school's teaching office has also carried out a series of activities to create Gold Course and eliminate Water Course. As CIB, from expert evaluation, teacher interview, student discussion and so on, there are many problems in classroom teaching, and needing to change and improve, otherwise, it will bring serious problems like that of the reducing number of students.

The curriculum is the last kilometer to improve the quality of undergraduate teaching, and the teacher is the most critical link. The change of teacher's teaching behavior is, therefore, focus of the quality of teaching. It not only concerns the development of students' learning and ability, but also concerns the professional development of teachers themselves.

This paper mainly studies how to improve the teaching effectiveness in classroom through changing teaching behavior. It is very necessary for the college to solve the problem of classroom teaching effectiveness through action research, and to realize the core goal of improving the quality of talent training and social competitiveness of the college.

Status Quo of the Focal Organization

From the website, College of International Business (CIB) is established in 2004, after years of development, there are 5 majors in business administration, international business, logistics management, e-commerce and management and application of big data. There are more than 2200 students and 72 teaching staff. CIB is located in Jinghu Campus.

CIB is to cultivate the students with five basic capabilities, as the ability of foreign language application, the ability of professional practice, the ability of employment and entrepreneurship, the ability of career development, and the ability of social adjustment, and cultivate the practical and high quality talents with globalized insights, on business, and who

can deal with modern commercial business activities, for the economic development of Zhejiang Province or even Yangtze River Delta Area.

The Problem in Classroom of CIB

For the finding of solutions to the problems faced in classroom teaching, diagnosis of the nature and causes of the problems is required. From the experts, graduates and teachers' feedback, classroom teaching still has a lot of room for improvement.

The opinions of the experts mainly focus on the fact that the content of the syllabus needs to be further improved. Teachers design the teaching contents and teaching methods according to the students' situation, improving the students' learning enthusiasm, and change the students' learning attitude. CIB should have corresponding measures to improve and encourage teachers to invest more energy in teaching.

Students' opinions mainly reflect students' expectations of teachers in the classroom. Through teachers' teaching, they can really learn knowledge and improve their practical ability.

The content of the teacher interview mainly reflects that the teachers are not satisfied with the current college incentive and evaluation system for teaching, which leads to the low enthusiasm of teachers in teaching. In addition, it also reflects that the lack of learning goals is also a reason for the current classroom teaching effectiveness.

Research Objectives

Through the research of teaching behavior, teaching effectiveness and the theory of organization development, the research objectives are to change teachers' teaching behavior to improve teaching effectiveness through ODI at CIB, in ZYUFL.

- (1) to make clear what is teaching behavior and how to measure it.
- (2) to make clear what is teaching effectiveness and how to measure it.
- (3) to design ODI methods to improve teaching behavior.
- (4) to prove the effectiveness of ODI.
- (5) to prove the relationship between teaching behavior and teaching effectiveness.

Research Questions

This study is mainly carried out to find answers to the following questions:

- (1) What is teacher's teaching behavior in this study? What are the dimensions about current status of teacher's teaching behavior and how to measure it?
- (2) What are the factors and their indicators of measurement about the effectiveness in classroom teaching?
- (3) What are the ODI methods and how are these methods used to change teachers' teaching behavior?

(4) Does the teacher's teaching behavior change after implementation of ODI? In other words, has there been any change in the effectiveness of classroom teaching after the implementation of ODI'?

(5) Is the teacher's teaching behavior related to classroom teaching effectiveness?

Research Hypotheses

This study tests the following assumptions:

Ho1: There is no change in teacher's teaching behavior before and after ODI.

Ha1: There is change in teacher's teaching behavior before and after ODI.

Ho2: There is no change of classroom teaching effectiveness before and after ODI.

Ha2: There is change in classroom teaching effectiveness before and after ODI.

Ho3: The change of teacher's teaching behavior has no influence on the classroom teaching effectiveness.

Ha3: The change of teacher's teaching behavior has a positive influence on the classroom teaching effectiveness.

Ho4: The change of teaching attitude has no influence on the classroom teaching effectiveness.

Ha4: The change of teaching attitude has a positive influence on the classroom teaching effectiveness.

Ho5: The change of the teaching method has no influence on the classroom teaching effectiveness.

Ha5: The change of teaching method has a positive influence on the classroom teaching effectiveness.

Ho6: The change of the teaching content has no influence on the classroom teaching effectiveness.

Ha6: The change of the teaching content has a positive influence on the classroom teaching effectiveness.

Literature Review

Teaching Behavior

Kratz (1896) researched on characteristics of teachers' personality; he had pioneered the research on teachers' teaching behavior. He examined the opinions of numerous scholars, researchers, and thinkers about the characteristics of personality of excellent teachers in American society for the development of the scale of personality characteristics of excellent teachers. He published the article titled "Characteristics of Recognized Excellent Teachers for

Children" in the Education Forum in June 1896. This had promoted the researchers' enthusiasm for the study of American teachers' personality survey.

Researchers have focused on the study of characteristics of the personality of teachers as the base of teachers' behavioral efficiency; the studies had also turned to teachers' cognition and knowledge that affect teaching behavior. The situational effect on teaching behavior has also got attention of researchers. The research on Teaching Behavior has followed the trend of evolution from macro to micro, from phenomenon to internal cause, from group behavior to individual behavior, from quantitative study to qualitative research. Some scholars summarized the course of teaching behavior research abroad as "process-result" paradigm, "cognition-development" paradigm and "context - understanding " paradigm. (Gai & Zheng, 2010).

