# The College Teachers Implementation of Outcomes-Based Teaching and Learning in the New Media Classroom Environment: Basis for a Framework for Teacher Effectiveness

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## Abstract

**This study explored the performance of college teachers in the process of implementing O.B.T.L. in a new media environment. By using the qualitative phenomenological research method, ten college teachers teaching in different majors were selected for interview. Ten of their classroom teaching were also selected to make classroom observation samples. Textual analysis of interview content and classroom observation results. The performance of college teachers in the interviews reflected that they had a correct understanding of O.B.T.L. and were committed to implementing it. But in the classroom observation, their implementation of O.B.T.L. could not be exactly as expected, and there would be some challenges. The outcome of this study was to develop a teacher effectiveness framework for teachers. This research result would help teachers to better implement O.B.T.L. and enhance their sense of efficacy. It was also hoped that this study can provide a reference for future researchers.**

## Keywords

**O.B.T.L., classroom teaching, new media, teacher effectiveness.**

## 1. Introduction

In terms of educational concept, the traditional educational theoretical model represented by Herbart had long been dominant in our country, which emphasized the traditional "three centers", namely, the teacher center, the classroom center and the teaching material center. This educational concept not only inhibited students' creativity and enthusiasm, but more seriously, the talents cultivated by the school didn't meet the needs of the society.

"Student-centered" was one of the important directions of higher education curriculum reform in China. Outcomes-based education (O.B.E.) emphasized student-centered, Outcomes-based, respected the individual development of students, was directly oriented to the market, and tends to the needs of enterprises.

The teacher eventually implemented the theory into the teaching process. This was a relatively micro level. The author needed to understand how outresults based teaching and learning was implemented in the complex new media classroom environment, what teachers were doing in this critical link, whether they were experiencing difficulties, and what the author could do to address these difficulties.

### 1.1. Research Question

The main object of this research was the Chinese college classroom. The teaching and learning behaviors between teachers and students can be seen in classroom activities, and the actual face of college teaching can be understood in the new media environment. Therefore, this topic raised questions about the following research aspects.

1) How do teachers implement O.B.T.L. in a new media classroom environment?

2)What are the impacts or challenges of O.B.T.L. teaching practices regarding teaching-learning factors?

3) How do teachers situate the learning experience to O.B.T.L.?

4) What framework for teacher effectiveness can be developed?

## 1.2. Theoretical Framework

From tradition to modernization, different learning theories have guided college classroom teaching. These learning theories attempted to describe how humans and animals learn. This could help us better understand complex learning processes. Although these learning theories did not directly tell us the answer to the problem, they could guide us to find the direction to solve the problem to some extent. Answers to the student-centered questions pursued in this paper, the impact of classroom environment on teaching, the relationship between teaching tools and teaching methods, and effective classrooms could be found in O.B.E. theory and T.P.A.C.K. theory.

O.B.E. theory

Outcomes-based education (O.B.E.) was first proposed by Mitchell, D.E and Spady, W.G in 1978. In 1994, Spady systematically explained the connotation, elements, implementation methods, and changes of Outcomes-based education in his book Outcomes-based Education: Key Questions and Answers[1].

Outcomes-based education (O.B.E.) provided a framework for focusing and organizing the curriculum around predetermined and clearly defined student learning outcomes. It had been viewed as a significant paradigm shift in educational philosophy and practice which underscored a learning based model focused on what students known and could do as a result of a learning experience or earning a degree as opposed to a teacher centered model that emphasized what was presented[2].

T.P.A.C.K

The theoretical prototype of T.P.A.C.K was Pedagogical Content Knowledge, which Shulman(1986) proposed. Matthew J. Koehler and Punya Mishra(2006)added technical knowledge to the PCK. That was "Technological Pedagogical Content Knowledge"(TPCK). [3]

They expanded Schulman's definition of the characteristics of knowledge required by teachers, analyzed the critical role of technical knowledge in teaching under the information environment, and believed that the following three kinds of knowledge constitute the basis of T.P.A.C.K: Content Knowledge (CK), which referred to the knowledge content of any subject and was also the teaching content that teachers needed to undertake. Pedagogical knowledge (PK) refers to the knowledge that teachers should have about various teaching strategies, teaching methods, and teaching activities to promote students' learning. Technological knowledge (TK) refers to all kinds of traditional and emerging technical knowledge that teachers should have and can be integrated into subject teaching.

