

Innovation and Implementation of E-interactive Teaching and Learning System for History Theory Course of Sino-foreign Cooperative School-running Specialty

Tiejun Zhu^{1,*}, Michael Berry²

¹ School of Art, Anhui Polytechnic University, Wuhu, 241000, China

² English Language Centre, University of Liverpool, Liverpool, L69 7ZX, United Kingdom

Abstract

In the course system of Sino-foreign cooperative school-running specialty in Chinese universities, the history theory course occupies a certain proportion, but teaching results are less effective, especially in design major. The foremost reason is that the students of design majors in Chinese universities emphasize more on practice and less on theories and they have less interest in learning the design history course. In order to change the phenomenon, we carried out an exploratory research where the course of Modern Design History, set up by China and United States universities' cooperative specialty, was regarded as a pilot of reform. We creatively applied diversified and emerging E-teaching and learning innovative model for design history course and launched empirical research by adopting current international prevailing network teaching resources and methods. Through practical application, the teaching effect was found outstanding.

Keywords: Sino-foreign cooperative school-running specialty, History theory course, E-interactive teaching and learning system, Innovation, Implementation.

Received on 09 October 2018, accepted on 29 October 2018, published on 30 October 2018

Copyright © 2018 Tiejun Zhu *et al.*, licensed to EAI. This is an open access article distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/3.0/>), which permits unlimited use, distribution and reproduction in any medium so long as the original work is properly cited.

doi: 10.4108/eai.13-7-2018.156641

*Corresponding author. Email:ztj@ahpu.edu.cn

1. Introduction

Mostly initiated in the 1980s and 1990s, the design specialty in Chinese universities has a short history and weak theoretical research and teaching. According to researchers' years of design history teaching experience and extensive investigation and communication, students of the major are less attached to design theory course, and they are less interested in learning. "In modern designing art, as for many people, theoretical education about art design is even

insignificant for art design education".^[1] Moreover, "on account of a single teaching method and antique teaching contents, the actual teaching effect is not as ideal as expected".^[2]

The course, *Modern Design History*, regarded as a basic course in the curriculum system of art design specialty of Chinese universities, plays an important role in theory teaching. Hence, researchers select *Modern Design History* as a trial spot, which belongs to the course of Visual Communication Design major, established by Anhui Polytechnic University and University of Bridgeport. Fully relying on Sino-foreign educational resources and

advantages, they develop E-Teaching and learning innovative model. That is establishing the network virtual environment where all learning styles of the teaching module and function and the application of learning system can be developed by means of radio, television, computer, Internet and mobile phone, which is aimed at taking the promotion of the quality-oriented education as core and the elevation of teaching quality as basis. Focusing on changing the traditional teaching mode, this innovative mode is tending to make students overcome learning habit of relying on teachers and cultivate the independence of mind and the autonomy of learning with the help of flipped classroom. Additionally, the mode can change boring theory teaching into interesting interactive and flipped teaching as well as create a digital online teaching platform and teaching environment, which will contribute to improving the students' ability and efficiency of E-learning, stimulating learning enthusiasm, giving full play to personality and promoting individualized learning.

2. Traditional teaching mode resources of the design history course

Principals in two universities particularly discuss the educational teaching plans and the talent training programs of the design major, a Sino-foreign cooperative major (Visual Communication Design major in China is called Graphic Design major in the US).

This Sino-foreign cooperative major and the content of course cooperative design mainly include: jointly developing the design of teaching process table; providing courses, teaching management and syllabus to Anhui Polytechnic University according to the requirements of major construction; providing qualified and experienced teachers; and appointing special personnel to supervise teaching and administrative work, including coordination and communication to ensure the normal and orderly major construction and course teaching; responsible for teaching

qualification training and academic exchanges for teachers of Anhui Polytechnic University; both sides must do their utmost to maintain the quality of teaching and ensure compliance with all relevant certification standards."The teaching of design theory keeps a large portion of the teaching system of design majors in universities on the basis of well-studied design theory in the US. Just take Graphic Design major for instance, design history courses usually take up 20%-30% of compulsory courses in the major." [3] Therefore, in the teaching plans of the major, Modern Design History, a basic course in design major appointed by US University, begins in the third semester with a total of 3 credits for 48 teaching hours. Furthermore, other relevant courses such as Art History I, Art History II and History of Graphic Design have contributed to the systematized learning of design theory system. Parts of these courses introduced relevant professional textbook, teaching contents, teaching methods and teachers from cooperative university of the United State. Depending to the need of establishing the course, comprehensive learning of design history courses including Modern Design History will not only help students criticize the role of design cultural field from the perspectives of culture and history but also learn from history. What's more, founded on theoretical guidance in practice, developing the historical review of design practice will improve students' abilities of thinking and innovation in design.

Since the establishment of Visual Communication Design major in September, 2014, teachers in the major has adopted a bilingual teaching and other new teaching methods. However, resulting from these factors like defective teaching equipment, big class size and the traditional face-to-face teaching environment, teachers' teaching potential fails in digging deeply and developing fully. At the same time, students' learning autonomy and interest can't be stimulated effectively. Therefore, as we can see from Table 1, the current teaching resource is not suitable for the new mode of E-teaching and learning reform.

