

Research on Teaching Methods of Industrial Design Major Based on MOOC Concept

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Abstract: Currently, the concept of MOOC has penetrated into many fields and MOOC mode has been acknowledged as a convenient way to improve their personal ability and deepen their interest under the popularization of the Internet. MOOC breaks the constraints in teachers and classrooms and allow learners to "walk" freely within their network structure with the purpose to follow the needs to choose what to learn. This has also provided new integrated path for all disciplines and MOOC concept is positively accepted by people. Industrial design major is a discipline with both liberal arts and science properties. Its two-way requirements on artistry and technicality determine its strong practicality and high difficulty. Therefore, in order to explore more effective teaching methods, MOOC concept has been applied in the industrial design major in practice, but there are still some problems. This paper makes a brief analysis of MOOC courses and related issues when they are integrated with the teaching of industrial design major. Finally, it focuses on the teaching methods of industrial design major based on the MOOC concept.

The emergence and development of information technology has brought earth-shaking changes to production and life. Currently, many things that people need to do can be solved through the Internet, such as online shopping, online chatting, online lectures and so on. MOOC is also a product of the Internet, a form of online courses produced in response to people's needs for self-improvement [1]. However, we should not think of it as a normal online course. It is the embodiment of many new teaching ideas and methods, which are more in line with people's individual needs, and the resources behind it are also quite powerful. This is also why industrial design, as a young discipline, is actively integrating the MOOC concept. The integration of MOOC concept will undoubtedly further expand the teaching of industrial design major, and many problems in the integration are raised [2]. Therefore, we should continue to deepen the positive impact of MOOC concept on professional teaching and continue to explore more effective teaching methods while overcoming problems.

1. Overview of MOOC Courses

MOOC courses, which started in the United States and have been developing for nearly 20 years, the courses were presented based on the Internet and people's needs for learning and development in modern times are integrated. MOOC courses have long been a focus of education, and their enrollment has been growing rapidly worldwide.

China has a positive attitude towards MOOC courses, and many colleges and universities are willing to accept and promote the use of MOOC courses, and even strive to promote and popularize MOOC mode in the form of teaching platform.

The widespread acceptance of MOOC teaching mode has a lot to do with its freedom in form [3]. MOOC are not limited to fixed teaching methods, which are consistent with the openness of the Internet [4]. The increasingly mature and systematic MOOC teaching can also provide full freedom for participants in option. Instead of being guided by teachers' assumptions, learners are guided by their own needs and time schedule, so that learning plans and processes, problem solving and discussion, etc. can be independently completed through the Internet. The purpose to conduct study according to needs and time schedule is achieved. At the same time, the powerful Internet has also

facilitated the learning and communication in MOOCS platform, and people can fully realize barrier-free interaction online. All these have greatly changed people's views on teaching and learning, and the traditional teaching thinking is given new enlightenment.

2. Superiority of MOOC Courses

2.1. Liquidity of Resources

The resource flow of MOOC courses mainly benefits from the opening of the network [5]. The Internet enjoys no boundaries without discrimination in gender and race, as long as a person can use the Internet, he or she be participant and MOOC courses are available to people all over the whole, allowing learners across national boundaries to use MOOC courses to harvest and absorb knowledge circulating around the world. These resources cover a wide variety of contents, including multiple languages and majors, and learners can choose organically according to their own circumstances.

In traditional teaching, both teachers and students are limited by the campus system and the time and space of the classroom, which makes the contents presented by teachers in classroom within dozens of minutes not concentrated, and it is always difficult for students to gain more expanded knowledge in class. Because of the circulation of resources, MOOC courses can bring more extensive and profound professional knowledge and information to students, and realize the convenient sharing of information.

Circulation, sharing of resources of MOOC curriculum coincided the characteristics of the Internet, which is consistent with the open concept in education. It also requires the psychological needs and time allocation to improve the quality in high pace living conditions. People can conduct study anytime and anywhere, making learning a threshold for improvement.

2.2. Independent Learning

MOOC based learning is fully independent [6]. It respects the individual preferences of the learner. In other words, students are the absolute subject in MOOC courses [7]. In classroom learning, students will follow whatever the teacher taught in class, and students have no right to choose teachers. In the MOOC mode, teachers become the carrier and entity for output of knowledge, while students are the subject with rights in option and they can choose the course according to their preference [8].