T.P.A.C.K theory has important implications for contemporary education, especially regarding the popularity of the B-Learning concept. The international education community gave B-Learning a new meaning: combining the advantages of traditional teaching and learning methods with the advantages of E-Learning (digital or online teaching and learning methods).

In other words, teachers should not only play the leading role of guiding, inspiring, and monitoring the teaching process but also fully reflect students' initiative, enthusiasm, and creativity as the main body of the cognitive process. This made the teaching community see the hope of breaking the one-sided student-centered concept of constructivism and restoring the normal position of teachers. The international teaching concept, teaching and learning methods, teaching design, and other aspects related to information teaching were undergoing profound and far-reaching evolution. This theory also provided the theoretical basis for the study.
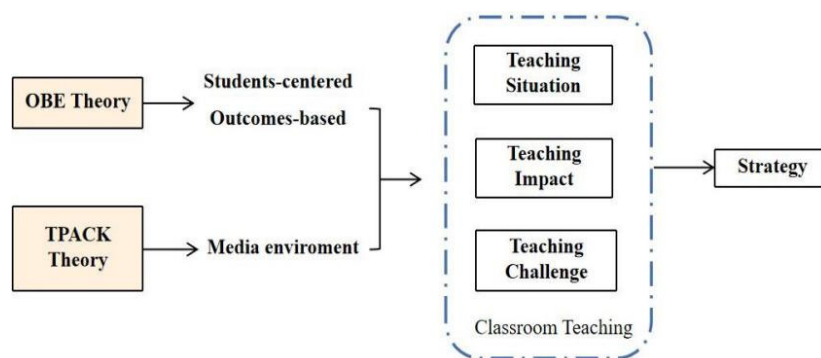
**Figure 1.** Theoretical Framework of this Study

In this theoretical framework, the author was guided by O.B.E. theory to examine the current classroom teaching from student-centered and Outcomes-based perspectives. These two aspects are the core of O.B.E. theory and the most important aspects of teaching reform. Under the guidance of T.P.A.C.K theory, the author also investigated the new media environment of classroom teaching, teachers' teaching methods, classroom management, and other aspects. Through the observation of classroom teaching, analysis of the current teaching and teaching challenges, and finally, the teacher's teaching strategy is put forward.
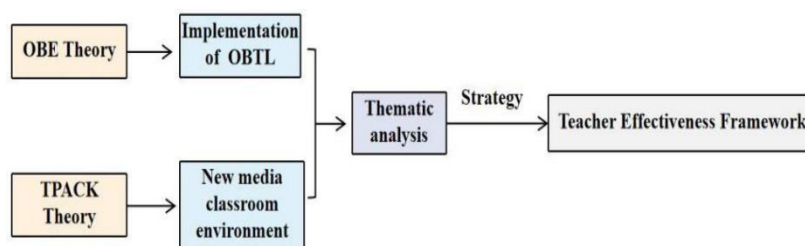
## 1.3. Conceptual Framework

This study focused on implementing O.B.E. theory in college classrooms, Outcomes-based teaching, and learning. In the college classroom, how did teachers prepare courses, teach courses, and improve teaching evaluation and teaching under the guidance of O.B.E. theory? These questions need to be investigated through qualitative empirical research.

Under the guidance of T.P.A.C.K, teachers had become targeted in their teaching work. Teachers knew about teaching technology, carried out teaching activities with the help of the classroom environment built by network new media, chose appropriate teaching methods to achieve exemplary teaching effects, and guided students to complete teaching objectives. This also provided research ideas for this study to propose the output.

In the new media classroom environment, it was undoubtedly a challenging thing to implement a new educational theory. In order to investigate the current teaching situation, influence, and challenge, the author needed to use the thematic analysis method to analyze the collected data. In order to better implement the O.B.E. theory and make the process of teaching and learning more perfect, the author's final result was to propose a teacher effectiveness framework.