Table 1. The Initial Opening Situation of Visual Communication Design Major and Teaching Resource List in September, 2015

Name	No.	Name	No.	Name	No.
Teachers	1	Teaching courseware	10	Thesis and teaching achievements	7
Students choosing courses	39	All kinds of exercises	39	Test bank	2
Multimedia devices	1	Online teaching resources	0	Teaching video	12
Teaching practical base	3	Number of computers	1	Classroom (traditional pattern)	1

3. The construction and practice of e-teaching and learning platform

In view of the limited online teaching resources in existing curriculum resources, so it is regarded as the breakthrough point and a key point of curriculum reform.[4] For this

reason, on the basis of reforming the traditional classroom and realizing the hardware configuration, construction and upgrading of online teaching platform, researchers made full use of the relatively new and mature online educational resources and learning interface in the current international educational circles, mainly including the regular release of e-survey, course e-interaction platform, online operation of homework checking, MOOCs, online teaching video

resource and course WeChat public platform, etc., and specifically applied to the teaching of "Modern Design History" in the first semester of the 2016-2017 academic year (September 2016, the second year students of Sino-foreign cooperative major, 35 students in total).

The teaching composition and module setting methods are as follows: e-surveys are issued one week before the beginning of the course, course midterm examination, one week after the end of the course; course e-interaction platform, online operation of homework checking, MOOCs, online teaching video resource, course WeChat public platform and other resources and tools are integrated into course teaching system. Each student is guaranteed at least four opportunities to enter course e-interaction platform for learning and communication; teachers use the online homework checking system to complete and feedback voice correction at least twice; a total of 24 excellent MOOC courses and 12 short videos in Chinese and English with strong relevance to Modern Design History are recommended to students, which are selectively completed after class and are communicated in class. The application of Wechat public platform runs through the whole course and further deepens. The above methods and tools have laid a solid foundation and an effective guarantee for the practical application of flipped classroom. The following is a detailed introduction:

3.1 The construction of teaching facilities

Above all, specialized infrastructure and hardware devices are needed for the construction and practice of E-Teaching and learning innovative mode. Therefore, based on the investigation of building programs and beneficial

experiences from the flipped classroom of some universities in the UK, Singapore and Taiwan, managers and teachers not only choose suitable classrooms to rebuild except for some existing multimedia devices, new wireless networks, LCD and audio and video devices but also establish some specialized tutoring classrooms for group discussion. Additionally, in order to build information based teaching environment, researchers also deploy network computer rooms and audio classrooms with the aim to take advantage of online teaching platform in diversified forms.

3.2 The communication and feedback upon e-survey

Survey feedback mechanism itself belongs to one of teaching modules and online learning and communication. With the periodic publication of online survey on SurveyMonkey, an international famous online survey platform, researchers find that students can be encouraged to use network and to interact with teachers online more frequently in online teaching, which will be beneficial for the dynamic adjustment of teaching.

On the one hand, the setting of questionnaire content and question type are based on the nature and characteristics of the course of design history theory, on the other hand, it focuses on the application of flipped classroom teaching mode and the evaluation of teaching effect. At the same time, it deeply locates and constructs the theoretical framework and practical basis of the survey from the aspects of students' emotional factors of learning cognition, the different performance of experience, the psychological expectation of achievement effect and the orientation path of evaluation suggestions.

