Study on Blended Teaching Design and Practice in the Course of *Three-Dimensional Composition*

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Abstract: Blended teaching design is a relatively new-rising teaching mode at present. This paper is mainly based on the compulsory basic course Three-dimensional Composition of the art majors in colleges and universities for the study of the blended teaching design and practice, which has a strong representativeness in exploring the reform of the course teaching methods. Starting from the teaching problems in the research, this paper explores the ideas of the teaching mode reform, conducts the practice of the blended teaching mode, and summarizes the feasibility plan of the blended teaching design, which is of great practical teaching significance in improving the teaching quality and students' learning interest, For example, use tobacco, tobacco boxes and other materials to make the theme course training,and is also valuable in combining theory teaching with practice teaching.

Key words: blended teaching, three-dimensional composition, teaching mode, tobacco

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The outbreak of COVID-19 has completely overturned the traditional offline teaching mode.[1] In response to the national call of “keep teaching and learning despite suspending class”, Chinese universities have organized the largest-scale online teaching in history, provided the most online courses and served the most students within a rather short time. This has promoted the popularization of online teaching by decades, but it has also exposed the drawbacks of online teaching. Educators have been thinking about the question of how to reconstruct the "online + offline" blended teaching mode in the post-epidemic era. Taking the course of "Three-dimensional Composition" as an example, this paper organizes students to explore the mixed teaching mode by producing the theme of smoking ban propaganda by himself.

BLENDED TEACHING ---- NEW NORMAL OF THE FUTURE EDUCATION

Blended teaching originates from the foreign blended learning theory which was put forward at the end of the 20th century. Namely, it combines the advantages of the traditional learning mode with those of E-learning (i.e., digital or network learning). He Kehang, a professor from Beijing Normal University, introduced the blended teaching concept for the first time in 2003 to China.[2] He believes that the blended teaching combines the advantages of the traditional teaching methods with those of online teaching. It not only gives play to the leading role of teachers' guiding, inspiring and monitoring the teaching process, but also fully embodies the initiative, enthusiasm and creativity of students as the subjects of the learning process. Practice has proved that the blended teaching is not the superposition of the offline traditional teaching and the online teaching. After fully analyzing the

advantages of both teaching methods, it reorganizes the teaching objectives, reconstructs the knowledge system, and adopts the appropriate teaching methods for the teaching design to achieve the best teaching effects, instead. [3] As a new teaching method, the blended teaching reflects the transformation of teaching concepts and paradigm, and it is one of the important means to improve the quality and efficiency of the undergraduate teaching at present and in the future in China. Equipped with the contemporary new technology, the teaching approaches like blended teaching, experiential teaching, inquiry teaching, cooperative teaching are being popularized. The Ministry of Education has launched the first-class undergraduate courses named "first-class undergraduate majors, first-class majors" and has established a separate category---the national blended online-offline first-class courses. Colleges and universities as well as teachers have passionately conducted the relevant theoretical research and practical research, which promotes colleges and universities to carry out the "classroom revolution" to the end and also makes the learning-centered educational concept. [4] This trend constantly shapes a new learning community between teachers and students.

THREE-DIMENSIONAL COMPOSITION COURSE CONSTRUCTION BASED ON BLENDED TEACHING

Current Teaching Situation Analysis of the Course

Three-dimensional composition is one of the obligatory basic courses for art majors in colleges and universities. It mainly cultivates students' abilities such as three-dimensional modeling, innovative thinking, art appreciation and aesthetic so as to ensure that students are equipped with a solid professional knowledge and that a good foundation is laid for the subsequent design courses. Compared with other general courses, the three-dimensional constitution course focuses on design and skills, so it requires students' good operational skills. The traditional blended teaching methods failed to meet the demands of students' creative designs, and some problems were found in teaching and learning, so the training objectives in the professional curriculum system couldn't be achieved. It can be classified into the following three points:

Outdated teaching concept

The traditional teaching concept is continued and more emphasis is laid on "teacher-centeredness", Most teachers often adopt the cramming teaching method or the heuristic teaching method, pay more attention to the explanation of basic theories and skills in the three-dimensional construction course, ignoring the students' personality development. Therefore, students can't be taught in accordance with their aptitude and they learn passively.[5]Students seem to listen to some basic process skills carefully, but they find it hard to put them into practice. The cramming teaching mode is no longer suitable for students now, who all carry mobile phones and are more likely to be distracted in class. To catch their attention, the student-centered concept must be established so that they can shift passive learning into active learning.

Monotonous teaching links

The teaching links are unable to keep pace with the times and combine with the latest development trends of the major. The single mode is mainly adopted in teaching. The course development lags behind in the following aspects from teachers' teaching styles, training methods, the presentation of works to the topic selection. Teachers adopt the subjective paternalistic teaching means which feature the single lecture style. Even if the multimedia is used for teaching, they just change from "repeating what the book says" to "repeating what the PPT says". Students lack the interaction with each other and brainstorming, let alone think actively. Students can't use the divergent thinking to solve problems, combine theory with practice, or join technology and art. [6]

Backward teaching means

The existing teaching means are mostly freehand sketches and the operation of "cutting" and "folding". The teaching process is formalistic with a low working efficiency and lacks innovations. If some works are spoiled by accident in the operation, it will restart from the very beginning. Electronic devices such as computers, mobile phones, etc. have not yet been used to simulate the sketch designs or the addition of colors. Only if the plans are determined, the production can start.

In addition, 3D modeling has not been directly used for the preview of the stereoscopic display effect. If the teaching means are not innovated, it will not only affect the learning and innovation efficiency of students but also their enthusiasm for learning.

General Thinking of the Course Construction

Compared with the teaching designs and teaching effects in the three periods: before 2019, during the 2020 epidemic period and in the post-epidemic period after 2021, the course thinking is a new design concept that has a strong representativeness in exploring the reform of the course teaching methods. Before 2019, the blended teaching was still in the trial age and didn't involve much of the online part, so it mainly focused on the offline teaching mode without improving the teaching effects greatly. During the 2020 epidemic period, the home quarantine made possible the full use of online teaching. When the pure online teaching mode was used for the course of three-dimensional composition, its limitations were also exposed. Students failed to get the face-to-face instruction in the production, so the teaching effects were not satisfactory. In the 2021 post-epidemic era, as students gradually return to class, the two teaching modes--- online teaching and offline teaching are combined together so that they complement each other. The blended teaching mode optimizes the teaching structure and reconstructs the teaching design plans, mixing the traditional teaching with the modern teaching as well as connecting in-class teaching with extracurricular teaching. In this way, the teaching mode suitable for the three-dimensional composition gets innovated, realizing the optimized combination of the teaching activities and improving students' learning effects and training objectives (Figure 1). This course is offered in the first semester of the sophomore year, with a total of 32 class hours. The overall construction thinking is as follows: Based on OBE education concept, it is both student-centered and result-oriented. The blended teaching reform thinking is adopted. Based on the analysis of students' learning needs, the teaching objectives of the course are set to optimize and reconstruct the teaching content, so as to realize students' abilities like three-dimensional space contouring, innovative thinking, art appreciation and aesthetic.