This teacher effectiveness framework was built on the three core points of O.B.E. theory. The first core point was "student-centered." This required investigating how teachers and students are positioned in preparation for class and throughout teaching. The second core point was "results oriented." This required establishing a connection between the school and the outside world. Schools need to know what the needs of the outside world are and use this as the goal of training students. The third core point was "continuous improvement." This required teachers, students, and schools to know what problems existed in the current teaching work and to constantly correct these problems and make progress in the following work.

Teacher effectiveness would be enhanced in each link of the framework. Teachers improved their knowledge and lecture level in the teaching process, improved their skills in the use of new media classroom training, and improved their ability to keep in touch with society and participate in practical exercises. These would significantly improve their teacher effectiveness.

The following figure was the conceptual framework of this study.

**Figure 2.** Conceptual Framework of this Study

## 2. METHODOLOGY

### 2.1. Research Design

This study used a descriptive qualitative approach to answer the research questions. Descriptive qualitative research is a kind of research that explains"what" educational phenomena, problems, and facts were. The research used observation, investigation, and interview methods to record objectively and truly describe educational phenomena, problems, and facts. To answer research question 1, how do teachers implement O.B.T.L. in a new media classroom environment? The author interviewed ten participants. For research question 2, what are the impacts or challenges of O.B.T.L. teaching practices regarding teaching-learning factors? The author adopted the method of classroom observation. For research question 3, the author interviewed participants to understand how teachers situated learning experience to O.B.T.L. Based on a descriptive qualitative study of the previous three research questions, the author proposed the teacher effectiveness framework.

### 2.2. Context and Participants

In the selection of schools, this paper took the colleges that implemented the O.B.E. education concept as the primary criteria. Shandong Y College was an application-oriented undergraduate college that attached great importance to implementing the O.B.E. education concept, which was consistent with the goal of this study, so the selection of survey objects was concentrated in Shandong Y College.

For the selection of respondents, the author used stratified sampling to select them. Shandong Y College mainly consisted of five departments. The samples were evenly distributed in five departments, with 2 participants in each. The participants should have at least 3 years of teaching experience and undertake teaching tasks in the second or third year of college. The ratio of men to women was equal.

This study selected ten teachers from five departments of engineering, business school, humanities school, art school, and medical school as observation and interview objects. In order to balance the gender ratio, five men and five women were among the ten observation and interview participants. Most were between 31 and 40 years old and had five teachers. There were two between 20 and 30 and three between 41 and 50. Among these participants were five associate professors and five lecturers. Three of the participants had doctorates, and seven had master's degrees.

In this study, teachers' classrooms selected from five departments were selected as classroom observation samples, among which the classrooms of the second and third years of college were mainly. Sophomores and above were selected as the objects of the classroom research because sophomores had at least one year's experience in new media classroom learning and learning through computers and networks and had a clear understanding of the teaching environment and school regulations, which ensured the authenticity and effectiveness of this study to a certain extent.

## 2.3.    Research Instrument

Interview method was used in this study.Through the interviews, the researcher learned how the teachers implemented O.B.T.L. before, during, and after the class. Through the interviews, researchers could understand which teaching methods, teaching techniques, and teaching evaluations were adopted by teachers under the guidance of O.B.T.L., as well as how teachers mobilized students' learning initiatives and interacted with students under the guidance of O.B.T.L.. Through the interviews, researchers could understand how teachers situated the learning experience in O.B.T.L..

The observation method was a scientific method in which researchers recorded and analyzed relevant information by directly observing the behavior, language, and expression of the participants studied to understand their psychological activities and behavioral rules.

## 2.4.    Data Gathering Procedure

After seeking the consent of the interviewees and the classroom observation subjects, the author interviewed and observed the participants to obtain the research data.

## 2.5.    Data Analysis

The author used the thematic analysis method to analyze the results collected through interviews and classroom observation.

## 3.    Results and Discussion

The author described and discussed the results of the interviews and the classroom observations of the participants in the order of the research questions according to the research design.

### 3.1.    How do teachers implement O.B.T.L. in a new media classroom environment?

The author made a thematic analysis of the collected interview data, and three themes were analyzed: student-centered, outcomes-based, and the use of new media classrooms.