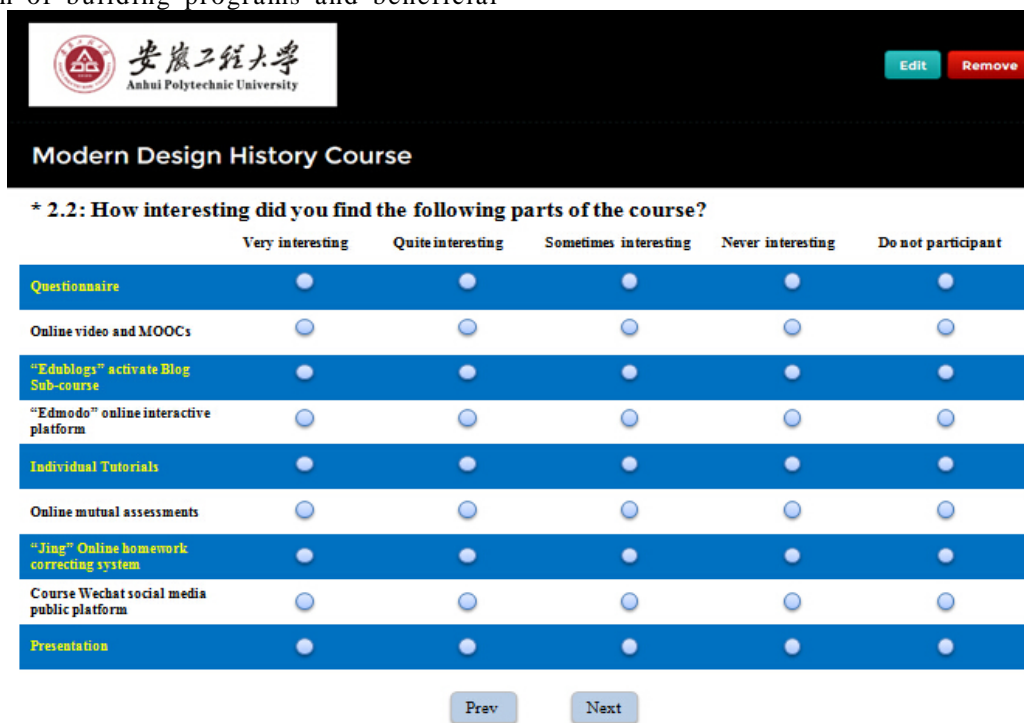


Figure 1. The Content Interface of E-survey

- (i) The pre-class survey of applying flipped classroom mode and the discussion of learning task list. Since the initial establishment of the flipped classroom in 2007, it has become a hot issue in the global educational field, the biggest feature of which is that the roles of teachers and students have changed in the teaching process. Besides, it also renovates the organization and linear process. What's more, flipped classroom is a specific type of blended learning design which changes the traditional teaching method with the help of technology and introduces the concept of practice by conducting a series of learning activities as well. As a result, flipped classroom teaching method is adopted in the E-Teaching and learning innovative mode. In order to make students better understand and adapt to this new teaching mode, researchers ask students to take part in an online questionnaire before start the course. Based on introducing flipped classroom, on the one hand, the questionnaire gives an initial assessment of the students' perception and interest to the mode. On the other hand, on the basis of knowing about students' learning abilities and learning status, it also provides an occasion where teachers can discuss with students about teaching tasks in different periods, point out those important knowledge points or teaching difficulties for students and collect their suggestions in order to conform to the flipped classroom.

There are two parts including 45 questions in the questionnaire, the first five questions of which are basic questions for students. In the first part, 20 questions are offered after the succinct statement of the concept, purpose, form and mode of the flipped classroom. More concretely, the first three questions are set up for asking students whether they know flipped classroom. The next five ones are asking students' attitudes towards flipped classroom model in the teaching of Modern Design History. Question from the tenth to the fifteenth discussion about the form of online teaching platform while questions from the sixteenth to twentieth talk about the potential problems and reasons for the students learning process. In the second part, first of all, the learning goals and teaching tasks about the course are briefly presented in a list and another 20 questions are also offered here. The initial four questions involve students' awareness towards the course while the next six questions are about students' understanding and assessment of learning tasks set by teachers. Questions from the eleventh to the sixteenth are designed for asking students what they want to learn, adjust and suggest. In the last four questions, students are asked to answer their expectation and interest according to their peculiar situation.

- (ii) The questionnaire about teachers' guide in class and students' learning effect investigation. In the mid-term examination stage in the course, researchers survey students' feeling towards flipped classroom in the form of questionnaire. After survey, they provide targeted guidance for each student upon feedback. The

questionnaire includes thirty three questions, the first six questions of which are about students' feelings. Questions from the seventh to the twelfth discuss the problems and the reasons for those troubles students meet in learning. From the thirteenth to the nineteenth, students need to make assessments about the current online resources. The next five questions are about students' expectations. While the last six questions talk about students' learning interest, contents and methods in second half course study.

- (iii) The questionnaire about teaching assessment. After finishing all teaching tasks, there is a questionnaire including thirty-five questions for students to make teaching evaluation. The whole questions are divided into eight aspects which are the effectiveness of flipped classroom mode, the operation of online teaching platform, the applicability of online learning resources, teacher's mastery of flipped classroom, the result of communication between teachers and students, the suggestions about the mode and platform, the effect of new assessment method, and self-assessment of students which is to evaluate self expression during course learning.
- (iv) The network testing system. The question bank module's design function of SurveyMonkey can easily set various text types, like a single choice, multiple choice, filling the blanks, answering questions and even drawing, which therefore, can be regarded as network examination system. At the end of the course, the teachers can ask students to have an online test in class to convert the traditional way of examination.

3.3 The design application of e-interaction

Researchers and teachers have tried to apply a new teaching method into a class that is to preserve the traditional face-to-face teaching on the one hand and to finish other teaching modules through building an E-interactive platform of course on the other hand. To illustrate, the integral network transplantation and online working of question answering, presentation, discussion and students' valuation and other teaching procedures have reached the creative combination of off-line classes and virtual classes, which not only includes the active atmosphere of classroom teaching, but also involves the technology of the latest network teaching. Specific executing processes are as follows: First, teachers import the teaching tasks, teaching courseware, audio and video material, relevant websites or questions into the online interactive system, by combining the knowledge to be taught in class. That is to say, teaching on the spot means that teachers will give the lesson by pointing out the learning task and the core knowledge of the lesson for students. Then, students should log into the online interactive system to learn autonomously and finish the task assigned by teachers in class. While teachers will answer students' specific questions in the whole process one to one. Furthermore, teachers will also ask every student to selectively evaluate the performance of other students after finishing their own studying task, which can not only helps students to have real-time communication and discussion, but also helps

students to find out other students' unique understanding and thinking when analyzing problems in class.

The interactive online platform of course is supported by the global educational content sharing platform and the electronic network teaching platform, Edmodo (Figure 2). First, the teacher should create a class group of the course with all students joining. Then, the classroom should be

provided with network and computers. Due to the large number of 35 students in one class, students will be taught in two groups separately and each group will be taught for three teaching hours per time to ensure teacher's tutoring quantity and teaching quality and to advance the course's exploration, speculation, interaction and practice to a new height.