According to the description of the above literature, this study limits the teaching behavior subject to the teacher and studies the influencing factors of the teacher's teaching behavior change from the perspective of the teacher behavior subject. Through the intervention of ODI, the transformation process of teacher's teaching behavior is revealed.

Teacher's teaching behavior is external activities and internal psychological response based on teaching experience, teaching concept ,and teaching ability, according to teaching objectives, teaching requirements, and the needs of teaching situation. The external activity performance and the internal psychological reaction are the two components of the teacher's teaching behavior.

The internal psychological reaction is the problem of teachers' teaching attitude towards teaching behavior, and it is the source of why teachers do so. Teachers' teaching attitude dominates the direction and path of teacher's teaching behavior. The external activity performance is mainly reflected in the teaching method (how to teach) and the teaching content (what to teach).

Teaching Effectiveness

Kratz (1896) surveyed more than 2000 students in Grade 2 and Grade 8; he showed that efficient teachers had the following characteristics: enthusiasm, sparkling personal charm, moderate sense of humor, strong adaptability and flexibility, profound knowledge of disciplines they taught, and high expectations from students.

Fox's experimental study found that no matter what the teacher taught, college students insisted that the attractive and expressive teachers were effective in teaching. (Naftulineetal,1973)

According to the research of Thomas L. Good and Jere E. Brophy, there were also differences in the teaching results of teachers with different behavior systems; besides, the results were different because of the different learning contents and opportunities offered to

students by teachers. Teaching effectiveness increased through active teaching, active guidance, and interaction with students, rather than by instructing students to do their homework. (Zhen & Wang, 1998)

Clark and Peterson (1986) examined the relationship between teaching effectiveness and structuring, soliciting, and reacting, he found that teachers clearly present the contents of the teaching materials, provide feedback to students on their answers and correction of incomplete or wrong answers; these facets can make the teaching content more structured; Lower-level problems have a positive correlation with students' scores, even for more difficult teaching contents.

The study by Stephen, Harry, and Rushton (1985) confirmed that classroom teaching effectiveness was the intermediary between the personality of university teachers and the effect of college teaching. Chickering and Gamson (1989) put forward following seven principles of excellent undergraduate teaching.

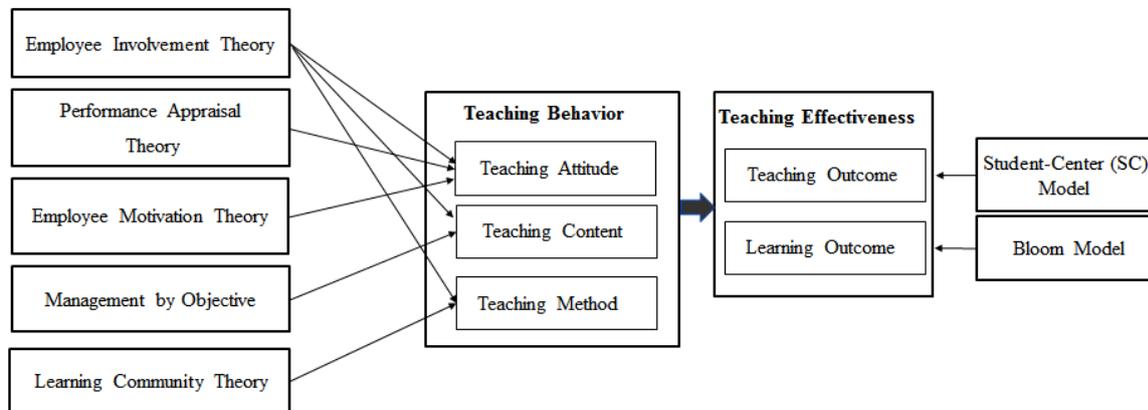
From the above literature, there are two basic orientations of teaching effectiveness: first, teacher's teaching behavior orientation. It is more defined from the perspective of teacher's teaching behavior and teaching skills. Second, students' achievement orientation. It is considered that effective teaching refers to the fact that teachers guide students to successfully complete the predetermined learning goals and can effectively improve students' academic achievement and realize the development of students in all aspects.

Theoretical Framework

The purpose of the study is to change the teaching behavior of teachers and improve the effectiveness of classroom teaching by using the theory and method of OD. After the above analysis, the key point of changing teaching behavior of CIB lies in teachers' teaching attitude, the content of teaching and the teaching methods of teachers. Through the above theoretical analysis, the theoretical framework model of this study is shown in Figure 1.

Figure 1

Theoretical Framework of the Study



Conceptual Framework

According to the previous analysis, there are three interactive effects among students, teachers and teaching situations. Students' learning is carried out under the guidance of teachers. The design of teaching situation is mainly designed by teachers. Therefore, in order to improve the effectiveness of classroom teaching, the most important factor is the teaching attitude of teachers. The prepared teaching contents and the teaching methods will affect the teacher's behavior in the classroom. The purpose of classroom teaching is to make students acquire knowledge and cultivate students' ability to acquire knowledge through effective teaching, and then evaluate students' learning outcome.

In order to improve the teaching effectiveness, this subject interferes with the factors that affect teacher's teaching behavior through the theory and method of OD. The teaching effectiveness of classroom is measured by two aspects: teacher's teaching outcome and students' learning outcome. According to the above, the conceptual framework of this article is shown in Figure 2 below.