Students can also gain a powerful extension of their knowledge by studying in a MOOC. This is because, when a learner chooses to listen to a lesson, there are people from all over the world sharing the lesson with him. Therefore, this course and this platform become the communication link for all the learners who have not met before, so that they can have a broad discussion on the problems associated with them, speak freely, and finally get more and deeper thinking.

In addition, the students can independently arrange their learning time. The decision on whether to have the course or not made by themselves is actually the process to develop their ability for scientific planning and self-control.

3. Overview of Industrial Design Major

The major of industrial design also started in foreign countries and is relatively “young” in China. It has a high requirement for students' artistic creativity, so there are many pressures and challenges in their professional development. At present, more than 300 colleges and universities in China have courses in industrial design, aiming to cultivate application-oriented talents in design [9]. Their future work direction is to attract consumers through the design of product brand image so as to achieve the purpose of improving corporate profits.

Requirements on job will guide the direction of teaching. Therefore, the teaching in industrial design should be given more attention to the connection between theory and practice with focus on the two-way breakthrough of students in artistic accomplishment and thinking innovation [10]. Nowadays, the major of industrial design has been constantly adjusted in response to the changes of

social development. It has changed from a plastic art focusing on practicality into a comprehensive skill discipline. The adjustment of the discipline is not only for the expansion of the application field of industrial design in the current economic environment, but also for the purpose to keep pace with the development process of this discipline worldwide, so as to avoid hysteresis in teaching. This also reflects the strong demands of industrial design for innovative teaching methods from one side.

4. Grasp of Application of MOOC on Teaching of Industrial Design

4.1. The Problem of Time Allocation in Class

MOOC stands for efficiency. The application of MOOC in the teaching of industrial design can solve problems in a concentrated and efficient way, thus improving the teaching efficiency of teachers. For example, time for teachers in classroom is no longer pressed and teachers will have more time to answer the questions raised by students with the assistance of "Aspects of Industrial Design" to enable students to understand the history of industrial design. In this MOOC, teachers highly summarize and integrate the development process of industrial design, which is more vivid than the complicated and one by one based explanations in traditional courses. But at the same time, there is also the issue of time allocation. High-quality MOOC can help teachers save time and improve time utilization, but teachers should not rely too much on this method. It is still worth thinking about how to combine and allocate time so that there will be no "gap". Teachers must optimize their time schedules.

4.2. The Problem of Shift of Teaching Methods

In order to infiltrate the MOOC concept into the classroom, the former "cramming education" adopted by teachers should be eliminated. Instead, teachers should practice the student-oriented approach under the concept and teachers should serve as the guides to inspire students. This relates to the problem of shift of teaching method. For example, when summarizing relevant issues of "industrial design methodology", teachers should think about how to enable students to make a summary first, and students should be the major participants to discovery, think about, discuss and resolve the issues. Besides, how to give the initiative to students naturally will be another issue for teachers to think about. At the same time, when teachers infiltrate MOOC concepts or directly introduce MOOC teaching videos for industrial design majors, they should also think about how to strengthen post-study communication with students.

5. Teaching Methods for Industrial Design Major Based on MOOC Concept

The teaching in industrial design is closely related to art education, which requires practicality and is closely related to the evolution of the current market environment. This requires that the teaching methods of teachers in this major should keep pace with the times in an open and integrated manner. The the previous teaching mode with limitations should be abandoned. The MOOC concept is to break the traditional educational concept. It will be beneficial to improve the teaching effect of industrial design major. Besides, the scope for resources can be expanded and their independent learning habits will be developed. Therefore, we have listed some new teaching methods of industrial design specialty based on this concept.

5.1. To Develop Dialogue Based Classroom

Based on the MOOC concept, the normal way of communication between teachers and students is broken. Teachers are no longer the only protagonist in classroom. Students are no longer be passive listeners in classroom. Therefore, teachers should make good use of the MOOC platform and encourage students have interaction in classroom. For example, when learning the basic problems in "*Three-Dimensional Design*", teachers and students can construct the basic three-dimensional knowledge space on the Internet with the help of the MOOC course of "*Basics of Three-dimensional Design*", and then conduct more in-depth discussions. When discussing and

communicating, students and teachers are on the same footing, and the atmosphere is harmonious and the expression should be made in relaxed manner. In this way, students can speak freely and have a full dialogue with teachers and classmates, and their ideas and innovative ideas on three-dimensional design will be maximally stimulated.

