

# Analysis of Blended Teaching Pattern of Engineering Mechanics in the Information Age

Yanxia Wang

School of Transportation and Vehicle Engineering, Shandong University of Technology, Zibo  
255049, china

wangyx200@163.com

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**Abstract.** The reformation and innovation of information technology has brought great impact and challenge to modern college teaching. "Mixed Teaching Pattern Analysis" is the change and inheritance of college traditional teaching pattern under current information background and has a strong feasibility and necessity. The mixed teaching pattern is the model of combining teachers' "online education" "Classroom Teaching" with students' "internet learning" "classroom learning". This model is very necessary and realistic. This essay analyzes the problems and solutions existing in the Mixed Teaching Pattern. It is suggested that teachers in universities and colleges should face up to this challenge, update their teaching ideas and promote their teaching skills, improve teaching environment under this information age. By making best use of the advantages and bypassing the disadvantages, the teaching method will be optimized persistently.

## Introduction

Classroom teaching mode is based on the teacher's knowledge. Students are in a relatively passive status most of the time, so there are some problems, such as dogma, model, simplification and static. In such a teaching pattern, it is difficult to motive the learning enthusiasm of students which could stifle the personality development of students and students' creativity [1-3]. But there is also a good side about classroom teaching mode: it is easier to make communication between teacher and students.

Network teaching could not fully demonstrate teachers' teaching rhythm of supervision and control, it over emphasizing on students' autonomous learning skills, although it has many advantages, such as plenty of teaching resources and methods and knowledge scope. This pattern is lack of emotional communication between teacher and students in a traditional classroom [4-9].

Now there is a phenomenon in college: students often don't listen carefully in class, and after class, they do not do a review either; some students even are absent at class. They study knowledge only to pass the examination. They will have a temporary review and learn by rote before the test, and they spend too much time in guessing examination questions for a high score. They do not learning nothing about the basic concepts and theories but also form a very bad study habit [10, 11].

Based on the above situation, teaching method of engineering mechanics should be reformed, integrating traditional classroom teaching mode and network teaching mode. So that two ways can make up for each other, complement each other and finally achieve the teaching effect optimization. The evaluation method based on the combination of the learning-process evaluation and the final evaluation is to improve students' learning enthusiasm at the same time.

## Constitution of Blended Teaching Pattern in Information Age

Blended Teaching Pattern combined the classroom teaching activities with the one of network teaching. This pattern can be summarized as "two lines and one point". "Two lines" means network teaching and learning and classroom teaching and learning; "one point" stands for the teaching activities between teacher and students, which is the essences of two lines. Their relationships could be shown in Fig. 1.