Figure 2

Conceptual Framework of the Study

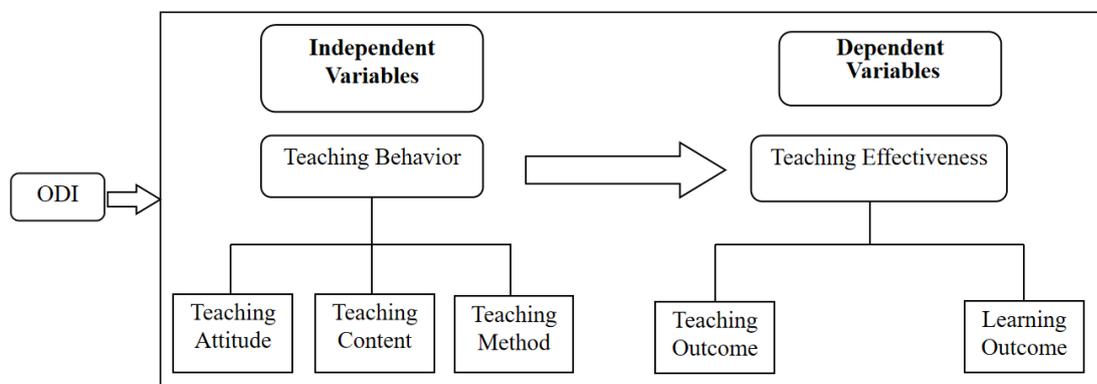
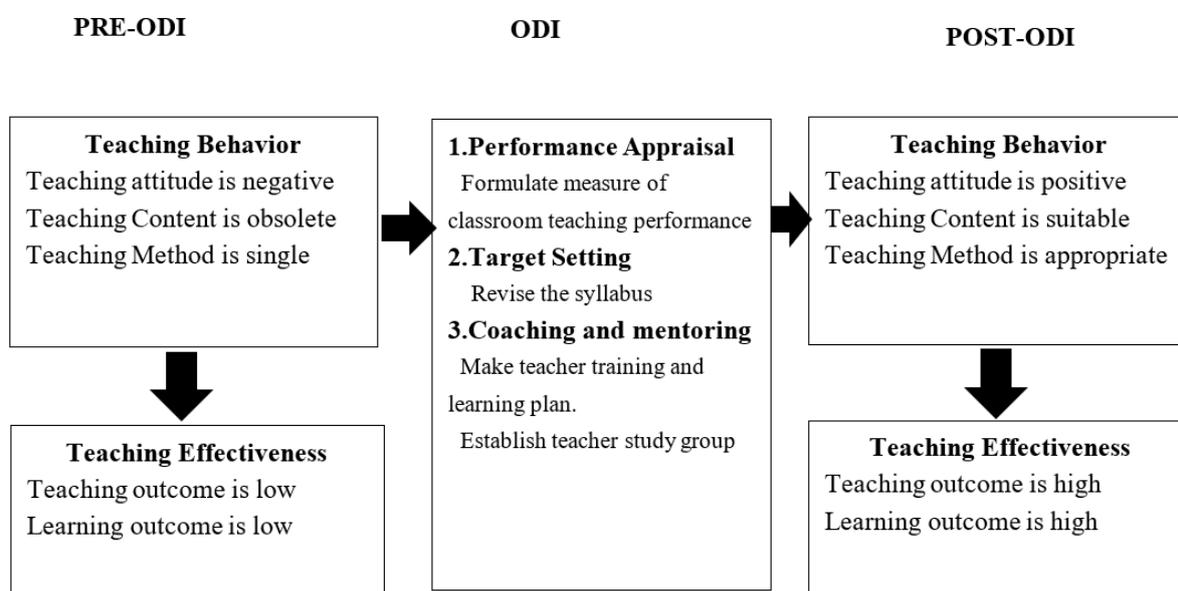


Figure 3

Action Research Framework



According to the content of theoretical framework and conceptual framework, the action research framework is shown in Figure 3. The purpose of this action research is to improve the classroom teaching effectiveness by changing teacher's teaching behavior.

Research Methodology

Research Design

According to the theory of action research model of organizational change, the design of this study is as follows:

First, problem identification. Professional evaluation expert group, college supervisors reflect the classroom teaching effectiveness is low.

Second, consultation. (1) Consult relevant professionals and read literature about education, management, OD, and OB. (2) Set up intervention groups. It is composed of external experts, authors, college supervisors and heads of departments.

Third, data gathering and preliminary diagnosis. Review the relevant data of the college, conduct teacher interviews, and collect data and make a preliminary diagnosis of the problem.

Fourth, feedback. The results of the preliminary diagnosis are fed back to the college.

Fifth, joint diagnosis of problem. Set up an intervention group with the participation of college managers to discuss and diagnose issues.

Sixth, joint action planning. An action plan is drawn up by the intervention team and the teachers.

Seventh, action. After the adoption of the action plan, the process is monitored and given feedback by the intervention team members.

Eighth, data are gathered after action. The data is collected and analysis by the intervention team members before and after the intervention.

Ninth, Conclusion and suggestion. With the analysis, some conclusions and suggestions will be put forward. The new intervention will be started probably.

Research Method

It mainly uses the literature research method, the interview method, and the questionnaire survey method in the study.