5.2. To Break the Stereotyped Courses

The step-by-step based teaching in class is a process from the simpleness to difficulty, which is conducive to building up the knowledge system for students. But also because of its adherence to the structure, the atmosphere in the classroom is characterized with rigidity and inflexibility. The introduction of MOOC concept into the classroom can counteract the previous inflexible teaching sequence and steps and break the fixed classroom. Teachers cannot completely arrange MOOC courses in teaching professional courses, instead, they selectively adapt them. Such as, the whole teaching schedule remain unchanged and in the teaching knowledge on “symmetry and balance” in *Tow Dimentional Composition*, students should be allowed to review on some content of the excellent products of appreciation for this principle of design, so as to strengthen the relationship of knowledge. In such condition, MOOC courses can be used and students should be required to keep in touch with appreciation and design techniques. By doing so, the knowledge learned or to be learned should be comprehensively mastered like pearls in the string so as to expand the scope of knowledge. As a result, the knowledge system can be built naturally.

5.3. Integrated Cooperation Model

In the above two points as we have mentioned, the application of MOOC courses has been mentioned, but the courses only show their functions as auxiliaries for students after class. Integration refers to apply MOOC courses into the classroom and be part of the classroom. For example, when teaching the relevant content of *Design Sketch*, teachers can make full use of the *MOOC Modeling Foundation -- Design Sketch*, and scientifically intersperse it according to the design process of the lecture to stimulate the discussion of problems among students. *Modeling Foundation -- Design Sketch*, a MOOC course with rich and vivid knowledge, enables students to extend their horizons and broaden their thinking in class, which organically makes up for the defects of tediousness and limitation of traditional teaching. Of course, the MOOC courses are presented in form of video, which does not mean that the teacher does not need to speak. On the contrary, the teacher should supplement the contents involved in the course and guide the students to understand what they have learned from the perspective of the students.

The involvement of MOOC in class is not the ultimate goal. Teachers should also encourage students to independently explore and make use of MOOC resources after class. In other words, the integration of MOOC mode should also be reflected in students' independent learning to realized the integration of learning methods.

6. Conclusion

The major of industrial design can have certain association with many fields of social and economic development, which has strong application value, which undertakes the task of providing talent guarantee for these fields. The reasonable teaching method is directly related to the quality of cultivation of talents. Therefore, it is the right choice to introduce the MOOC concept in teaching related to industrial design. Based on this concept, teachers should create a dialogue based classroom, break the fixed curriculum and create a integrated mode with constant attempts and study on more innovative methods. At the same time, the MOOC model only provides teachers with an innovative orientation and thinking, which does not mean that all approaches should be subject to this. On the contrary, teachers should take this as the starting point in research on teaching method and explore more teaching possibilities. As a result, the teachers will be the pioneers in this field.

References

- [1] Li Mengnan, Ma Hongjiao, Mi Shengjie. Research and practice of MOOC-based teaching reform in professional courses on product design under the background of "Internet +"[J].Art Science and Technology, 2019, 32(04):55+57.
- [2] Shi Min, Xi Libo. Exploration and analysis of independent learning mode in professional product design courses under MOOC environment [J].Popular Literature, 2018, 000(014):175.
- [3] Zhang Hongtao, Zhan Xin. Construction of MOOC teaching quality assurance system for design in Colleges and Universities [J].Industrial Design, 2020, No.164(03):39-40.
- [4] Zhang Yu. Research on blended teaching based on MOOC [J].The Guide of Science & Education (Electronic Edition), 2019, 000(006):82-83.
- [5] Chen Daoquan. Exploration and practice of mixed teaching mode based on MOOC [J].Journal of Higher Education, 2020, 000(003):116-117,121.
- [6] He Li, Tang Li, Liu Jun. Blended teaching design and practice of MOOC based on deep learning[J].Computer Education, 2019, 289(01):150-153.
- [7] Zhao Yue. Research on teaching reform in classroom for design major under the background of Internet [J].Industrial Design, 2019, 151(02):42-43.
- [8] Hou Kexin. Discussion on teaching reform of industrial design major in higher vocational colleges aiming at career action [J].Science & Technology Information, 2020, V. 18;No.581(08):136+138.
- [9] Duan Wenxin. Teaching reform of industrial design major with innovation ability as the core [J]. Art Science and Technology, 2018, 031(007):30,157.
- [10] Gao Zhimin. Research on the application of PBL in the teaching of product design major in universities[J].Electronic Journal of new Education Times (Student Edition), 2019, 000(029):P.1-2.