#### 3.1.1.  Students-centered

It was a prerequisite for the smooth development of teaching work for teachers to prepare for class and design teaching in advance. As mentioned by Li and Wang, instructional design was the bridgehead in the last mile of O.B.T.L. being introduced into the classroom, and instructional design played an important role in teaching[4]. According to the requirements of the general teaching objectives in the syllabus, the teachers made the teaching objectives of each chapter in advance. The teaching content, method, and process were designed around the teaching objectives, taking students as the center.

#### 3.1.2.  Outcomes-based

In implementing O.B.T.L., teachers achieved results orientation. The most prominent performance was setting teaching objectives, which was one of the preparations before class. The college should train the students to meet the social requirements according to the social needs, formulate the goal of talent training, and train teachers according to the overall goal of talent training and the expected teaching goal of the curriculum.

Teachers focus on the teaching objectives of the course and carry out subsequent teaching design, including determining the teaching content, selecting teaching methods, and designing teaching activities.

The interviewees evaluated the teaching after the class, and it was generally believed that whether the students had mastered the knowledge and skills was the key to judging the success of the teaching. Wang and Ning proposed that the O.B.T.L. model focuses on the evaluation and

feedback of learning results, so many evaluation systems need to be developed to evaluate whether the desired learning results have been achieved[5].

### 3.1.3. The use of new media classrooms

The environment setting of the new media classroom included hardware and software. Through the interview results, the author learned that the new media hardware equipment in the classroom was mainly a smart blackboard. These smart blackboards could access the Internet and access network resources. Some classrooms were computer rooms that could meet the needs of students for learning activities, but the number of such classrooms needed to be increased.

Teachers allowed students to use their mobile phones to complete learning tasks. At this time, students' mobile phones also constituted the hardware environment of the classroom. F. Yang pointed out that learners' direct self-learning through the Internet is conducive to mobilizing and enhancing their enthusiasm for learning activities and developing their self-learning ability[6].

## 3.2. What are the impacts or challenges of the O.B.T.L. teaching practices regarding teaching-learning factors?

For the second research question, the author refined the factors of teaching and learning into four aspects: teaching methods, teaching tools, teaching evaluation, and teaching interaction. Interviews and classroom observation were used to investigate how teaching and learning factors affect O.B.T.L. teaching practice and what challenges teachers encounter in their teaching practice.

### 3.2.1. Use of teaching methods

Under the guidance of O.B.T.L., the teaching method adopted by the teachers was mainly different from the traditional lecturing method. In addition to the lecture method, they would also use discussion, task-driven exercises, reading guidance, case analysis, and other methods.

According to the classroom observation results, the teachers used various teaching methods, such as lecture-based, exercise, task-driven, and case-teaching. These teaching methods helped to return class time to the students to think and practice rather than just teaching textbook knowledge.

For teachers, using new teaching methods was a big challenge. Because teachers had been given the"cramming" method of teaching during their school years, they had not been given the demonstration of other teaching methods. Changing the teaching method and implementing it under this kind of thinking mode was time-consuming and laborious.

Individual teachers still used lecturing as the primary teaching method in the teaching process. The consequence of this way of teaching was that the student's learning needed to improve.

### 3.2.2. Use of teaching tools

In the interviews, the teaching tools used by the interviewees were slides, smart blackboards, common blackboards, chalk, etc. A few teachers indicated they would use online teaching platforms such as MOOCs.

Although every classroom was equipped with multimedia equipment and computers, teachers did not use online equipment to carry out teaching work in the classroom. According to the observation, the teaching technology teachers used focused on using office software to play PPT. The observation also showed that individual teachers needed to be more familiar with the intelligent blackboard and could not operate the smart blackboard correctly, resulting in the slide content or web page links not playing correctly.

### 3.2.3. Methods of evaluating students

The structure of teachers' assessment of students has changed. The traditional assessment method was based on the final examination, and the score obtained by the students in the final examination would become the only result of the course study. Under O.B.T.L., teachers assessed students from multiple perspectives. Some assessments were process assessments, some were performance assessments, and the final assessment constituted the students' academic performance.

