

# Study on Implementation and Evaluation of Curriculum Based on Blended Learning — Take Course "Investments" Teaching Practice as Example

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## ABSTRACT

Blended Learning provides new ideas and methods for the teaching reform in colleges and universities, and Blended Learning teaching philosophy is applied into the daily teaching, how to design and implement Blended Learning teaching strategies and how to evaluate teaching methods are the key problems in this process. Here take the course "investments" as an example, on the basis of Blended Learning theory, activity theory and classification theory of educational goals, we put forward some ideas of teaching reform from the curriculum design, implementation to evaluation and feedback of the implementation during the entire process. Teaching practice and survey shows the teaching model based on Blended Learning not only makes students active learning, but also improves their professional knowledge and application of knowledge. Blended Learning obtains a better teaching effect than traditional face-to-face teaching, it also provides some experience for other courses' teaching.

## KEYWORDS

Blended Learning; Activity Theory; Network Course; Learning Activities; Implementation; Evaluation

## 1 INTRODUCTION

With the rapid development of higher education informatization, information technology affects and changes students' learning style at an alarming rate, the teaching environment and conditions of information have been greatly improved in university. E-Learning has unique advantages, such as rich multimedia resources, channels of communication, diversified independent learning way etc., but if the lack of teacher participation, learning effect is not as good as expected, e-

Learning is not a substitute teacher. How to effectively use the e-Learning rich resources, mobilize the initiative of students, but also give full play to teachers' leading role in teaching face to face, to achieve the optimization of curriculum teaching effect, a better combination of classroom teaching and network learning, which show two advantages, has become a common concern. Blended Learning provides new ideas and methods for the teaching reform in colleges and universities, that is to combine the traditional learning mode and e-Learning, in order to obtain the best effect of learning and teaching<sup>[1]</sup>, here takes the course "investments" as an example, from the curriculum design, implementation to evaluation of each teaching reform practice stage, through a variety of strategies to classroom traditional teaching and students' autonomous learning, in order to improve the teaching effect.

## 2 COURSE DESIGN BASED ON BLENDED LEARNING

"Investments" is the main course of professional financial management major, the teaching goal is to make students master the basic theory and the basic method of investment, to understand the professional structure of investment, the field of academic research and the current status of the research, in order to cultivate students' interest and confidence, make students get more exercise and improve students' professional investment ability. Teachers' face-to-face teaching is the traditional teaching method, it make students study in passive, students' learning interest is generally low, they cannot get exercise. Take the Blended

Learning idea throughout the whole teaching process, the network teaching platform with the combination of classroom teaching, can let the student experience idea and apply method of investment in actual application, at the same time, changing from passive learning to active exploration, can enable students to master the knowledge, cultivate and improve knowledge summary ability, reflection ability, expression ability and cooperation ability. Curriculum design and implementation based on Blended Learning plays a key role in this process.

## 2.1 Network course platform is the Blended Learning implementation environment

The implementation of Blended Learning requires a learning management system of a network to support online learning content delivery, it can promote teacher-student interaction and implement learning evaluation, strengthen diversified learning and teaching process management, and it is the support platform of web-based education, and it is an essential learning environment for the implementation of blended learning.

We designed the "investments" network curriculum as the support environment of Blended Learning, learning activities and learning evaluation are being taken as the core, combine learning objectives, learning content, learning resources, learning tools, learning outcome, teachers - students communication into a whole combination, teachers can set the students' learning target through the platform set, manage learning content, layout of the learning task, implement formative assessment. In this platform, students can understand learning goals, obtain learning resources, complete the task of learning, record learning introspection and present study achievements [2].