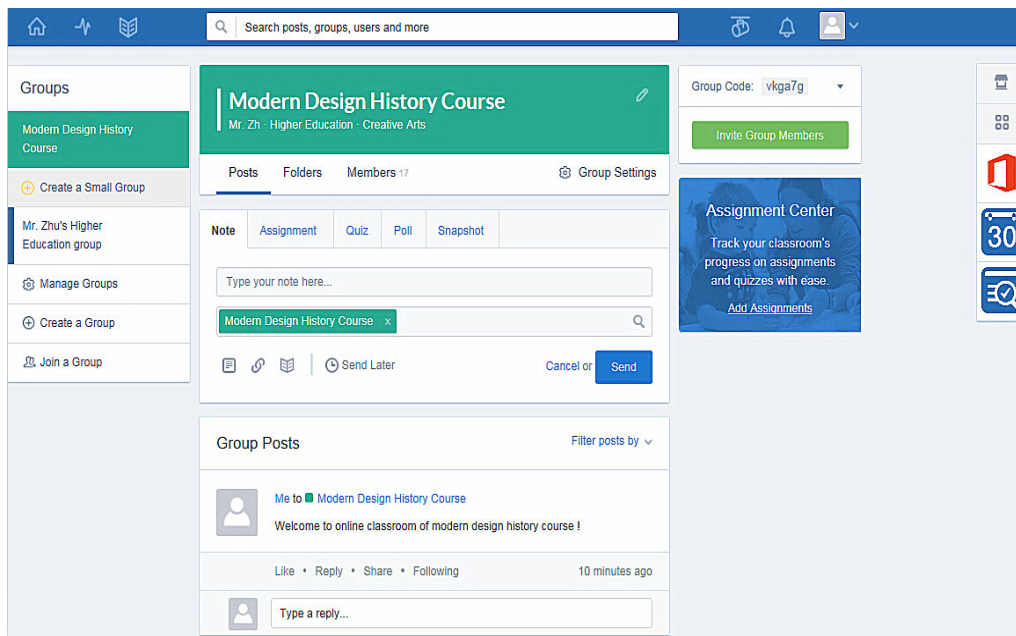


Figure 2. The online interactive interface of the course on Edmodo

3.4 The online operation of homework checking

Jing® is popular video capture software and its features are used by researchers to create an online homework checking system and a video sharing platform. It is unique in that not only students can submit jobs on line and teachers can correct the homework and give feedbacks on line through implanting the homework checking into the network, but also teachers can check students' homework in audio and video form rather than in the traditional writing form. On account of that the audio can deliver much more information than the several written commenting sentences, so teachers can stress the key mistakes and extend the relevant knowledge or even give an example to illustrate in the audio or video checking. At the same time, teachers can also make careful and clear homework value, which will effectively avoid the students' incomplete understanding for teachers' comments or suggestions that often happen in the traditional checking. Thus, the comprehensive and profound homework checking can be achieved. Besides, in this way, students will know about the whole process of teachers' checking and find the teachers' thinking perspectives, thinking ways of solving problems or design thinking from it in a more accessible form, like communicating with teachers face to face instead of just seeing some emotionless comments.

The creative application of Jing's online homework checking system (Figure 3) has evoked strong responses among students and all of them have a highly opinion of the system when giving suggestions and feedback about it.

Meanwhile, Jing brings novelty of learning to students and arouses their learning interest, making them love or even expect teachers' homework checking. As a result, watching the comments in media form has become one of their learning hobbies. "Homework online submitting and the checking is one link of attracting students".^[5] Apart from applying Jing's online homework checking system into practice, in terms of these students who want to pass the TOTEL in Sino-US cooperative class, teachers should promote them to practice writing regularly and recommend them to use Jukuu Pigai network, Checker software or other free net resources to check and correct mistakes and improve the writing by themselves.

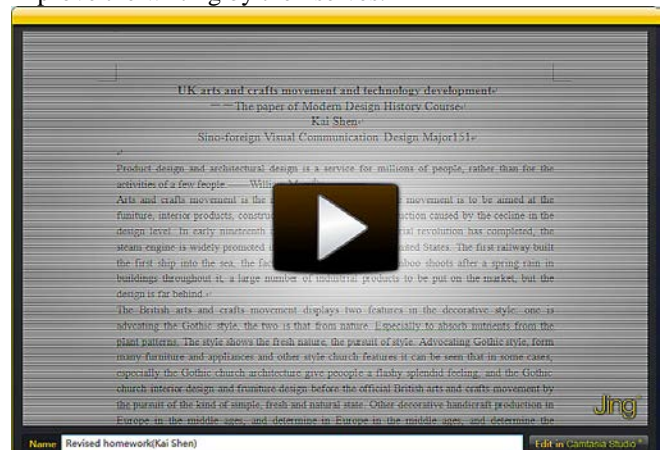


Figure 3. The online homework checking interface

3.5 The introduction of MOOCs

As a very convenient online distance education platform, MOOC is commonly used in nowadays. Besides, MOOCs in English and other globally diverse learning channels without limit on time and space have the relatively real foreign learning environment, the new teaching modules and the broaden international vision, which comes a unique advantage to those students in Sino-US cooperative majors. Most importantly, the relevant online courses on MOOCs not only involve the rich teaching experiences, refined knowledge system and particular teaching methods from famous teachers, but also include the display of combining the historical design and the latest design, which can provide *Modern Design History*, a boring course most students think before, with continuous fresh and high-quality learning resources and greatly enhance students' learning interest, self-learning consciousness and their design innovative thinking abilities.

To this issue, according to the major characteristics of Sino-US visual communication and the course characters and contents of *Modern Design History*, researchers investigate students' familiarity with MOOCs. On the one hand, they specially open the introductory lectures about MOOCs, resource library and how to choose and enter to the MOOCs for students before classes. On the other hand, with many professional teachers together, they also pick out 24 excellent courses, more highly related with *Modern Design History*, from the abundant resources on MOOCs. There 24 courses are divided into four categories with 6 courses in one category for students' reference.