First, literature research method. In the process of the research, the researcher consults many journals, papers, newspapers, websites, and CIB (College of International Business) at home and abroad.

Second, interview method. In the process of the research, to further understand the problem, the college teachers are interviewed.

Third, questionnaire method. Based on studying the theory and practice of teaching behavior and teaching effectiveness, a questionnaire survey on teachers' classroom teaching

and teaching effectiveness is designed. Through the analysis of questionnaire survey data, the effectiveness of the intervention scheme will be verified.

OD Design Process

The design of intervention was divided into three stages: pre-intervention, intervention-neutralization, and post-intervention. The pre-intervention stage was from February 2018 to May 2019, the middle stage was from April 2019 to December 2019, and the post-intervention stage was mainly from January 2020. Before the intervention, the methods of consulting data and teacher interview were used to diagnose the classroom teaching problems in CIB, and the questionnaire survey was designed, distributed, and recovered. After the intervention, the subjects were tested again with the same questionnaires. The design of the intervention phase is highlighted below.

Revise the Syllabus

Professional curriculum plan and syllabus are the most important reference basis for teachers to set teaching content and teaching objectives. According to the results of diagnosis, the teachers' teaching contents are outdated, and the reasons for the repetition of the teaching contents are mainly caused by the unreasonable curriculum plan and syllabus, and the teachers do not learn the curriculum plan and syllabus. According to the six steps of goal management, it was revised the professional curriculum plan and the syllabus.

Develop the Performance Evaluation Standard of Classroom Teaching

The evaluation of teacher's classroom teaching performance affects teachers' teaching attitude. From the diagnosis results, the teachers' class teaching was not positive and had a great relationship with the performance evaluation. According to the six aspects of performance management, the action plan of performance evaluation in class teaching was designed.

Performance evaluation systems usually include elements such as purpose, valuator, evaluated person, measurement, and time. The design of teacher performance evaluation system was mainly used for teacher reward, teacher development and teacher promotion. The performance evaluation system design was implemented according to the following steps:

- (1) It set up the design team of teachers' teaching performance evaluation system.
- (2) The design team analyzed the advantages and disadvantages of the current college teaching performance evaluation system of classroom teaching.
- (3) The design team agreed on the purpose and objectives of the system.
- (4) The design team designed performance evaluation system. They will determine the list of valutors, evaluate indicators, how to measure performance, and how to give feedback.

(5) The experiment was carried out by the design team. It conducted guidance tests before formal implementation to standardize and correct existing defects.

(6) After the implementation of the evaluation system, the design team carried on the multi-angle evaluation to the evaluation system.

Teacher Training and Learning program

According to the theory of total quality management and the theory of learning community, the content and the method of teaching are updated very quickly. Only by constantly improving themselves, teachers improve their teaching level. Teacher training and learning programs were divided into the following areas:

(1) Combining with the needs of teachers, the intervention group united the university teacher development center, a training plan was developed for teachers in colleges, and carried out diversified training for teachers.

(2) The college provided financial and venue support to encourage teachers to set up teacher study groups and carry out classroom teaching research.

Data Collection/Documentation of the Change Processes

There are four stages of data collection or documentation.

The first stage was the problem diagnosis period. This stage of data collection is mainly through access to college materials, teacher interviews and other forms of data collection. The data is in the form of text.

The second stage was pre-intervention data collection. 360-degree evaluation system in the Wen Juan Xing (WJX) were used to collect data. This system can realize the sending of questionnaire point to point by mobile phone, so the recovery rate of the questionnaire can be guaranteed. (1) Before issuing the questionnaire, all participants were trained in the questionnaire survey. (2) The data for this phase was mainly from college supervisors, teachers, and students. (3) The intervention team was responsible for the inspection and recovery of the college supervisors' questionnaires. (4) Teachers' mutual assessment and self-assessment questionnaires were distributed and recovered by heads of departments and examined by intervention team members. (5) The students' questionnaire was organized each class information personnel to distribute and collect, and the intervention team members carried on the inspection.

The third stage was in the intervention. There were several syllabus revision work plans; classroom teaching evaluation work plan; meeting minutes; classroom teaching evaluation criteria; teacher training plan; establishment of teaching and learning group documents.

The fourth stage was post-intervention data collection, the same as the second stage.

The questionnaire survey before and after the intervention was in the form of paper manuscript, and the data entry were stored in electronic form.

Data Treatment and Analysis

Quantitative analysis was mainly used in the study. Student questionnaire, teacher self-evaluation questionnaire, teacher mutual evaluation questionnaire and teaching supervision evaluation questionnaire were assessed by Likert scale.

Data analysis includes descriptive statistics analysis and inferential statistics analysis. Through descriptive statistics analysis, charts or tables were shown as number, mean, standard deviation, etc. Through inferential statistics analysis, hypothesis was improved.

The researcher did the treatment and analysis of the data. The data before and after intervention was analyzed by SPSS and EXCEL. That software provided statistics and analysis of the following data:

- (1) The accuracy and completeness of input data was audited.
- (2) The scores of teaching attitude, teaching method and teaching content in teacher's teaching behavior were counted by EXCEL.
- (3) The scores of teaching outcome and learning outcome in teaching effectiveness were counted by EXCEL.
- (4) It used principal component analysis to compute the total of teaching behavior and teaching effectiveness.
- (5) Through the correlation analysis (Pearson correlation analysis), it determined the relationship between teaching attitude, teaching method, or teaching content and teaching effectiveness.
- (6) Through the correlation analysis (Pearson correlation analysis), it judged the relationship between teaching behavior and teaching effectiveness.
- (7) Through the t-test (paired sample t - test), it measured the difference of teaching behavior & teaching effectiveness between Pro-ODI and Post-ODI.
- (8) Through the t-test (independent sample t - test), it decided the difference of teaching behavior and teaching effectiveness between treatment group and control group.