In order to make O.B.T.L. teaching evaluation more objective, teachers needed to develop more thorough evaluation methods.The evaluation indicators were refined into many small items. This increased the workload of teachers when implemented, because teachers needed to make evaluations in class and record them.

### 3.2.4. Interaction in teaching

In the classroom observation, the teachers used a pre-designed interactive method, which also validated their responses during the interview process. The interactive content designed by the teacher obviously stimulated the students' enthusiasm for learning. Lively discussions could be heard, students could be seen standing up to answer questions, and some students made class presentations.

In the links dominated by teachers, the enthusiasm of students to interact decreased significantly. Students would doze off, play mobile games, and bow their heads in silence. The flatter the teacher's tone, the longer the lecture time, the more obvious the phenomenon of students' inattention.

The implementation of teaching interaction was also an important part of the implementation of O.B.T.L. concept. But some interactive links designed by teachers have problems, such as lack of depth, and only asked students closed questions. After students answer"yes" or"no," there would be no follow-up. The problems discussed in the group did not transfer the knowledge learned by the students to the course content, resulting in the students being unable to continue the discussion after a short time.

## 3.3. How do teachers situate learning experience to O.B.T.L.?

Under the guidance of O.B.T.L. concept, the teaching methods applied by teachers in the teaching process also focus on experiential learning methods. Some respondents also expected that more advanced educational technology could be applied to the classroom to bring better learning experience to students. F.Wu and S.M. Chen[7] pointed out that from the perspective of learning experience, students' experience of classroom teaching, interpersonal interaction and teaching support would have a significant impact on their online learning effect.

With the development of teaching technology, such as the application of VR technology, AR technology and XR technology, it could bring students more diverse and realistic experience in the future.

The interviewees also proposed to implement new teaching models such as blended teaching and flipped classroom with the help of smart classroom, so as to fully let students be the masters of the classroom. In these teaching models that overturned the traditional classroom, students' learning experience was paid special attention to. Isaiah T. Awidi, Mark Paynter[8]pointed out，It was concluded that refinements of components of the flipped design, such as the pre-recorded lectures and the structure of the in-class sessions, might further enhanced the student learning experience in this course.

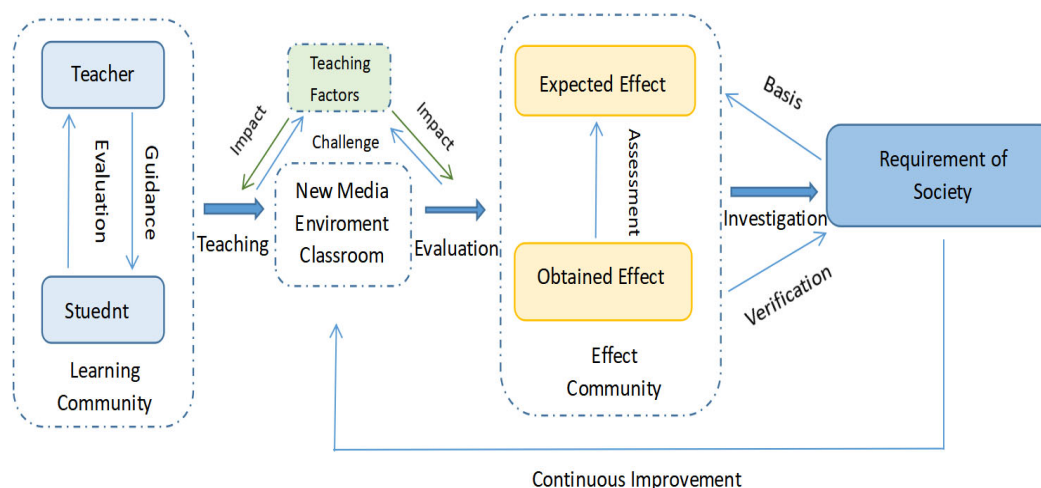## 3.4. What framework for teacher effectiveness can be developed?

