

Research on the Teaching Design of "Flipped Classroom" Teaching Mode in Design Psychology

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Abstract: In view of the problems of less class hours, short cycle, more theoretical knowledge and less practice in the traditional teaching of design psychology, according to the new teaching means of "flipped classroom" and combined with the curriculum nature of design psychology, this paper puts forward the corresponding teaching mode reform methods, so as to improve the teaching effect. Through the analysis of the problems existing in the traditional teaching mode of the course, based on the feasibility analysis of design psychology under the flipped classroom teaching mode, this paper summarizes and combs its advantages, and puts forward the teaching scheme design of the course as the basis and implementation scheme for the implementation of subsequent courses, so as to test the feasibility of the implementation of the "flipped classroom" teaching mode in the teaching of design psychology, So as to improve the teaching quality of the course, solve the shortcomings of the course in the traditional teaching mode, and improve the curriculum training scheme of designing professional categories.

Keywords: Flipped classroom teaching mode, Design psychology, Reform in education, Curriculum design

1. Introduction

"Flipped classroom" teaching model is a new teaching model. This teaching model has a very extensive and mature theoretical and practical basis abroad, and has gradually developed in the field of education in China in recent years[1]. Many domestic undergraduate colleges and universities have begun to apply this teaching model to various courses, which has played a very important role in the innovative application of course teaching Design Psychology as a required theoretical course in the talent training program of design, the traditional teaching mode of design psychology can no longer deal with the talent training and teaching methods of current design college students. Therefore, based on the thinking and exploration of the "flipped classroom" teaching mode, we look for new teaching ideas of design psychology to lay a solid foundation for talent training.

2. Overview of Design Psychology Course and Traditional Teaching Method

2.1. Overview of Design Psychology

Design psychology is one of the basic theoretical disciplines that must be learned by design majors. It introduces multi-disciplinary methods such as cognitive psychology and behavior into design[2] As a people-oriented design philosophy course, it mainly involves the feeling and perception, cognitive psychology and emotional design in design. Through the study of this course, students focus on how to grasp consumer psychology, follow the law of consumer behavior, design marketable products, and finally achieve the purpose of improving consumer satisfaction in industrial activities. This course is an interdisciplinary subject of design discipline group knowledge and psychology. It not only involves the design of product function, structure, materials, technology, product form, color treatment, decoration technology, but also includes the social, economic, consumption and other psychological knowledge related to products. The course emphasizes the combination of theory and practice. The teaching is divided into two parts: Theory Teaching and design practice. The purpose is that students can understand the importance of design psychology in design, understand and master the content of design psychology, combine theory with practice, and apply design psychology to product design through systematic theory teaching.

2.2. Basic Technology of Moving Target Tracking in Wireless Sensor Networks

(1) Limited learning time and poor training effect

Taking the product design and daily porcelain design direction of the Academy of fine arts of Hanshan Normal University as an example, because the talent training program of daily porcelain specialty pays more attention to the cultivation of students' ceramic making skills and abilities, ceramic making practice courses account for a large proportion in the curriculum setting, and the design of design theory courses is seriously affected The course "design psychology" only has 24 class hours during the University, and is arranged to be taught within 2 weeks in the first semester of sophomore year. Because the class hours of the course are fixed, teachers often spend most of their time on the theoretical explanation of the course, stay in the output of theoretical knowledge of classroom courseware, and ignore whether students can really understand the theoretical knowledge of design psychology and apply the theoretical knowledge to design practice. The limitation of course hours also leads to the lack of design and practical teaching process to verify students' learning results. Students can only use the knowledge points explained by teachers in class, digest and absorb them after class, and then complete the design practice with their own understanding. They do not have enough time for design derivation, user behavior and psychological analysis. They can not effectively use the theoretical content of design psychology in the design training, and the training effect is poor.