Composition of Experimental Group (EG)

Pre-ODI, there were 41 teachers in the experimental group in the first semester. Post-ODI, there were 38 teachers in the experimental group in the second semester. In order to make the intervention consistent with the teachers, the teachers who only participated in the classroom teaching for one semester were removed. The final number of teachers in the experimental group was 38.

Composition of Participating Evaluators

The 360-degree evaluation method was used to evaluate teachers' teaching behavior and teaching effect. It involves the evaluation of college supervisors, peers, teachers, and students.

Supervisors evaluation. There were 5 members. Each supervisor had evaluated the specific teacher through at least one classroom instruction observation.

Peer evaluation. with each department as the unit, among which the experimental group was divided into 5 groups for mutual evaluation.

Self-evaluation. There were 38 in experimental group.

Students evaluation. Taking the class students taught by teachers every semester as the participants, the data collection before intervention involved 1970 students. There were 1707 students after intervention.

Data Calculation Methodology

The sum of the scores of each evaluator was calculated as Table 1.

Table 1

The Scores of Values about TB and TE

values	category	Num of Items	Num of evaluators	score
Teaching behavior (65)	Teaching attitude	5	3	25
	Teaching content	5	3	25
	Teaching method	3	3	15
Teaching Effectiveness (90)	Teaching outcome	Teaching effect 1	3	25
		Teaching effect 2	6	1
	Learning outcome	7	1	35

Calculation of teaching behavior and effect scores. After the analysis of teaching attitude, teaching content, and teaching method, KMO=0.712, the weight could be determined by principal component analysis. After the analysis of teaching outcome and learning outcome, KMO=0.824, the weight could also be determined by principal component analysis.

Analysis of Findings

According to the research hypothesis, 6 pairs of hypothesizes are verified.

Hypothesis of Teaching Behavior Pre and Post ODI

Table 2 shows that teaching behavior (TB) is improved 3.91 score before ODI. Teaching attitude (TA), teaching content (TC) and teaching method (TM) are also improved, including each indicator.

Table 2

Difference of Teaching Behavior between Pre-ODI and Post-ODI

	PRE-CIB(N=38)		POST-CIB(N=38)		D-value	remarks
	Mean	SD	Mean	SD		
TB	54.365	2.863	58.275	1.994	3.91	↑
TA	21.008	1.217	22.898	0.858	1.89	↑
TA1	4.179	0.250	4.570	0.219	0.391	↑
TA2	4.359	0.306	4.594	0.240	0.235	↑
TA3	4.057	0.286	4.636	0.210	0.579	↑
TA4	4.236	0.326	4.664	0.201	0.428	↑
TA5	4.176	0.321	4.434	0.279	0.258	↑
TC	20.685	1.206	22.076	1.000	1.391	↑
TC1	4.115	0.280	4.252	0.270	0.137	↑
TC2	4.235	0.277	4.496	0.215	0.261	↑
TC3	4.086	0.282	4.360	0.260	0.274	↑
TC4	4.239	0.302	4.469	0.219	0.23	↑
TC5	4.009	0.304	4.498	0.217	0.489	↑
TM	12.673	0.612	13.301	0.444	0.628	↑
TM1	4.459	0.199	4.605	0.182	0.146	↑
TM2	4.076	0.278	4.366	0.228	0.29	↑
TM3	4.137	0.272	4.330	0.228	0.193	↑

Paired T test is used to verify whether the means has significant correlation. The result of paired T test is shown in Table 3. From the Table 3, the result is following:

About teaching behavior, $t=11.540$, $p=0.000<0.05$, it reached a significant level, indicating that before and after the intervention, there were significant changes in teachers' teaching behavior, and after the intervention was significantly higher than before the intervention. H_0 hypothesis that is "Before and after ODI, teacher's teaching behavior has changed" is accepted.

Table 3*Paired Sample T-Test for Teaching Behavior between Pre-ODI and Post-ODI*

	M	SD	t	Sig.(2-tailed)
CIB-POST-TB	4.476	.152	11.540	.000
CIB-PRE-TB	4.188	.218		
CIB-POST-TA	4.5806	.174	11.286	.000
CIB-PRE-TA	4.202	.247		
CIB-POST-TC	4.415	.203	11.023	.000
CIB-PRE-TC	4.137	.244		
CIB-POST-TM	4.434	.150	9.188	.000
CIB-PRE-TM	4.224	.207		

Hypothesis of Teaching Effectiveness Pre and Post ODI

From the Table 4 following, teaching effectiveness (TE) is improved 2.66 score before ODI. Teaching outcome (TO) and learning outcome (LO) are also improved, including each indicator.