The author made a thematic analysis of the survey results of research question 1. The process of teachers implementing O.B.T.L. in the new media classroom environment was closely related

to O.B.E. theory and situational cognitive theory. The implementation of O.B.T.L. by teachers was student-centered, outcomes-based, and values the role of the new media classroom in teaching, which was consistent with the core ideas of the theory. Based on the analysis of research question 1, the author determined the framework of the final results, which placed elements such as teachers and students, new media classroom environment, expected effect and obtained effect, and outcome based in the framework.

Research question 2 , the author analyzed the practices and challenges of O.B.T.L. teaching among the four teaching and learning factors. These impacts and challenges connected the elements of the framework to form a whole.

Research question 3 , the author analyzed the strategies adopted by teachers to implement O.B.T.L.. This was the change made by teachers under the guidance of new media classroom environment and new teaching theory. These change strategies provided reference for improving teacher effectiveness.

Based on the above three research questions, the author developed such a teaching framework to improve teacher effectiveness. In this framework, the author set up one orientation, two communities, three links and four mechanisms. It would be referred to simply as the"One-Two-Three-Four Teacher Effectiveness Framework". This framework would enhance teacher effectiveness in three ways.



**Figure 3.** One-Two-Three-Four Teacher Effectiveness Framework

One orientation: The content of this orientation would be based on the needs of society for students. What kind of talents the society needed and what skills the school wanted to produce would be the main criteria for the development of teaching effect.

Two communities: There were two communities. One was the learning community and the other was the effect community.

Three steps: Between "one orientation" and "two communities," three links were needed. These three links were the research link, the teaching link and the evaluation link.

In this effectiveness framework, teaching factors had impacts on both the teaching process and the evaluation process of O.B.T.L., and posed challenges to teachers. The following four mechanisms addressed the challenges that arose along the way.

Four mechanisms: Four mechanisms were needed to ensure the normal operation of these teaching links. The four mechanisms were: evaluation of teaching and learning mechanism, learning guidance mechanism, assessment and evaluation mechanism and social docking mechanism.

Under this teaching framework, teachers' self-efficacy would be improved in three aspects:

First, through the learning community, "teaching and learning benefit from each other", teachers' knowledge level was improved, while teaching knowledge to students, their own knowledge reserve was also increased, thus enhancing self-efficacy.

Second, by connecting with society, teachers obtained opportunities for skill training or social practice. Being able to keep pace with society without being detached from society would bring a sense of social identity and enhance teachers' sense of efficacy.

Third, the training mechanism of teachers' teaching skills could improve teachers' teaching ability. This would increase teachers' identification with their work and enhance their satisfaction with teaching work, thus improving teaching efficiency.

## 4. Conclusion and Recommendation

### 4.1. Conclusion

Through the results of the four research questions, the author started from four aspects: the implementation of O.B.T.L., the impacts, and challenges faced by teachers in the process of implementing O.B.T.L., the coping strategies made by teachers to ensure the implementation of O.B.T.L., and the proposed teacher effectiveness framework. The following conclusions were drawn:

O.B.T.L. had been initially carried out in classroom teaching under the new media environment. Teachers had recognized the difference between O.B.T.L. and traditional teaching philosophy. They believed that O.B.T.L. was more conducive to the growth of students. So, teachers began implementing O.B.T.L. in the links of teaching design and teaching implementation. The process was complex, though they had to abandon familiar teaching methods for methods that were more conducive to students' learning. They had to give up simple teaching sessions and design more complex interaction sessions. They should develop detailed and thorough evaluation methods to evaluate students' learning effects comprehensively.

In addition to traditional teaching methods, teachers tried to use diversified teaching methods in classroom teaching. In order to make students fully participate in classroom teaching and truly take students as the center, teachers used discussion methods, task-driven methods, exercise methods, reading guidance methods, case analysis methods, and other teaching methods to carry out teaching. These teaching methods could really arouse students' enthusiasm in the implementation process. Most of these interactions were interspersed piecemeal throughout the teaching process.