## 2.2 Design of teaching activities should be based on Activity Theory

"Take the student as the main body, the teacher as the leadership" is the direction of teaching reform in colleges and universities, it is the inherent requests of "investment" course teaching, in the course, we take students as the teaching center, take students' autonomous learning

activities as main teaching. Our course activity design follows Vygotsky's activity theory [3], this theory provide a new perspective to analyze network teaching environment and establish activity network course, it makes us pay attention to focus from the static knowledge representation to the dynamic activities. E-learning resources is a good provision for dynamic activity settings, such as activity goal settings, activity content settings. What activity subject do and activity result can be easily seen during the course, what tools activity subject select and how to cooperation with each other to complete activity goal can easily control during this process. According to the teaching activity system proposed by Dr. Yang Kaicheng [4][5], combined with the characteristics of network curriculum, we designed a network course system framework, as shown in figure 1

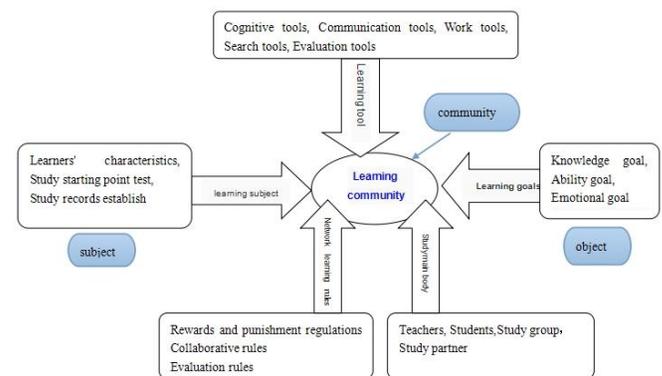


Figure 1. Network course system framework

There are three core components in the system (subject, object, community), core components corresponding in active network curriculum system framework are learners, learning objectives and learning community. Learners consist of teachers, students, study group and study partner. Learners objective consist of knowledge goal, ability goal and emotional goal. There are three minor components (tools, rules, division of labor) in this system, minor components corresponding to the network are learning tool, network learning rules and the cooperation between the members of the tasks division. Minor components constitutes the core components [6]. Learning community is application combination of learning tools, learning subject and learning object.

In order to reflect the students' online learning situation and individual subjectivity, at the beginning of the network learning system, system will test and analyze each learner characteristic on starting point, in order to understand their learning and learning style, then establish learning archives, design personalized learning scheme for each learner.

Learners use various learning tools and companion exchange to accomplish the learning objectives.

In learning community, there lies organization structure. Tasks are divided into several parts to different people so that different people only cooperate can complete the whole task under learning community structure. Everybody should abide the rules of network learning, they maybe analyze and discuss how to make a decision, the whole process is filled with interest, students can apply theory into application, and the activities results is to enable students to enhance professional level and ability, at the same time this learning community not only to master the basic knowledge, but also to cultivate interest in professional learning.

Take the course “investments” as an example. The teaching activities design should begin with this course teaching contents, this course requires students to master the financial instruments, classic investment theory and practical operation of investment, for teachers, "investments" network curriculum design is based on the financial market (here refers to Chinese securities market and Chinese the futures market), so that students can understand the basic concepts of investment, the leading role of the teacher in the teaching process is assigning tasks to different students, let whole team know the task goal, divide the whole team into several groups, each group has own specific goal, everyone should know what to do and how to do, so that they can achieve their group goals, till to obtain the team goals. This teaching team or group is a learning community. In this community, teachers know each group learning progress, they can play an important leading role to help students to complete task.

### 2.3 Activity level design should be to follow classification theory

According to the above understanding of activity theory [7], before the design of network course,

first of all, we should design learning activity and make an activity classification.

According to Bloom's educational objectives taxonomy theory, all learning activities are divided into three levels as shown in figure 2, the first level is analyze and understand, the second level is analyze and application, the third level is evaluation.