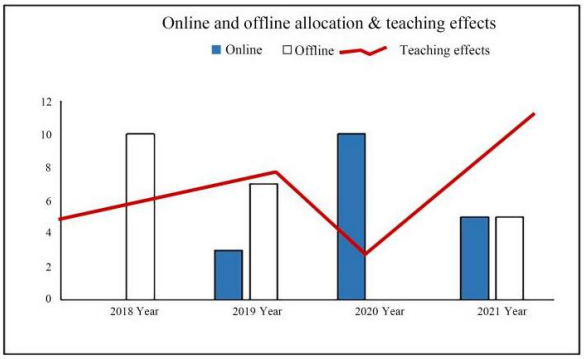

Figure 1: Online and offline allocation & teaching effects

Transform the teaching concept and establish the interactive class mode

In the teaching process, students are always centered and the subjective initiative of students are fully played. Moreover, the close interaction between teachers and students should be emphasized in the teaching process. In class, students are organized to participate in multiple teaching modes such as group discussion, sketch drawing, self-evaluation and mutual evaluation, online preview and offline answering, assignment submission, teachers' comments, etc. The teaching mode conforms to students' psychological needs and can motivate their learning interests. The interactive mode involving many links are designed. For example, the thematic creation and training project is introduced, where the course learning is conducted through online self-learning, practice and mutual exchange. Students set clear goals and then learn as instructed. They better understand language points through group discussion in class, and also strengthen the operational abilities, mutual evaluation, self-learning abilities, which gives full play to students' initiatives. The interactive discussion and learning between teachers and students enable them to put forward the design plans and amendments in accordance with the design majors. Only when students experience the process themselves will they have a profound understanding of the process and come up with new concepts, thus improving their innovative thinking.

Construct teaching resources and establish the online self-learning mode

Online learning is mainly reflected in the classroom teaching preview and the after-class

promotion. [7] Before each class, teachers make careful preparations according to the teaching plan and teaching tasks, and record the theoretical teaching video in advance. By displaying image resources in the video explanation, the questions are led in and situations are created for complex questions. Meanwhile, different teaching means like works appreciation are used to add interest to the course learning as well as to reduce the dullness of the theoretical courses. To facilitate students' review after class, teachers need to release the teaching courseware on the online teaching platform. Students can review again through the courseware after watching the video. Meanwhile, according to the requirements of the course, teachers can provide some related learning websites and share learning videos and pictures, case analysis, etc., to increase the amount of knowledge. Regarding the different teaching contents, teachers can also design the class discussion topics and publish them online in advance, so that students can prepare in advance and search for relevant information, which achieves the desirable warm-up effects of warming up before class. If students prepare with questions in mind, they will carry out discussions more actively in class, which avoids the silence in class.

Change the teaching forms and establish the group teaching mode

Students are divided into groups first, and then the learning and case analysis was conducted in forms of groups. This can strengthen the cooperation and assignment allocation between team members, improve students' participation and initiative as well as motivate students' interest in class and learning effects. Groups complete the practices like topic discussion, conception, works production, etc. through cooperation. It not only complements each other's advantages for mutual promotion but also develops the team collaboration ability. In terms of placing the classroom seats, the traditional square matrix form of seat placement gets broken. Instead, several students sit around and get close to each other, bring them a sense of belonging. Groups first discuss, collect and analyze the work materials according to the established topic, and then think about the designing plans, and next they draw the work design sketch, etc. Finally, each group sends their representatives to elaborate their own group's design plan, and teachers explanation for the more concentrated problems and guide students to review the knowledge comment on the advantages and disadvantages of the design plans. Teachers provide the unified points together. According to different topics, the presentation of works and PK can also be arranged between groups, while teachers give summaries and comments, which helps them to make progress together.

Expand the teaching scope and establish an open teaching mode

Art comes from life, and the three-dimensional forms are everywhere in life. Teachers can provide exhibition information for students or organize students to visit museums, exhibition centers, shopping malls and IKEA homes for the on-site teaching. They can conduct a field investigation and analyze the application of three-dimensional forms in reality to arouse students' enthusiasm and interest in learning. For example, students are organized to conduct the market research in IKEA. Many of the lights and lamps in IKEA are composed of wire rods or plane materials in three-dimensional forms. Through online self-learning, students know about wire rods and plane materials and they feel excited at seeing the physical objects again. At this moment, students can be inspired to think about why the lampshade materials won't deform because of burning and explore the knowledge of the three-dimensional materials. This gives full play to teachers' subjective initiatives and mobilizes students' participation and initiative learning anytime and anywhere. The overall teaching procedure design is as shown in (Figure 2).

