# Discussion on the Blended Teaching Approach Based on Independent Learning about the Course Principles of Communication

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**ABSTRACT.** *Aiming at the problems existing in the theoretical and practical teaching of the course Principles of Communication, this paper discusses the teaching methods, and put forward a proposal of the blended teaching approach of Independent Learning for arousing the students' abilities of independent learning and innovation.*

**Keywords:** *Independent Learning, Theoretical Teaching, Practical Teaching, Teaching Methods*

## 1. Introduction

*Principles of Communication* is a basic course for the majors of electronic information in engineering colleges. The course has been designated the university-level excellent course in 2011, and the provincial-level excellent course in 2013. In view of the problems existing in the theoretical and practical teaching, this paper discusses the construction of this course from the aspects of teaching contents and teaching methods.

## 2. The Problems Existing in the Theoretical and Practical Teaching

Through more than ten years of education practice, the course group found the following disadvantages in the course *Principles of Communication*[1]:

(1)The contradiction between the lesson periods and the course content.In recent years ,to adapt to the demands of social and economic development ,the students training plan has been constantly improved ,the curriculum settings have been constantly adjusted , and the teaching hours have been constantly compressed .Due to the fact that there are plenty of interdisciplinary and electronic basic courses involved in the teaching process ,and the requirement to supply the development of new technologies in the field of communication , the contradiction between more difficult teaching content and fewer teaching hours demands to be solved urgently.

(2)The teaching method is unitary and backward .The theoretical and practical teaching activities overemphasizes teachers' leading function ,but neglects the subjects status of students ,which leads to the low level of the motivation and interest in learning .Since the the course *Principles of Communication* has abundant content and strong combination of theory and practice ,it's hard for the teachers to achieve the intuitive ,time-saving and high-efficiency teaching purpose using the traditional teaching method such as blackboard and PPT.

(3)The consciousness of innovation is defecting in the practical teaching process. Most universities focus on the completion of theoretical teaching and at the same time supplemented by experimental teaching.There are more demonstration experiments and less comprehensive experiments in the unitary experimental contents .Most students just operate according to the experimental steps in the process of experiment ,failing to achieve the purpose of consolidating knowledge in class .The effect of the experiment is terrible ,and the students have low awareness of innovation .

## 3. Discussion on the Theoretical And Practical Teaching

### 3.1 Discussion on the Teaching Content

(1)In order to form a complete course teaching system ,the course group has defined the teaching idea of "Aim at supplying the demands of the communication ,taking the cultivation of innovation abilitys as the foundation and students as the principle parts ."

(2)Adopt the blended teaching approach based on independent learning .According to different teaching majors ,different teaching materials are selected .On the basis of the different characteristics of the importance and difficulty degree of the course *Principles of Communication* in different major ,the relatively new teaching materials that have won the national ,provincial and ministerial awards or the textbooks with recognized high level . In addition, in order to improve students'ability of independent learning, the course *Principles of Communication* has developed a full-fledged teaching website, self-compiled experiments and course design handouts, so as to improve students' ability of combining theory with practice. Experiments and course design handouts are divided into two parts: software simulation experiment and hardware experiment. Software simulation experiment guides students to use simulation tools such as *MATLAB* and *Systemview* to design communication system or functional modules. Hardware experiment requires students to realize the design of local components of communication system on power circuit board on the basis of verifiable experiments.

### 3.2 A Probe into the Theoretical Teaching Method of the Blended Teaching Approach Based on Independent Learning

This course group actively carries out research on teaching methods, proposes a hybrid teaching method based on independent learning, forms a complete course

teaching guarantee system, enlarges the capacity of information transmission, and enhances the enthusiasm of students in learning[2].

(1)Encouraging students to carry out independent research-based learning can designate a number of independent learning topics, requiring students to form research groups, use the Internet and the library to access information, and combine their own knowledge to carry out independent learning of a specific topic, so that students can feel the role of mutual collaboration and the fun of creative learning.

(2)The three-dimensional teaching method of "blackboard + Multimedia + network course" combines the characteristics of course *Principles of Communication*, such as strong theory, large amount of information and ABSTRACT concept. In classroom teaching, we adopt multimedia-assisted teaching method and course website to demonstrate the dynamic process of information processing in communication system to students through image and dynamic image, so as to enhance students'interest in self-learning and enhance students' self-determination. Understanding of knowledge.

(3)Reforming the traditional assessment methods, facing the social needs of quality education and training high-quality innovative talents, the curriculum group has reformed the assessment model, emphasizing and strengthening the cultivation of students'comprehensive ability. The examination results are divided into ordinary results + examination results + practice results, and the "Communication Principles Course Design" link is set up independently to assess the results independently and flexibly. Teaching practice shows that the reformed assessment method can promote both teachers and students, and is conducive to the improvement of teaching level and teaching effect.

### 3.3 Discussion on Practical Teaching Method of the Blended Teaching Approach of Independent Learning

The application of modern educational technology can not only improve the efficiency of practice, but also effectively stimulate students'interest in learning and strengthen the cultivation of students' innovative ability[3].

(1)Make full use of the school's modern practical teaching environment. Using the advantages of hardware and software of the virtual simulation experiment center of electronic information and communication engineering, the excellent course website of *Principles of Communication* and the mixed teaching mode of using computer-aided practical teaching software, the teaching content is greatly enriched, the classroom atmosphere is activated, the enthusiasm of students' active thinking and creation is stimulated, and the teaching effect is remarkable.

(2)Practical teaching means are flexible. The experiment and curriculum design of the Course *Principles of Communication* rely on Provincial College Students' innovation base and various provincial and national competitions, which provide excellent practical teaching environment and foundation for the course. Practice teaching can adopt the combination of verification experiment and design experiment, and also the combination of software simulation experiment and hardware experiment, which helps to cultivate students' practical ability and innovation ability.

## 4. Conclusions

The course *Principles of Communications* involves many disciplines with strong theory and close connection with engineering. Therefore, the teaching content should form a system. In the process of teaching, we should take students as the main body, adopt tthe blended teaching approach based on independent to carry out theoretical and practical teaching, and advocate students'self-learning. In this way we can truly grasp the professional knowledge of communication principles and improve students' practical and innovative abilities.

## 5. References

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