3.6 Online teaching video resource

In terms of flipped classroom teaching mode, online teaching video resource is a crucial factor, which is the foundation of "learning first" for students. In order to realize the flipped classroom, it is proposed to be reposition the role of teachers and students as well as making and providing high-quality teaching videos. Therefore, on the one hand, teachers pick out 12 English and Chinese excellent short videos from network or radio and television resources according to the important points of the course such as MOOCs, video on demand platform, Youtube, or Ted. On the other hand, 12 teaching videos are produced according to the teaching experience and mastery of the knowledge architecture, which mainly includes the introduction of learning experience, interview of famous teachers, the creation of interest, situation simulation and so on. In order to fully focus learners' attention, the length of videos is usually no more than 15 minutes. Each video is not isolated, but closely linked to each other, and a set of orderly and coherent video teaching system is established. Besides, to ensure the teaching video resources can be download and watch any time, the lecturers have set up a learning space and registered a class group as well as an intelligent cloud database respectively on the internationally popular Bb(Mobile Learn)APP and China's most popular social media platform QQ. All videos have been uploaded and formed a unique online cloud service learning platform. Students can download them before classes optionally or

through mobile devices by scanning the QR code, which enables them to learn autonomously without the limitation of time and space. In addition, students can think about the problems according to the video content, and then bring these problems to the classroom to ask teachers for advice or propose in group discussion, so as to realize the classroom reversal.

3.7 Establish a WeChat Public Platform and Analyze the Data Online

With the aim to extend and use the online platform completely, researchers establish the public platform of the course on WeChat, the most popular social media on China Mobile's network, sharing course resources and learning experiences on it. Students in the course are needed to upload the information of their learning materials, elected according to their hobbies, and share the learning experience in time. Meanwhile, the platform will be promoted to those students from other majors or even to the outside society to obtain the largest-scale follows, taking the outside learning resources and helpful experience. After setting up and expanding the database for learner's self-studying, on the one hand, researchers will offer a dynamic analysis for all kinds of online learning information and relevant data, mainly including 3 aspects. The first is the analysis of the properties of the following users, like gender, age, major, educational structure, school or the types of company, city or province and so on. The second aspect is the analysis of course resources and their properties, including the types and quantity of the resource, the topics and the relevancy of the followed information, the learning heat, focus point and keyword analysis. The third is the statistics about the information's use and reading with 4 indexes that is the number of users and time of browsing, discussion or commenting, the sharing, collecting or transmitting, and clicking the link to the original text.

Moreover, by collecting all autonomous learning information and resources data uploaded by students, researchers plan to carry out the measuring analysis of students' learning activities, the real-time assessment of learning content, learning target and learning expectation and the directive leading with threes objectives. First, according to the online data of WeChat public platform and the feedbacks among students, researchers will collect and classify the learning contents, interesting points and learning expectations of students, from which students' learning activities and thinking patterns will be analyzed, simulated and located and their deep or potential learning expectations can also be searched by analyzing data. Second, on the basis of republishing students' learning activities on the Internet and analyzing their learning contents, the targeted and orientated evaluations can be carried out differently for all students of the course, all professional teachers in the universities opening the course and the social groups on the public platform by taking the advantage of the function setting of these micro activities and the feedback mechanisms on the WeChat public platform. Third, based on the data of assessment feedbacks and further analyzing, refining and matching, the directive feedbacks and the

targeted suggestions will be offered to personal students or the same learning groups to help them to choose the most suitable learning contents and learning activities through publishing directive information on the WeChat public platform.

4. E-teaching and learning flipped classroom design

4.1 General idea

- (i) Subsection propulsion. Based on the online teaching platform, the flipped classroom teaching mode puts forward different requirements for schools, teachers, students and even parents. Therefore, both AHPU and *Modern Design History*, which have not carried out and implemented flipped classroom mode, should have a certain adaptation and adjustment processes. "And it needs to find out the specific rules."^[6]The flipped classroom designing scheme adopts the principle of full communication, connection with practice, point to area and step by step.
- (ii) Reaching balance. To really give the class to the students, "encourage students to learn"^[7], actively mobilize and develop students' independent learning and subjective initiative, fully release their potential and respective learning expertise, Let students be in the active state all the time in the flipped classroom and become the leading role. At the same time, teachers should guide and seize the core, master the balance.
- (iii) Linkage innovation. Absorb a variety of latest and online teaching methods and get integration and innovation, and "require students to be creative, cooperative and organizational"^[8],at the same time, innovation reform and experiment should be based on the school situation and academic situation, experiment while perfection, in order to fit the appropriate matching innovation and personalized innovation.