Table 4*Difference of Teaching Effectiveness between Pre-ODI and Post-OD*

	Pre-CIB(N=38)		Post-CIB(N=38)		D-value	Remarks
	Mean	SD	Mean	SD		
TE	80.546	2.389	83.210	1.830	2.664	↑
TO	48.947	1.369	50.689	1.086	1.742	↑
TTO	21.650	0.772	22.692	0.676	1.042	↑
TTO1	4.195	0.265	4.382	0.236	0.187	↑
TTO2	4.164	0.319	4.340	0.270	0.176	↑
TTO3	4.435	0.180	4.646	0.181	0.211	↑
TTO4	4.573	0.206	4.643	0.165	0.07	↑
TTO5	4.285	0.171	4.680	0.169	0.395	↑
STO	27.297	0.877	27.998	0.793	0.701	↑

STO1	4.594	0.148	4.703	0.132	0.109	↑
STO2	4.562	0.149	4.679	0.138	0.117	↑
STO3	4.567	0.159	4.668	0.154	0.101	↑
STO4	4.562	0.141	4.670	0.128	0.108	↑
STO5	4.455	0.197	4.595	0.161	0.14	↑
STO6	4.557	0.145	4.683	0.119	0.126	↑
SLO	31.599	1.151	32.521	0.878	0.922	↑
SLO1	4.535	0.162	4.658	0.142	0.123	↑
SLO2	4.475	0.184	4.629	0.141	0.154	↑
SLO3	4.464	0.185	4.617	0.143	0.153	↑
SLO4	4.549	0.158	4.651	0.125	0.102	↑
SLO5	4.512	0.167	4.645	0.127	0.133	↑
SLO6	4.513	0.171	4.647	0.116	0.134	↑
SLO7	4.551	0.165	4.674	0.116	0.123	↑

Paired T test is used to verify whether the means has significant correlation. The result of paired T test is shown in Table 5. From the Table 5, the result is following:

About teaching effectiveness, $t=6.964$, $p=0.000<0.05$, it reached a significant level, indicating that before and after the intervention, there were significant changes in teachers' teaching behavior, and after the intervention was significantly higher than before the intervention. H_2 hypothesis that is "Before and after ODI, teaching effectiveness has changed" is accepted.

Table 5

Paired Sample T-Test for Teaching Effectiveness between Pre-ODI and Post-ODI

	M	SD	t	Sig.(2-tailed)
CIB-POST-TE	4.623	.1021	6.964	.000
CIB-PRE-TE	4.476	.130		
CIB-POST-TO	4.601	.087	10.585	.000
CIB-PRE-TO	4.439	.100		
CIB-POST-TOT	4.536	.097	18.034	.000
CIB-PRE-TOT	4.328	.093		
CIB-POST-TOS	4.666	.134	4.573	.000
CIB-PRE-TOS	4.549	.149		
CIB-POST-LO	4.646	.127	4.643	.000
CIB-PRE-LO	4.514	.167		

Hypothesis of the Correlation between Teaching Behavior and Teaching Effectiveness

Teaching behavior, including teaching attitude, teaching content and teaching method, are continuous variable, so it adopted product moment correlation. This method is created by K. Peason. The result of the correlation between teaching behavior and teaching effectiveness is shown in Table 6.

Table 6***The Correlation between Teaching Behavior and Teaching Effectiveness***

		TE
TB	Peason Correlation	.376**
	Sig(2-tailed)	.001
TA	Peason Correlation	.400**
	Sig(2-tailed)	.000
TC	Peason Correlation	.330**
	Sig(2-tailed)	.004
TM	Peason Correlation	.338**
	Sig(2-tailed)	.003

The correlation between teaching behavior and teaching effectiveness. From the table 44, $p=0.001<0.05$, the two values have significant positive correlation, and $r=0.376$, it shows the degree of correlation is low. So it can accept Ha3 hypothesis that is “The change of teaching behavior has a positive influence on the change of classroom teaching effectiveness”.

The correlation between teaching attitude and teaching effectiveness. From the table 44, $p=0.000<0.05$, the two values have significant positive correlation, and $r=0.400$, it shows the degree of correlation is low. So, it can accept Ha4 hypothesis that is “The change of teaching attitude has a positive influence on the change of classroom teaching effectiveness”.

The correlation between teaching content and teaching effectiveness. From the table 44, $p=0.004<0.05$, the two values have significant positive correlation, and $r=0.330$, it shows the degree of correlation is low. So, it can accept Ha5 hypothesis that is “The change of teaching content has a positive influence on the change of classroom teaching effectiveness”.

The correlation between teaching method and teaching effectiveness. From the table 44, $p=0.003<0.05$, the two values have significant positive correlation, and $r=0.338$, it

shows the degree of correlation is low. So, it can accept Ha6 hypothesis that is “The change of teaching method has a positive influence on the change of classroom teaching effectiveness”.