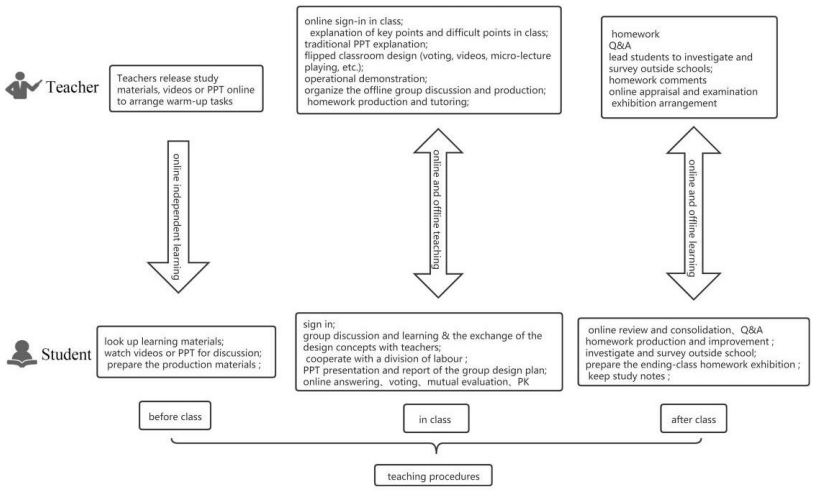

Figure 2: Teaching procedure design

BLENDED TEACHING MODE PRACTICE OF THE *THREEE-DIMENSIONAL COMPOSITION* COURSE

Theory self-learning link

Teachers prepare learning materials carefully for students, including knowledge point explanation videos, teaching courseware and reference materials. To ensure the teaching effects, students are required to attend classes on time according to the class schedule, and sign in on time on the online learning platform. After that, they click the learning video for self-learning. Teachers can set up the video development time and check the video viewing duration so as to preliminarily master the self-learning situation of students. In the self-learning stage, students can have online discussion with each other and answer the questions reserved by teachers. Teachers are not sure whether the students watch the video or not, and the video may be automatically played without viewing, so teachers can design some relevant questions in accordance with the course content and ask them to answer the questions after watching the video, which avoids the situation mentioned above and helps teachers master students' overall learning situations. Students can finish their homework online, or they can return to the online learning platform after practice and submit their homework online so that teachers can sort out and evaluate students' homework for filing.

Pre-class links of the practice class

Based on the pre-class teaching videos available, more teaching videos like those face-to-face preview videos that requires the on-site teaching are added and released on the online teaching platform. Meanwhile, the class hour allocation scheme gets adjusted in accordance with the teaching syllabus, increasing the class hours of online learning and reducing the class hours of face-to-face teaching. In this way, the total number of class hours remains unchanged. In addition to the online teaching videos, students' study notes are also added, and their feelings and experiences about learning materials are sorted out before class and then shared to the learning group. Before class, teachers can display such notes or experiences in the learning group. Teachers can understand whether students have mastered the knowledge points beforehand through sharing. They can also ask questions and organize students for discussion before summary and Q&A. Following these teaching links, the teacher starts giving lessons and focuses on students' self-learning and discussion instead of the single cramming teaching method. [8]According to the needs, for example, when there are many concentrated questions left in online discussion boards and learning groups, and the expected results cannot be achieved by students' self-learning alone, teachers can teach online through live streaming and answer questions before face-to-face class.