4.2 Application path

- (i) Learning before teaching, flip completely. Take full advantage of all kinds of resources to create independent learning space for students, motivate students' learning motivation and interest, guide and encourage students to carry out proactive and exploratory learning way. "In addition, students can be encouraged to design relevant projects by themselves, deepen teaching content and actively guide students to participate in research projects,"^[9] then teachers combined with the learning effect, problem feedback and guiding teaching to completely realize the flipped classroom.
- (ii) Real-time synchronization and trinity. The online teaching platform is used to establish virtual classroom and form an O2O combined teaching model, realizes real-time synchronization and mutual coordination of trinity course system (online teaching, classroom teaching and offline independent learning).
- (iii) Individual coaching and bilingual teaching. In view of the reality and characteristics of Sino-foreign cooperation specialty, bilingual teaching is adopted in the centralized teaching link to systematically improve students' English proficiency, and "teachers should conscientiously and effectively design communication and teaching process, solve the problems of students at different levels to let them truly achieve independent and personalized learning in teaching",^[10] provide individual counseling to each student on a regular basis, set up individual study archives and provide students with personalized learning paths.
- (iv) Cooperative learning and group implementation. 5 students were a group. Each group makes up of 5 students, who work in groups or complete assigned tasks and present reports and assessments. In addition to improving students' communication skills, it is also helpful to enhance team cooperation awareness and personalized learning experience.

- (v) Network interworking and resource sharing. Students are required to share their independent learning resources on the Internet and make recommendations, which can effectively expand learning resources and enable other students to focus on the key points quickly; Set up a teacher-student interaction platform and peer assessment link, Students are asked to complete the design works or small papers, and other

adjustments on the basis of analysis and summary. "Dynamic evaluation emphasizes the process of evaluation skill acquisition, highlights the integration of teaching and evaluation, explores and discovers students' learning potential, and effectively interferes with teaching, which is conducive to consolidating teaching activities and improving students' various



Edublogs HomeHelp and SupportThe EdubloggerCommunityGet A Blog!

Log in

The road to modern design history

Just another Edublogs site.



Search

Main menu
[Skip to primary content](#)
[Skip to secondary content](#)

Welcome!

Welcome to your brand new blog!

This is a sidebar and can be changed in [Widgets](#) in your dashboard. you can also modify number of sidebars in [theme options!](#)

Mixed abstract and surrealistic style

Posted on May 9, 2016 by Zixin Zhang [Reply](#)

Today, in activate blogs course, I knew six artists and their amazing paintings and styles. I have many interests for that because I like art and I am a design major student as well.

Of these six artists, I knew one. He's name Piet Mondrian. He was very famous in the world of modern design history. He was the leader and main artist of neoplasticism. He created a lot of images for neoplasticism. For example, Composition II was his representative painting. He developed an abstract style using black lines and primary colors on a white background. This painting is attached as follows.

I also like the artist, Rene Magritte. He was a surrealist and challenged the viewer's preconceptions of reality. I think he was a creative man and have a lot of new ideas for his painting and art. He ever

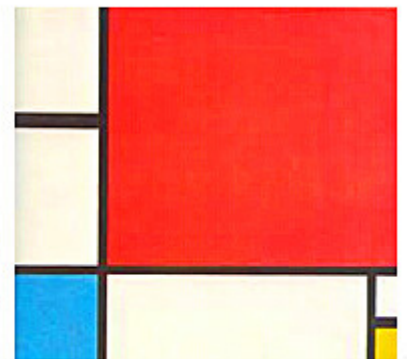


Figure 4. Blog interface (Bilingual Teaching) released by Modern Design History blog

assignments to carry out network mutual evaluation; A separate blog formula course is offered to recommend the Edublog (<http://edublogs.org/>) education blog site to students, and users are required to register and create a personal course blog. In class, students are allocated the topics of study and discussion (Figure 4), so that they can think deeply and combine with the reality. A blog will be published in class to show the experience and effect of instant and independent learning. In the same way, other students can also post comments.

- (vi) Dynamic evaluation and real-time adjustment. By means of an online questionnaire, random interview and regular discussion, we can fully understand students' learning status, effect, feelings, and make

abilities." ^[11]

4.3 E-teaching and learning mode

Reasonably dividing the teaching cycle of the course, students can realize the flipped classroom e-teaching and learning mode by the combination of online and offline independent learning and various activities and links, such as group collaborative learning, individual tutorial, centralized teaching, group task, written work, network mutual evaluation and so on. "Breaking the original spatial order, this mode revolves around the main axis of knowledge, method and subject to carry out continuous space production and form the construction of innovative living space."^[12]The main parts and teaching process are demonstrated in Figure 5 and 6.