(2) Lack of teaching guidance of integrating theory with practice

As a theoretical knowledge of design, although the teaching of theoretical knowledge is very important, it can not meet the students' mastery and understanding of knowledge points only by staying in the explanation of theoretical knowledge. Relying on students' simple memory and rote memorization of theoretical knowledge can not effectively solve the problems encountered in the design process in the future. Students only rely on the understanding of the theoretical knowledge given by the teachers in class and complete the design task proposition by themselves after class. They fail to really understand how to integrate the design theory into the design project, and lack practical guidance to help students better understand the theoretical knowledge points, such as product design with the theoretical knowledge of "natural matching principle" in design psychology, Because students have different understanding of theoretical knowledge, the final

design homework may be divorced from the original effect of practice. This makes the students' Union become too dependent on teachers and will not integrate their own knowledge points, showing the mode of "teachers only discipline and students only learn"[3].

(3) Less role interaction and passive teaching

Teaching is a purposeful, planned and organized way for teachers to guide students to learn and master cultural and scientific knowledge and skills, promote the improvement of students' quality and make them become the people needed by the society[4] The teacher centered teaching mode of "teachers explain on the podium and students listen on the desks and chairs" can no longer meet the current teaching methods. The traditional teaching mode leads to teachers telling their own in class. Whether students can understand it or not can not get timely feedback, and teachers can not adjust their teaching rhythm according to the situation of students, There are few opportunities for interaction between teachers and students in the classroom. They only stay in the single interactive link of asking and answering questions, and the students who can really answer questions are only a few students who listen carefully in class. Finally, students' learning becomes more and more passive, the class learning atmosphere becomes worse and worse, and teachers' teaching becomes more and more "weak", Teachers' understanding of students' needs, learning feedback becomes blurred, and the cultivation of students' innovation becomes less.

(4) Failed to set up courses for professional categories

Any design category is inseparable from the study of design psychology. It is a course with strong theoretical knowledge. After learning the knowledge points, students need to constantly use their theoretical knowledge in the practice of design projects, so as to internalize the corresponding theoretical knowledge points to achieve the purpose of understanding and design application. However, for the content to be mastered by different design majors, in addition to the general theoretical knowledge, the curriculum content should also be designed in combination with the professional content of the teaching class, so as to teach students according to their aptitude. At present, in the teaching of this course, the case explanations arranged in the course include architectural design, product design, fashion design, visual communication design and other related cases. Although the categories of cases cover a wide range, which is conducive to expanding students' knowledge, they also lack a professional knowledge framework according to the characteristics of their major. The students' Union does not understand the role and benefits of learning design psychology in their major, which requires the guidance of the teaching teacher and the prior knowledge of the major of the teaching class, In order to better integrate the course content of this major in the course.

3. Overview of "Flipped Classroom" Teaching Mode

"Flipped classroom" actually transforms knowledge transfer from in class to pre class, which is completed by students' independent learning, and the internalization of knowledge is realized in class[5] It comes from Woodland Park High School, a school in a mountain town in the Rocky Mountains of Colorado. Students miss course learning activities for various reasons, and students spend a long time in the process of returning to and from school, resulting in frequent absence from class and even less progress. Therefore, in 2007, Jonathan Bergmann and Aaron SAMs, chemistry teachers of the school, aimed at this problem, broadcast and explained the recorded PowerPoint presentation, and uploaded the video to the network to help the students who lack seats in the classroom or who are far away from the school. With the convenience of the Internet, the two teachers helped students complete normal learning activities at home. Later, he experienced the

promotion of Khan college, which was founded by Salman Khan, a Bangladeshi American, in 2004. In 2007, Khan integrated teaching videos and interactive exercise software, and established a non-profit teaching website - explaining the teaching contents of various disciplines and various problems raised by online readers with teaching videos, and providing learning tools such as online learning, self-assessment and automatic tracking of learning progress[6] "Flipped classroom" not only breaks through the disadvantages of the traditional teaching mode, but also provides a better way of learning. Compared with the traditional classroom teaching links, its teaching and learning effects are better.