Some problems have also been exposed. First, the teaching equipment in most classrooms needed to be updated. In addition to the traditional blackboard and chalk, the classroom only had a computer and a projector. The blackboard in some classrooms would be blocked after the projection screen was lowered, so teachers could not use the blackboard to write on the board when they used the projector to play slides. Most of the desks and chairs in the classroom were arranged in a fixed"yang ko field" style, which was not conducive to students carrying out group discussions or other activities that required teamwork. Second, some teachers' control of the classroom and the design of classroom interaction needed to be revised. Teachers need to be more skilled in using teaching equipment, but they cannot use it correctly, especially when using the wisdom blackboard. Teachers still used a single teaching method. They needed to become more familiar with or understand how to apply the teaching method, resulting in the lecture-based methods dominating the classroom. Teachers should have considered the topic comprehensively when designing classroom interaction, and some interaction links could have been more effective. Third, there were differences in the practical skills of teachers. In some participants, such as medical schools, teachers had excellent practical skills, and students

engaged well in the learning process. In some participants, such as the humanities, teachers were weak in practice, and courses in these participants were often taught in ordinary classrooms. Students received more training at the level of thinking and were prone to inattention in class.

Regarding learning experience, teachers' cognition was in line with O.B.T.L. concept. They enhanced the learning experience by carefully designing the teaching process. However, the teaching environment or one's abilities could limit the learning experience. The teaching equipment in the classroom could realize electronic teaching; teachers could use computers or intelligent blackboards to play slides, pictures, or videos. Slow updating of teaching equipment and unskilled use of new teaching equipment by teachers would limit the improvement of the learning experience.

To better implement the O.B.T.L. concept and enhance teachers' sense of efficacy in the teaching process, the author proposed a teacher effectiveness framework. This framework functions in three aspects: first, through the learning community, "teaching and learning benefit from each other," the knowledge level of teachers was improved, and while teaching knowledge to students, their knowledge reserve was also increased, thus enhancing self-efficacy. In the second aspect, teachers obtained opportunities for skill training or social practice by connecting with society. Keeping pace with society without being detached from society would bring a sense of social identity and enhance teachers' sense of efficacy. Third, the training mechanism of teachers' teaching skills could improve teachers' teaching ability. This would increase teachers' identification with their work and enhance their satisfaction with teaching work, thus improving teaching efficiency.

## 4.2. Recommendations

Given the problems found in the research, this paper will provide several recommendations:

1. It is suggested that colleges increase investment in teaching funds, provide an exemplary teaching environment for teachers and students, and introduce advanced teaching equipment and technology to improve teaching quality.

2. Colleges should carry out skills training for teachers. These training include but are not limited to the use of teaching equipment training, teaching skills training, teaching methods training, teaching design training, and so on. In order to increase the teacher's sense of efficacy.

3. Colleges should increase support for teachers using flipped classrooms and blended teaching modes. The use of these new models requires additional time and energy for teachers. Schools should pay attention to teachers' efforts and introduce some incentive policies. For example, increasing project funding support for teachers building blended teaching courses is recognized as teaching research results.

4. Colleges should establish a cooperative relationship with enterprises. Hire enterprise personnel to give lectures to students, arrange for students and teachers to practice in enterprises, and provide support. For example, enterprise mentors issue teacher appointment letters and give teachers identity certification; Students could get credits for participating in enterprise practice, and teachers could get rewards for participating in enterprise practice, etc. Encourage teachers and students to"go out" and enterprise employees to"come in."

5. Teachers should keep learning new things with an open and inclusive mind. New teaching equipment, new teaching content, and new teaching methods all need teachers to master. Actively participating in the skills training organized by the school would be an essential way to improve teaching ability.

6. In lesson preparation, after-class tutoring, and teaching evaluation, teachers will have an extra workload, especially in the early stage of O.B.T.L. implementation. It is suggested that schools incorporate this part of the workload into the teacher reward system, and teachers will

get a corresponding reward for each new course they implement to enhance teachers' enthusiasm for implementing O.B.T.L.

7. The society should attach importance to the connection with the college. Society should issue corresponding policies to support enterprise employees to enter the school to carry out teaching, lectures, and other activities to bring the latest practical achievements to the students and teachers of the college. At the same time, enterprises are encouraged to accept students in school and allow more students to participate in practical learning in enterprises.

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