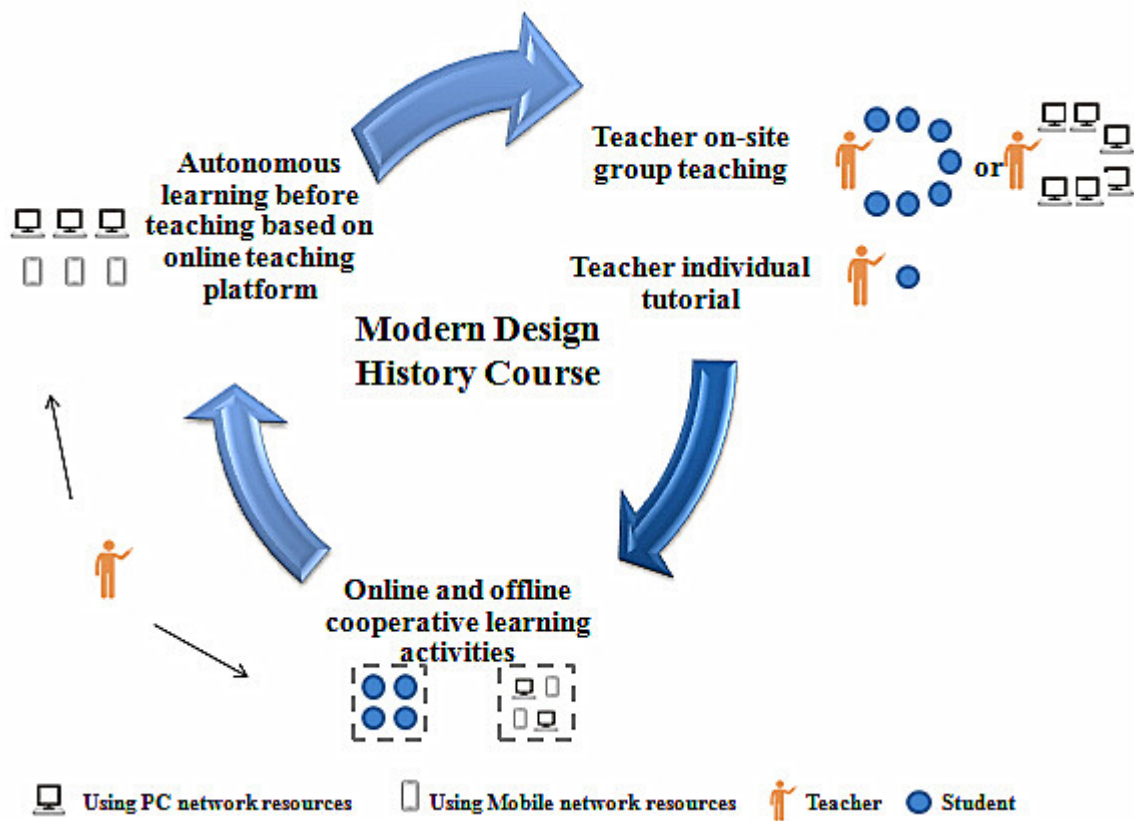


Figure 5. Schematic diagram of flipped classroom teaching in Modern Design History

5. Conclusion

The E-teaching and learning innovative model for design history course and digital learning environment make the historical knowledge alive in the modern network teaching space. The online interaction and other new teaching methods, network media and unlimited space not only improve students' digital learning abilities, but also make their characteristics and specialties completely played, which can allow students to carry out various personalized studies more freely and autonomously without any time and space limits. According to the feedback of questionnaires among students and for private tutoring and the analyzing results of public platform online data, students' learning interest, learning activeness and learning efficiency have been advanced greatly and the teaching effect is noticeable as well.

By means of the flipped classroom, combining design history with its practice or application and changing boring theory teaching to colorful interactive teaching or flipped teaching will make students think independently, learn autonomously, explore the knowledge and apply the design history creatively. It not only reach and surpass the learning subjective set for the course, but also reach the international level of new educational resources and teaching modes,

which totally conform to the aim of developing international innovative talents of Sino-foreign cooperative design major.

Combining the E-teaching platform, teaching activities have been changed and they will adapt, help and service learning from the traditional class to the virtual class, from the traditional teaching mode to the flipped classroom teaching mode, which also advances the teaching and researching level of teachers.

The deep-rooted learning habits of depending on teachers, coming into being in China long-time traditional education, have been removed, which facilitates the nurturing of new learning habits and learning motivation. Moreover, the traditional relationship between teachers and students has also converted to the new learning partnership.

The classes will be of high quality to cater to students' learning interest and meet their needs on the basis of establishing the E-teaching and learning innovative mode for Modern Design History and the integrative innovation and application of the teaching methods in the flipped classroom where students learn first before teaching. This teaching model can absolutely be promoted and applied in the course of design history for design majors in Chinese universities.