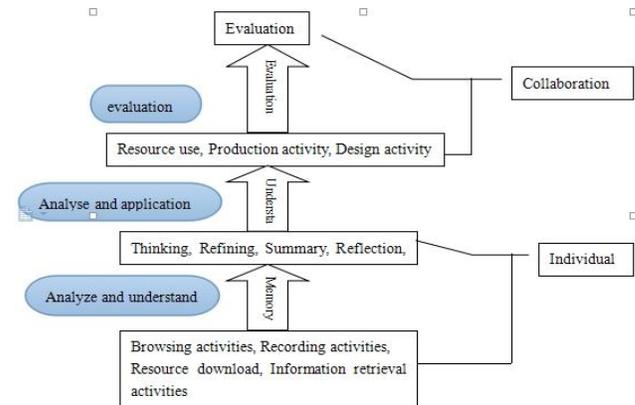


Figure 2. Learning activity levels and types in the network course

According to the theme of the activities, the activities are divided into individual activities and collaborative activities, individual activities means personal activities, including browsing activities, recording activities and information retrieval activities, and then turn to thinking, refining, summary and reflection. Collaboration activities means group members' cooperation, here refers to team resources use, team production activity and team design activity. A same task always contain both individual and collaborative activities, the task always develops from level 1 to level 3. Network course should be allowed to set and modify any type of activities.

According to the different timing of activities, activities can be divided into "pre-class activities", "class activities" and "after-class activities", such as browsing activities, information retrieval activities can be carried out before class, so that to keep good convergence on old and new knowledge; if the teacher tells the important knowledge in class, students can use the network course to record and refine summary of activities. Exhibition of works, the evaluation activities can

also be carried out in class, some design, production activities in class can also arrange to complete the course after class if lack of time in class. Before class, in class and after class activities interrelated and no strict demarcation on learning contents, these network course activities on Blended Learning platform make students always keep continuous learning state.

## 2.4 Specific activities design

According to the design idea of the above, the whole course according to the teaching task is divided into several modules, each module has specific learning objectives, each module activity will to be detailed design and detailed classification according to the "pre-class, in-class, after-class". "Before or after class "activities are taken follow network curriculum." In class" activities are taken follow teaching combination mode of network and classroom curriculum. Specific activities design refer to activity content, goal, subject (students, teachers, study group), operation process, activity level, evaluation rules etc. Here is an example of one module of network course "investments".

**Module:** module 3

**Assignment time:** in-class learning (3 teaching hours); network learning (5 teaching hours)

**Teaching goal:** students show display expression ability and logical thinking ability through e-platform display; understand the theory of financial market instruments and investments theory; learn to use display show to show their own learning outcomes, learning to appropriate evaluate the others.

**Activity time and activity environment:**

**Pre-class (network):** Browse the content of the lesson, download the required resources in the network course platform.

**In-class (network and classroom learning):** self-introduction presentation display (20 minutes); the teacher evaluation summary, student evaluation and reflection (10 minutes); the teacher introduced the basic concept of investment. (40 minutes); group make an investment presentation (30 minutes);

**After-class (network):** complete the investment presentation; communication between teachers and students; the teacher corrected homework in

the network curriculum platform, ready learning resources for the next day.

**Activity subject:** Students only; students and teachers;

**Activity level:** Understand;memory; application

**Activity evaluate:** Students' electronic archives; evaluation and reflection; homework uploading; excellent work presentation in class; excellent work presentation online;

## 3. Course implementation strategy based on Blended Learning

Characteristics of Blended Learning combines the advantages of network teaching and learning in class, initiative the enthusiasm of all the activities of the subject, all levels of teaching and learning activities can be suitable carried out in right time and right space, in order to achieve the best teaching results.

In the teaching course of "investments", implementing strategy of Blended Learning takes the activity and evaluation diversification as the core, take the network curriculum and the abundant Internet resources as the foundation, combine the traditional classroom and the advantages of e-learning, carry out the teacher -led classroom activities and teach the students as the main body of the network learning activities, as shown in figure 3.