4. Feasibility Analysis of "Flipped Classroom Teaching" Model in the Teaching of Design Psychology

4.1. It Helps to Make Up for the Defects of Short Class Hours and Less Practice

Design psychology belongs to a theoretical course, so there are many theoretical knowledge points. Therefore, under the teaching mode of "flipped classroom", students can watch and study the teaching videos recorded or provided by teachers through online learning platforms such as "Xuetong" and "MOOC" according to their own time before class, Maximize the allocation of course time to offline practice guidance. This not only helps to make up for the defects of short teaching hours and less practice, but also meets the needs of students with different levels of learning. Online teaching videos can be watched repeatedly, so as to consolidate knowledge points, so as to make up for the fact that teachers in the traditional classroom can not take into account the learning state and situation of each student, resulting in students being confused after listening or missing the focus of the course.

4.2. Help to Enhance the Interaction of Teaching

When students watch through the online platform, the platform will record each student's learning situation and learning time, which is convenient for teachers to control students' learning situation and obtain students' learning feedback. Teachers can clearly understand who has completed the learning task within the specified time, and can play the function of supervision and reminder. Teachers can also publish discussion and exchange activities on the platform, enhance students' participation in class, and reward students who participate in the discussion and express their opinions in the form of points. At the same time, students can also interact with teachers through platform messages to enhance students' learning initiative and make up for the lack of interaction between teachers and students under the traditional teaching mode, and teachers fail to understand students' semester situation in time.

4.3. It is conducive to students' autonomous and personalized learning

Students form their own theoretical knowledge framework through online theoretical knowledge learning. In offline class, students can consult or discuss teachers or students for knowledge points they don't understand online, and in offline practice, after students have a certain foundation for the theoretical knowledge of design psychology, Under the guidance of teachers, we can effectively integrate theory with practice, carry out design case practice, and complete the design exercises supporting curriculum knowledge. This teaching mode of "teaching before class + internalization in class" enables students to carry out personalized learning according to their learning ability, which

is conducive to improving students' autonomous learning ability[7] It also helps teachers to carry out offline differentiated guidance according to students' different learning levels, so as to maximize students' innovative development and personalized learning effect.

4.4. It helps to Promote the Effective Utilization of Teaching Resources

In traditional teaching, when teachers teach the course of design psychology, different classes need to explain it many times because of the same teaching content in each semester, and different classes and majors need to readjust the courseware content according to the requirements of professional characteristics. For example, two product design classes and one sculpture design class in the Academy of fine arts of Hanshan Normal University need to attend design psychology. Therefore, teachers need to spend twice as much time preparing lessons and three times as much time teaching, so teachers fall into the cycle of preparing lessons, which undoubtedly consumes teachers' time and energy, and also causes a great waste of teaching resources. The "flipped classroom" effectively solves this problem. Teachers can upload the general course content to the learning platform in advance by recording videos for students of different majors to learn, while offline can give professional guidance and explanation according to different majors to meet the differentiated needs of different majors in learning design psychology.

5. Teaching Scheme Design of Design Psychology under the Teaching Mode of "Flipped Classroom"

The "flipped classroom" teaching mode breaks through the traditional teacher led teaching method and involves students and teachers in all links of the course. Therefore, under the flipped classroom teaching mode, teachers and students will deeply participate in the three stages of the teaching scheme design of design psychology: pre class design stage, in class knowledge internalization and after class evaluation and analysis.

5.1. Pre class Design

In pre class design, teachers first need to build a network course, including recording courses, task setting, establishing classes and other tasks, as shown in Figure 1. The practice of recording course videos is generally controlled within 15 minutes. Teachers will briefly show the important contents in the form of short videos, such as pictures and texts, mind mapping, concise cases and so on. Enhance the interest of the video, so that students can clearly and simply understand and master relevant theoretical knowledge points; Task setting includes group discussion, question and answer session, online report and other forms to enhance online interaction and stimulate students' enthusiasm and innovative thinking; Establish classes to distinguish different majors, set different practice contents, and facilitate the notification and communication of follow-up learning tasks. After the online lecture, teachers need to publish a task list, including chapter learning videos, learning requirements and teaching objectives, and remind and require students to arrange learning progress according to their own learning situation. In the pre class design stage, students need to receive the task list issued by teachers, study independently, complete the learning of relevant contents within the specified time, and understand the teaching purpose of the course. If students encounter difficulties and doubts when watching teaching videos, they can ask teachers questions through online learning platform or wechat. If they encounter other problems in the process of learning, they can also give feedback at any time. In order to make a basic theoretical knowledge

framework for offline curriculum practice.