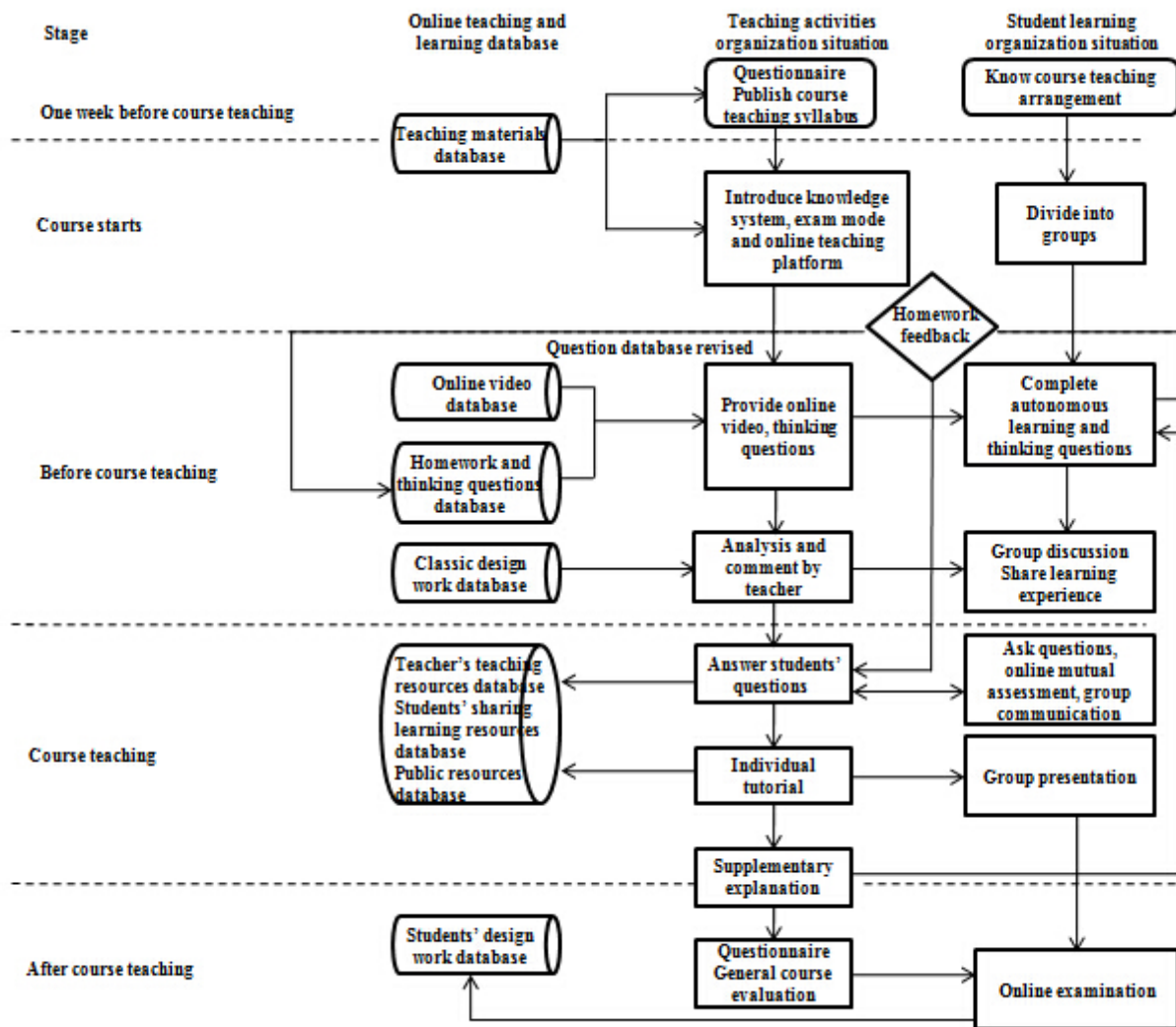


Figure 6. Flow chart of flipped classroom teaching mode in Modern Design History

Acknowledgements

This research is supported by the Sino-foreign Cooperation Training Project of Provincial Quality Engineering in 2018 "Financial Engineering Major of Sino-foreign Cooperation in Running School of Anhui Polytechnic University"; Research project of innovative development of Social Science in Anhui Province in 2018: "Non-hereditary conservation and innovation of bamboo carvings in Anhui Province under the evolution of urban and rural areas" (2018CX064); Anhui Polytechnic University "Collaborative innovation assimilation and alienation research of intangible cultural heritage protection of the Yangtze River Delta" (2017yyrw01); 2017 National Social Science Fund pre-research Project of Key projects of higher education research in Anhui Polytechnic University "Study on Teachers' education and development of Anhui Polytechnic University under the background of internationalization of Higher Education"(2017gjzd002); Anhui Polytechnic University Creation Group Project "Local Culture and Creative Design Research Group"; Key Research Base of Humanities and Social Sciences in Anhui Universities (SK2014A026). 2016 Anhui Philosophy and Social Sciences Planning Project "Strategic Research on Internationalization of Higher Education in Anhui

Province"(AHSKY2016D29); Anhui University Humanities and Social Sciences Research Major Project "Research on the Path of Universities Promoting the Inheritance of Anhui Non-material Cultural Heritage"(SK2014ZD015); Design Subject Subsidy of Anhui Polytechnic University.

References

- [1] Journal article: TENG, M. T. (2017) The Teaching Design of Theoretical Courses of Art Design Majors, *Education Forum*(11): 162-163.
- [2] Journal article: XU, Z. (2015) Discussion of International Teaching Resources' Value on Design History Courses, *Art Research*(6): 332.
- [3] Journal article: SUN, T. H. (2016) A Survey of Design History Courses Teaching Status of Visual Communication Major in China, *Design Education*(6): 28-30.
- [4] Journal article: SUN, D.H. (2011) A Survey of Design Education in the United States from the Perspective of Curriculum Settings: Investigation and Consideration of Visual Communication Major, *Art Education*(6):22-24.

- [5] Journal article: NIVAZ, S. M.(2016) The Future Development of Online Homework Evaluation System, *Jilin Journal*(5): 52-54.
- [6] Master Degree Paper: LIU, Q.(2018) An Empirical Study on the Effect of Flipped Classroom Teaching Based on Learning-based Assessment, *Shanxi Normal University*.
- [7] Journal article: JIA, H., DENG, H. J. (2018) Flipped Classroom Teaching Design and Practice Based on Micro-lecture, *Higher Vocational Education*(12): 43
- [8] Journal article: SU, Z. G.(2018) A Comparative Study of Flipped Classroom and Traditional Classroom, *New Curriculum Research*(5): 10-13.
- [9] Journal article: GUAN, R. Q. (2018)Project-based flipped classroom on a MOOC platform, *Journal of Jilin engineering normal university*(12): 69-71.
- [10] Journal article: LI, C. C. (2018)Application Research on Flipped Classroom Mode in Higher University Teaching, *Peasant Family Reference*(8):144
- [11] Journal article: JU, H. W. (2016) Analysis of Bilingual Teaching of Customs Declaration Practice, *Journal of Hubei Correspondence University* (10):138-139.
- [12] Journal article: LIN, G. H. (2018) A Cultural-geographical View of Spatial Pattern Construction in Flipped Classroom, *Journal of Hangzhou Electronic Technology University*(4):68-72 .