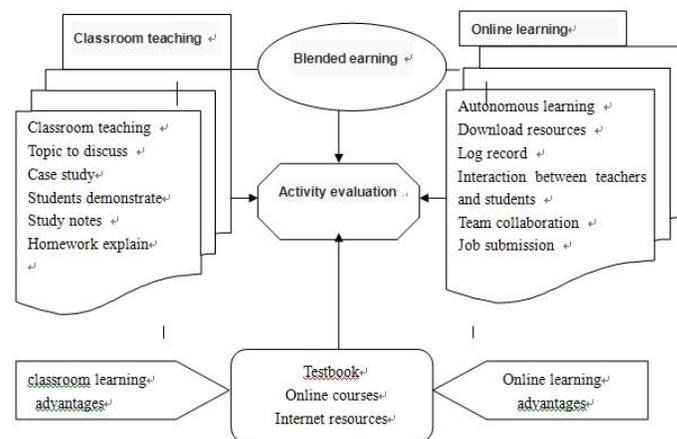


Figure 3. The implementation strategy of Blended Learning based course

### 3.1 Classroom activities implementation

Classroom teaching means teacher to take use of the network curriculum teaching advantage, combine with the traditional class teaching method, explain difficult points of each module,

layout discuss issues, guide the group collaborative learning, study the case by teachers and students together, provide homework correcting and feedback, let the student work on display, simulation of teachers' role. In the teaching process, to fully mobilize students' a variety of sensory, teachers layout some problems in the network course in advance, let students listen and think, improve the class learning efficiency and help the students sort and digest knowledge . In the time of this course, the overall time proportion of teachers' and students' classroom control is about 1:1. Combination of classroom teaching and network learning activities not only can mobilize the initiative of the students, but also can provide the necessary condition for improving teacher-student and student- student face to face communication, and promote the efficiency of online learning.

### 3.2 Active autonomous e-learning implementation

The autonomous network learning activities is the foundation of Blended Learning. In this course, students use the network course platform for autonomous learning, such as browse the content of multimedia forms; download course ware and all kinds of learning resources; share excellent resources collection they collect, do their homework online and submit to teacher online; view the job feedback results from teacher and excellent homework from team; use the forum, log learning tool for students -teachers the student - student interaction, communication and discussion; to evaluate their learning outcomes by using the online testing system. Students may not adapting to the learning mode in the beginning, but after the effective guidance of the teacher and a few times in practice, learning efficiency is improved greatly, the ability of information technology application is strengthened greatly.

### 4. Evaluation of courses strategy based on Blended Learning

Diversification, comprehensive evaluation strategy is the guarantee of the Blended Learning implementation [8], in this course “investments”, we take a combination evaluation way which include the formative evaluation method and summative evaluation method. The final exam scores is made up two parts, the ordinary

performance and the final exam text score, each part is accounted for 50% for final score. Formative evaluation includes classroom performance and network performance, here is the example of course ”investments”. In order to encourage students in online learning, we set the ratio of final score is 3:7

| Evaluation type      | Evaluation index   |
|----------------------|--|
| Classroom evaluation | <ol style="list-style-type: none"> <li>1. Don't be late or leave early, listen carefully and answer questions actively</li> <li>2. Clearly, appropriately expressed the works</li> <li>3. Take part in a group discussion, put forward their own point of view</li> <li>4. Objective evaluation of others</li> </ol>   |
| Network performance  | <ol style="list-style-type: none"> <li>1. Often log on to the network curriculum</li> <li>2. Finish class notes</li> <li>3. Make full use of various resources for learning</li> <li>4. Actively participate in post logging</li> <li>5. Finish the homework seriously, submit the homework in time</li> <li>6. Each job is completed with high quality</li> <li>7. Good group collaboration task completed</li> <li>8. The sharing of high quality teaching resources</li> <li>9. Share the experience of learning</li> <li>10. Share the experience of learning</li> </ol> |

Chart1. Formative evaluation strategy

### 4.1 Formative evaluation of the classroom performance assessment

Classroom performance includes school attendance, answer questions actively, this evaluation pay more attention to the students' personal works presentation of performance and collaborative learning performance evaluation, such as whether or not to express their views clearly on the podium, voice is sonorous or not, department is natural or not; actively involved in group discussions or not; making the maximum effort to complete the group task or not.