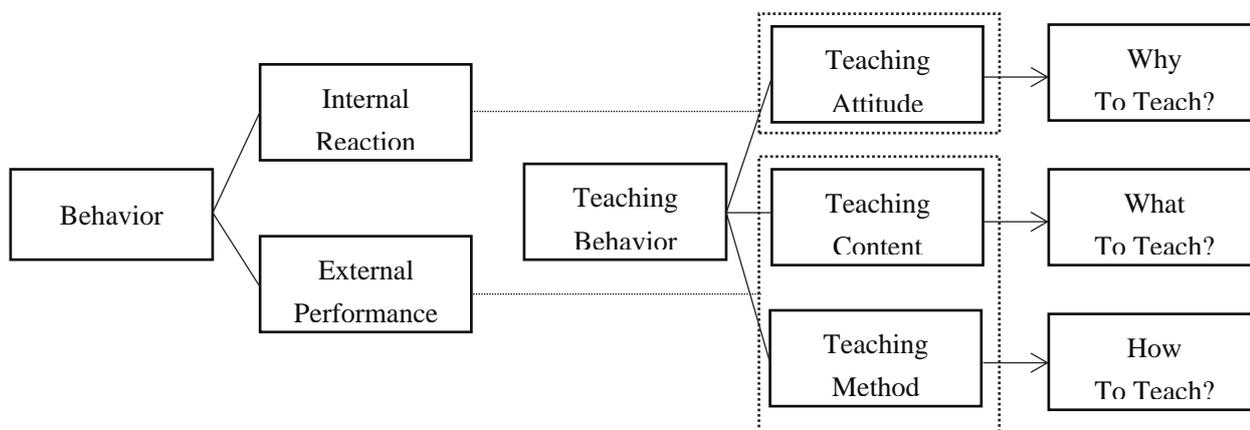
Conclusion of the Research

Conclusion of Teaching Behavior

From the research, teaching behavior including teaching attitude, teaching content and teaching method is suitable. The internal psychological reaction is the problem of teachers' teaching attitude towards teaching behavior, and it is the source of why teachers do so. Teachers' teaching attitude dominates the direction and path of teacher's teaching behavior. The external activity performance is mainly reflected in the teaching method (how to teach) and the teaching content (what to teach). It is shown in Figure 3.

Figure 3

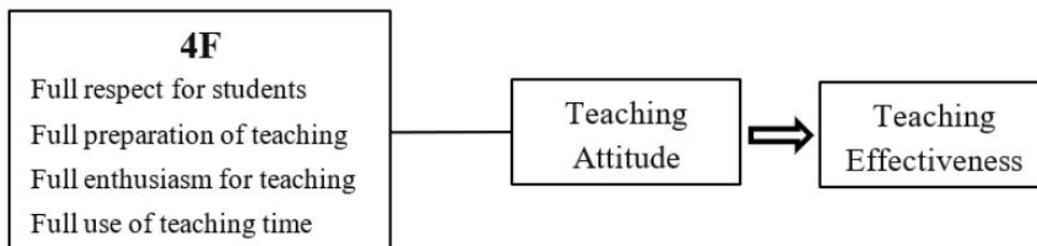
Components of Teaching Behavior in This Study



Teachers' teaching attitude is the most important characteristic, including full respect for students, full preparation of teaching, full enthusiasm for teaching and full use of teaching time. Teachers' positive teaching attitude has a positive influence on students' academic achievement, students' learning behavior and teaching outcome. The teacher's teaching attitude is the driving force of the teaching behavior and instructs the teacher's effective teaching behavior. (see Figure 4)

Figure 4

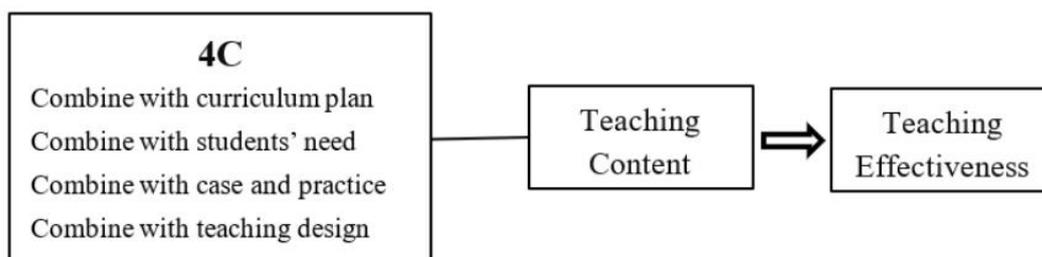
4F of Teaching Attitude



The teaching contents and curriculum have a very close internal relationship. The core elements of the curriculum include the unity of curriculum planning, curriculum standards, curriculum objectives, curriculum content, curriculum implementation, curriculum evaluation, curriculum management and other systems. The implementation of curriculum content is not only the core link for teachers to accomplish the teaching task, but also the most direct embodiment of the process of teaching content. Under the impetus of the reform of classroom teaching all over the world, the curriculum is the bottleneck and key factor of the reform of education and teaching. Teachers should guide by the design of teaching content and the development of teaching practice with the thought of curriculum view. It is shown in Figure 5.

Figure 5

4C of Teaching Content

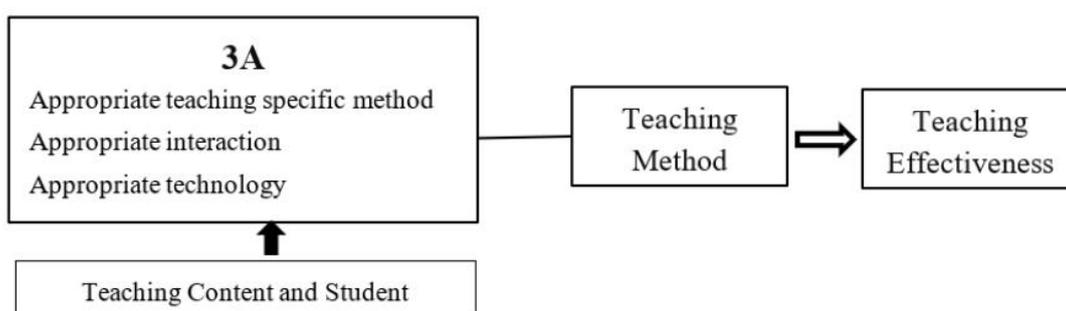


The teaching method refers to the total of the interactive methods used by teachers to complete the teaching content and achieve the teaching objectives, including the teaching methods of teachers, the learning methods of students and the methods of teaching and

learning. Therefore, in the teaching process, teachers should adopt appropriate teaching methods according to the teaching content and students' situation realize the appropriate teacher-student interaction through the appropriate teaching methods, to improve the enthusiasm of students to participate in learning. On the other hand, teacher selects appropriate multimedia technology to improve students' learning attention and manage students' learning outcome. It shows in Figure 6.