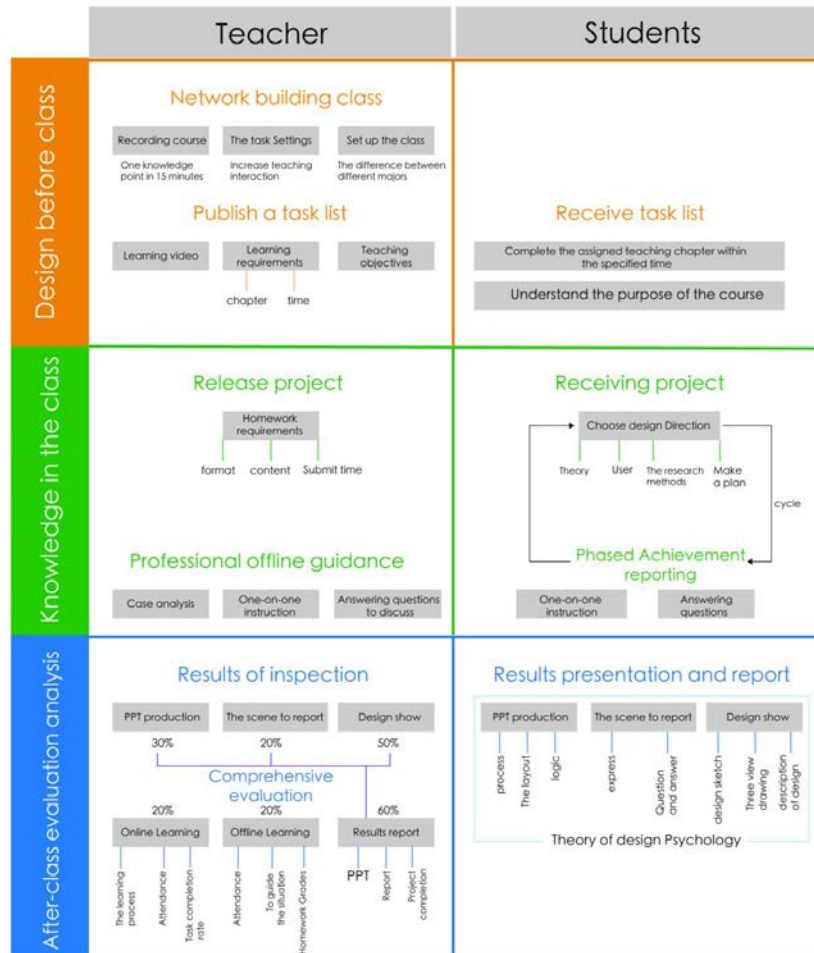


Figure 1: Guide map of teaching scheme of design psychology source: self made by the author

5.2. Internalization of Knowledge in Class

Since the essence of flipped classroom teaching mode is a process of self-learning first, then troubleshooting, and then consolidation, the internalization of students' knowledge in class after self-learning before class has changed from the traditional "preaching and teaching" to the stage of focusing on the key and difficult points of the course and individualized counseling according to the different progress of different students[8]. Since design psychology is not only a theoretical discipline, but also a design philosophy course emphasizing people-oriented, it is required to integrate theory with practice for user behavior and psychological analysis, and internalize theoretical knowledge into the presentation of design projects, which requires students to have a certain understanding of theoretical knowledge before class. In class, research on design projects is carried out in combination with theoretical knowledge. Therefore, students choose their own design direction and formulate project plans according to the subject projects released by teachers in class, including questionnaire survey, user research, brainstorming, mind mapping, sketch design, effect drawing design, etc. In this process, you can communicate and discuss with teachers in online and offline classes to determine your own project direction and implementation plan. This process is a

continuous iterative process until the final plan is completed. Therefore, teachers need to provide personalized guidance according to different directions selected by students, so as to design project practice to help students internalize their early theoretical knowledge. And master the application of design psychology in design practice.