### 4.2 Formative evaluation of the network platform assessment

Network performance evaluation is a very important part in the Blended Learning, including the conventional performance (login situation, online time) and process performance (use of resources, participate in the discussion, log situation, homework quality etc.).

In order to improve the students' interest in learning, using a "points system" platform of network for performance evaluation. Different activities are endowed with different scores, activities are more, the higher the quality, the more scores. At the same time, the teacher performance in the network are equally important, Only teachers make a careful evaluation of the task on every one of the students of each activity

can effectively stimulate the students' learning motivation, maintain students' learning motivation. This evaluation can also help teachers to understand each student's learning attitude, learning progress and difficulties, timely help and individual aid, keep the interest in learning to care for their enthusiasm. Here is the evaluation example of the course "investments", it tells what the students do in this activity. It shows us the students learn the knowledge not only in books, but also summary and reflection ability and evaluation ability to the others.

|  |  |
|--|--|
| Student name                                       | hong zhang   |
| Activity 1   | "Self introduction" presentation   |
| Activity content                                   | Select the presentation from the group, "self - introduction"  |
| Recorded contents                                  | What have you learned from others' report?   |
| Student comment                                    | Others presentation give me inspiration: After watch a few classmates presentation, very great! Picture selection is right and benefit, and it create a good atmosphere, my presentation is too common, some students do very ordinary, some classmates add creative and animation. It is a great inspiration to me. I think a good works need full enthusiasm and devoted working. I think I can do better in continue study. |
| Task   | Record the learning log  |
| The students in this activity score                | The score is 5.(The highest score of 5 points)   |
| Please do the evaluation to the student activities | The students can complete the activity of high quality, be able to conscientiously sum up the students the advantages, log records is good   |

Chart2. Student activity show and relative evaluation

### 4.3 Summative evaluation

The advantages of formative evaluation is to urge the students in different learning stages to study devoted, they study not only for exam test , but if without the pressure of final exam(summative evaluation),the students will not give sufficient attention to learning of theoretical knowledge .It is not conducive to the formation of the system of knowledge structure. Therefore, formative evaluation and summative evaluation should be combined with effective, in order to test the learning effect of students.

## 5. Teaching effect analysis

In order to investigate this teaching effect based on Blended Learning, we conducted a questionnaire survey in charge of financial management department, there were 127 students participated in the survey, 127 questionnaires were recovered, with an efficiency of 100%, below is the statistical analysis of part of the problem.

### 5.1 Teaching pattern investigation

When asked "which is more like what kind of teaching environment", 125 students chose "classroom teaching and network learning combination", question "what attitude about online learning ", 123 students select the answer "very active and positive" , as shown in Table1, Horizontal axis represents students' network learning attitude; longitudinal axis represents the learning attitude support percentage. Select (very active)is the most popular attitude ,only a few students select (common) and (dislike).The table1 shows that most of the students are satisfied with teaching mode of Blended Learning in the course.

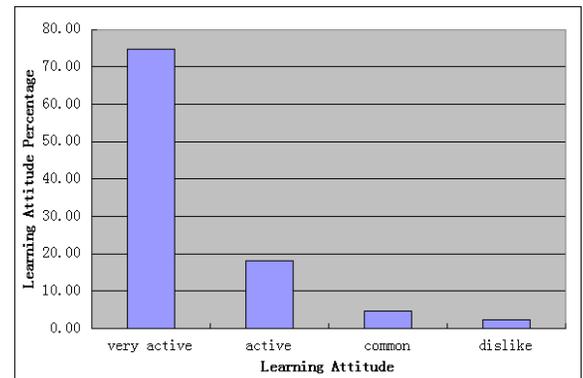


Table1. Network learning attitude survey

### 5.2 Network learning activity investigate

For the question "regular network learning activities", the top four activities are the log record, share happiness (i.e., sharing quality resources), process display and download page, as shown in Table 2, which shows that students do the network course as the reflective learning, communication, resource sharing tool. According to rough statistics, in this semester, the students' log records are reach to 450 items, the per capita is 21 items or so, which contains a profound summary of many investment concepts and insights. Also can be seen from the table 2, the network learning environment plays an important role for teaching.