Figure 6

3A of Teaching Method



Conclusion of Teaching Effectiveness

From the research, teaching effectiveness including teaching outcome and learning outcome is suitable. The evaluation of teaching effectiveness depends not only on the outcome of teachers' teaching, but also on the learning outcome of students. From the above questionnaire data, to improve students' learning outcome, teachers should not only design classroom teaching from the perspective of teaching, but also improve teaching design from the perspective of students' learning. Only in this way, we can truly realize the unity of teachers' teaching and students' learning.

Conclusion of ODI

From July 2019 to January 2020, according to the plan, 3 interventions of revising the syllabus, learning , and training program, and formulating measure of classroom teaching performance has been completed. From the result of questionnaires, the interventions are effective. (1) Though ODI, teaching behavior and teaching effectiveness in EG has been positive changed. (2) Compared with CG, ODI in EG is effective. Before ODI, the mean of teaching effectiveness of EG is lower than CG. Through ODI, the result in EG is higher than CG, especially teaching outcome has significant level. Before ODI, the GPA is similar between EG (2.81) and CG (2.67). The GPA in EG (3.05) is much higher than CG (2.72). (3)

Teachers' participation is effective. From the interview after ODI, several teachers thought that teacher's participation helped teachers to have a deeper understanding of classroom teaching evaluation. Systematic learning and training were effective for teachers to improve their teaching methods. Through the participation of all teachers in the revision of the syllabus, teachers had a deeper understanding of the whole profession and curriculum content.

Recommendation for Further Research

According to the above research, whether teachers' teaching behavior can be changed consciously directly has a direct impact on classroom teaching effectiveness. The transformation of teachers' teaching behavior is a difficult and complicated task. From the current situation, in order to change teachers' teaching behavior, the constraints of the external system will have a positive impact on the change of teachers' behavior. Through teachers' continuous improvement of their understanding and understanding of the external system, teachers are encouraged to participate in teaching with active teaching behavior and to realize the positive transformation of teaching behavior to the state of autonomy.

First, rebuild the teaching relationship and create a good atmosphere for the change of teaching behavior. (1) The relationship between teachers and students is the dominant characteristic of the relationship between teaching and learning. By changing the single-line of teaching and learning, we can form a teacher-student relationship of multi thinking interaction between teaching and learning and promote two-way communication between teachers and students. (2) To build a learning community of teaching and research cooperation among teachers. It will provide teachers with an effective platform for teaching and research cooperation, strengthen teachers' learning, promote teachers to understand each other, form a sense of cooperation, and master effective cooperation methods.

Second, we should rebuild the culture of teaching system and build a positive space for the change of teaching behavior. " If you want to change people's behavior, you should not use reasoning to tell them why they want to make different behaviors, nor why they want to change. Instead, you should focus on changing the social structure in which people live, so that these structures create a series of different behavioral expectations," says Brookfield, an American scholar. School is a miniature social space; teachers' teaching behavior is influenced by various structural factors in the school. The influence of teaching system culture on teachers' teaching behavior is the most direct and profound. To promote the change of teachers' teaching behavior, it is necessary to reconstruct the school teaching system such as teaching management system and teaching organization system, change the control orientation of teaching system, promote the innovation of teaching culture, and shape the teaching culture that leads teachers' spirit. and make the teaching system culture play a

positive role in guiding behavior. So that, teaching system culture will play an active role in behavior guidance.

Third, promote the process of teachers' self-awareness and self-experience. The integrated teaching relationship and reasonable system culture provide positive external conditions for teachers to change their teaching behavior, but the positive external conditions are only the possible conditions for teachers to change their teaching behaviors. Teachers are the main body of teaching behavior, and the subjective consciousness of teachers is the real condition of changing teaching behavior. It is a positive process that teaching behavior changes from being restricted by rules to being independent. In this process, teaching awareness is awakened, teaching ability is improved, and teaching effectiveness is improved. Teachers' self-awareness, as the internal motivation of behavior, promotes the real change of teaching behavior. From the perspective of the process of teaching behavior, teachers' self-awareness is reflected in three interrelated behavior stages that is teachers' understanding of why to teach, what to teach and how to teach. From the perspective of teachers' subjective factors, teachers' self-awareness is driven by teaching beliefs, self-identity, and teachers' learning. From the existence of teachers' subject, we can find and stimulate the inner power of teaching behavior, promote teachers' self-awareness, and make the pursuit of better teaching behavior become teachers' conscious demand. Under the promotion of the internal power of themselves, teachers can actively change their teaching behavior, and form their own teaching behavior that goes beyond the negative restrictions of internal and external regulations.

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