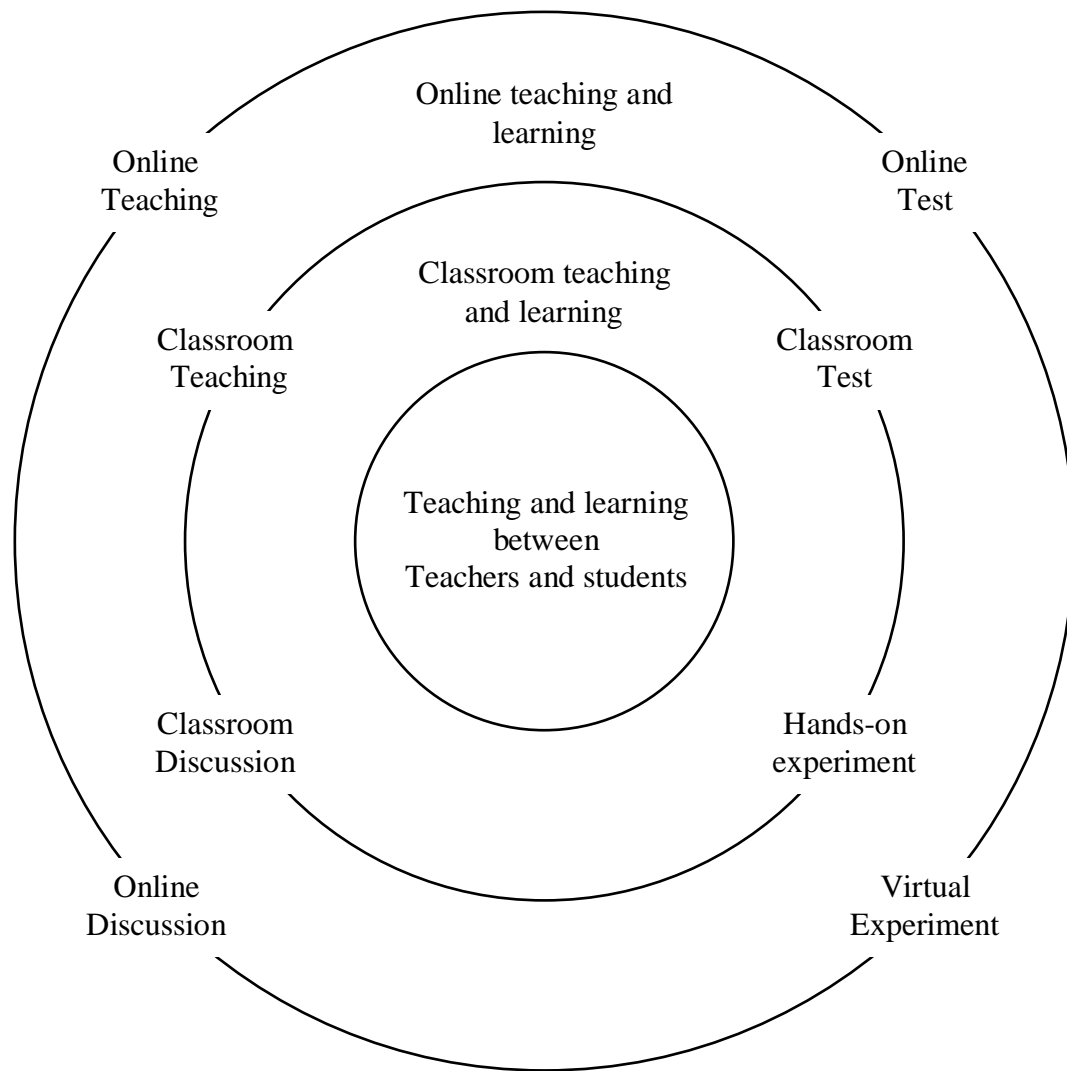


Figure 1. Composition diagram of mixed teaching pattern

### Issues Worthy of Further Discussion

Blended teaching pattern is an inheritance and upgrade of the old college teaching mode, which not only avoids the disadvantages of the traditional teaching mode, but also connects with the information teaching. The integration of these two parts plays an important role in the college teaching activities that getting to the informative teaching. But some problems still should be concerned:

**Which is the Main Part "Classroom Teaching and Learning" or "Network Teaching and Learning"?** The purpose of learning engineering mechanics is to establish a necessary engineering mechanics quality for students and improve their ability to analyze and solve practical engineering problems, so that students can use theoretical knowledge to solve the problems they encounter in their future work. These objectives must be implemented in the training and intensifying in the reality classroom. Therefore, "teaching and learning in the classroom" should be set as the main part and "teaching and learning of the Internet" as the assistant. It should be avoided that ignoring the practical need in reality world for pursuing the realization of information technology.

**How to Coordinate Online Learning?** How to judge students' learning situation in case of they just click into the classroom and then surf the internet, communicate on the internet? Because there are a lot of students may take the online learning casual to complete the teacher's task. And there is

more, some students even play video games or watch films and television program while completing learning tasks on internet. To these behaviours, teachers should strengthen online teaching assessment, and monitoring.

**How to Choose and Use Information Technology in Teaching?** The ultimate goal of any kind of combination of technology and teaching activities is teaching student knowledge. The choice and use of information technology should also follow the purpose. Teachers should be fully aware of the main position of teacher and student in the process of teaching activities. The information technology should be used as a medium of communication between student and teacher; making full use of the interactive performance of multimedia information technology could construct a good communication platform and provide help for students to solve difficult problems.

At the same time, the information technology used in teaching process also needs to be comprehensively evaluated from different perspectives and then finally decided whether to adopt the new teaching technology along with the information technology renewal cycle. Teachers should be fully aware of the important role that information technology can play as a medium of teaching, and evaluate the performance of it. Teachers should also fully consider the important role of information technology on students' thought training and performance improvement. To make sure the good results of information teaching in the process of training, the multiple functions of information teaching should be fully explored to promote the teaching activities. From the view of human resource utilization, the function of the information technology should be fully used in every link of teaching to make the teaching scene vivid and interesting.

**How to Improve the Efficiency of Blended Teaching?** The course of engineering mechanics is becoming less and less in recent years. Except a very few specialities run a 80 hours of engineering mechanics, most only for 64 hours or even 40 hours. In this case, carrying out network teaching will undoubtedly make up for the shortage of time. But college students' extracurricular activities are rich and colourful; all kinds of business activities and all kinds of competitions are everywhere; they strongly attract students to participate in. To improve the efficiency of the blended teaching and make sure that student could learn the course in the shortest amount of time, teacher should coordinate the connection between the classroom teaching and the network teaching, and avoid repetition. In addition, teachers should strengthen the interaction with students, grasping their learning situation always and adjusting the rhythm of teaching.

## Summary

With the development of information technology, the traditional teaching mode is going through tremendous changes. Multimedia, Internet and other information technology teaching methods have been gradually be popularized and promoted by college. We should combine the traditional teaching technology and advanced information technology to form a new kind of information teaching mode with the connotation of the times to meet the needs of teaching work. Teacher should continuously sum up the relevant teaching experience and lessons, and then conclude a set of ways and methods to solve the practical problems encountered in the teaching process in the process of information teaching. Through continuous teaching practice, improvement of the relevant information technology and education quality, a mixed teaching model which is suitable with current teaching situation will be formed.

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