5.3. After Class Evaluation and Analysis

In the last class of the course, students will give on-site roadshow reports on their projects and show their design process in the form of slides, including preliminary research, user analysis, scheme display and other links. Students can exercise their expression ability by reporting on stage. At the same time, students can more intuitively see the effect of works among students and learn other people's design presentation and schemes. At the same time, students can also participate in the evaluation link and put forward questions and suggestions for other people's schemes, which is also a learning process. Teachers give evaluation through the materials and reports submitted by students, so the evaluation standard should set a set of scheme in advance, as shown in Figure 2. For example, the achievement display includes three links: ppt production, on-site report and design display, accounting for 30%, 20% and 50% of the results respectively. Finally, teachers have to make a comprehensive evaluation based on students' performance in the whole learning process of the course, including online learning, offline learning and achievement reporting, accounting for 20%, 20% and 60% of the total score respectively, as shown in Figure 2. The final score of students' performance in the course is evaluated through a reasonable and objective evaluation scheme. Students can also put forward opinions and suggestions to teachers on the social platform through the new teaching model reform content, so that teachers can better improve the design and construction of the course.

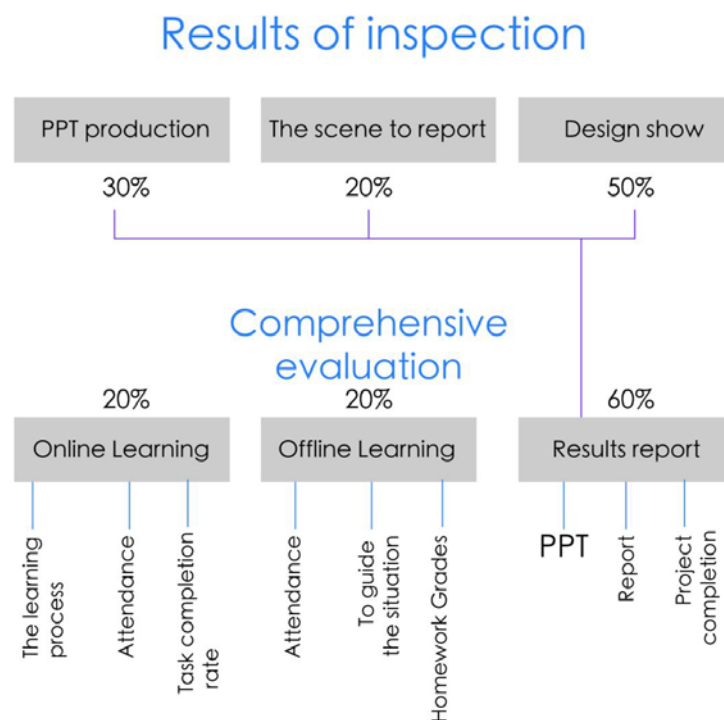


Figure 2: Score evaluation scheme

6. Conclusion

"Flip topic" is an innovative teaching mode in the Internet era. As a new teaching form, it is especially suitable for the teaching of design psychology. This interactive teaching practice between teachers and students can maximize the realization of "teaching students according to their aptitude", and also meet the maximum utilization of curriculum resources. Teachers can group students according to different majors and classes, so as to release teaching video materials, design teaching classroom activities and course project assignments more pertinently. At the same time, it is also helpful for teachers to guide the design project of "integrating theory with practice" according to the different learning conditions of students. In addition, college students can flexibly learn through the teaching video provided by teachers before class according to their own time and learning situation, so as to master the prior knowledge of theory. Advanced mobile devices also lay the foundation for course design and teaching application. The reform of the course of design psychology also needs to put the teaching scheme design into the course implementation link to verify and improve. Through students' feedback and suggestions on the learning effect of design psychology under the flipped classroom teaching mode, we can constantly improve the course reform and design, so as to improve the teaching effect of the course.

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