Horizontal axis represent network learning activity; longitudinal axis represent network learning activity percentage.

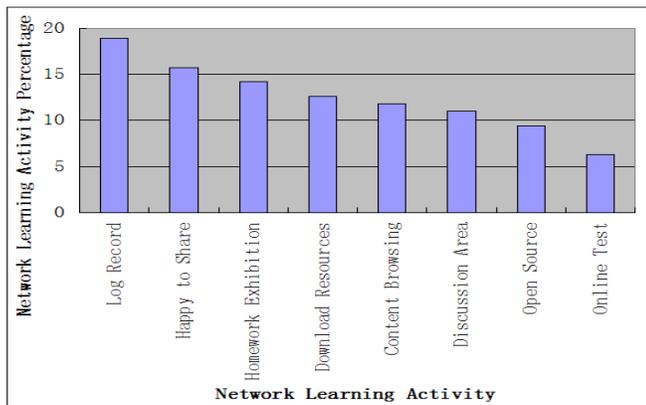


Table 2. Network learning activity statistics

### 5.3 The teaching effect investigation

For "what ability has been improved after this course" such problems, in the top three answers were "securities investment" "knowledge extraction, summary, reflection ability" and "cooperative learning capacity of smelting, as shown in table 3. "The evaluation ability of others" vote is not high, the reason may be related with the teacher's guidance, teachers should try to give students more opportunities to evaluate each other.

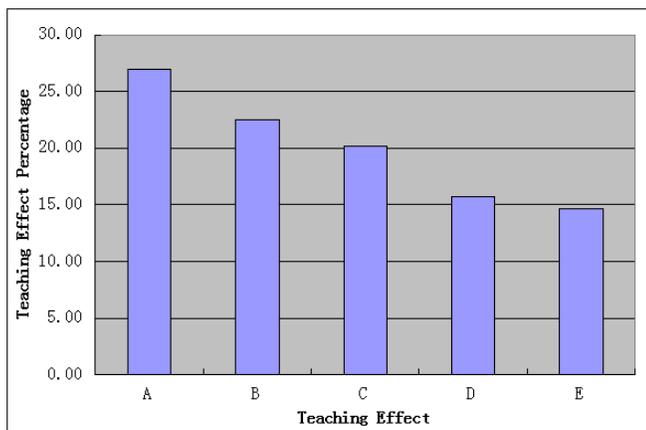


Table3. Network learning environment advantage

- A: Sharing teaching resources
- B: Facilitate communication between teachers and students
- C: Improve the interest of learning
- D: Complete the learning activities
- E: View job evaluation
- F: Record the learning behavior

From the course" investments "Blended Learning teaching practice, on the one hand, the students not only master the basic investment concepts , but also master investment methods and investment skills ; on the other hand, Blended Learning improve the students team cooperation ability, objectively evaluate ability .Through Blended Learning teaching, the students have

made great progress on the theory aspects and practice aspects , the teachers have achieved the teaching objective, good teaching effect has been obtained.

### 6 Conclusion

Blended Learning provides a new perspective for the teaching reform in colleges and universities, successful Blended Learning requires careful course design, reasonable and orderly course implementation process, diversification evaluation methods. Blended Learning cannot do without teachers' great effort, the school policy support, and the students' autonomous learning level. There are many factors that affect the extensive Blended Learning in the University, but the most important thing is that teachers can be aware of this learning mode to students is not only the acquisition of knowledge, but also including the improvement of information literacy. When teachers understand this point, they will consciously using Blended Learning in their own teaching in the concept so as to better promote student learning.

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