Flipped teaching--- online learning alternates closely with face-to-face class

The core of the flipped classroom lies in the overturning of the traditional class, namely, a lot of direct teaching is removed outside class and more valuable class time are gained for the meaningful deep learning.[9] The currently popular Mocc flipped

classroom mode can't be fully applied to the practical requirements of the course *Three-Dimensional Composition* because the course is practical and students' operational skills require the on-site tutoring. Moreover, students need face-to-face communication and discussion, so teachers and students should have face-to-face class after they finish learning a chapter. The face-to-face class of the theoretical learning is not added, and the questions could be answered until the face-to-face practice class or when the teachers summarize the key points for review. However, the Q&A of the face-to-face class is conducted at a fixed time in the flipped classroom: in the middle of the course or near the end of the course, so it fails to meet the practical needs of the course *Three-Dimensional Composition*. Despite this, the online platform of the flipped classroom can still be referred to in order to strengthen the interaction and guidance between teachers and students. For example, the wisdom tree online teaching platform can be used in the form of the face-to-face class. When students' homework is displayed on the large screen through live streaming in the classroom, group members race to answer questions online and explain in the front, teachers make comments, and the rest students have discussions and vote. Regarding the innovative designs in each group of students, a better guidance can be provided, which can train students' creativity and imagination and improve students' comprehensive design ability. The alternating frequency of online learning and face-to-face class is adjusted to establish the rationalized flipped teaching mode. Figure 1 shows the flow chart of the homework tutoring production (Figure 3).

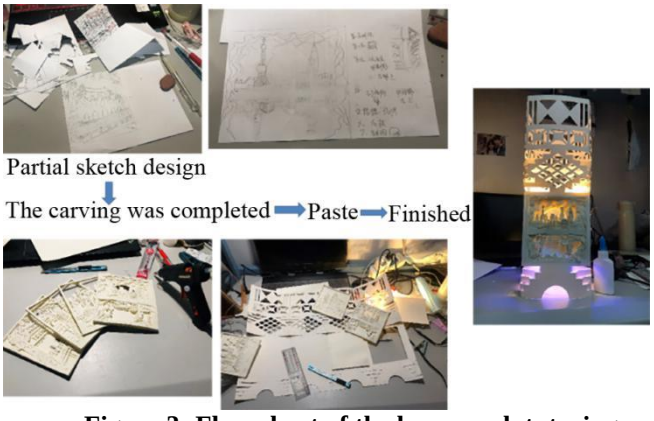

Figure 3: Flow chart of the homework tutoring production

Establish the learning groups

The specific course learning groups are established so that teachers and students can share learning resources, have discussions and present the learning results in the group anytime. Moreover, the precise positioning can be launched for the sign-in check of the group in the face-to-face classes in case some students sign in in the dormitory or outside the school. This replaces the traditional sign-in.

Establish the group learning system

The traditional individual learning mode should be broken. According to the total number of students, students are divided into several learning groups. Students can choose their partners freely because students with the same interests can motivate their learning interests and cooperate well with each other when they learn together. Each group has discussions of the question put forward by the teacher and communicate with each other about the homework concept. The group members discuss the homework plans and complete the group assignment together. In this process, the team spirit gets developed, the collective intelligence is realized, and the strengths between students are weighed. The rational allocation of group work and their close cooperation increase the collective invention ability of the works. It can be predicted that in the next few years, the teaching space design in the classroom will also change. Great changes will take place in our classroom, and the traditional rows of seats will be gradually replaced by group sitting. [10] (Figure 4 and 5)

Figure 4: Group members' collection, discussion and production

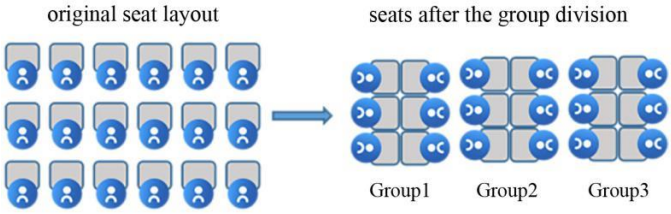

Figure 5: Changes of seats in each group

Figure 6: PPT demonstration and report in groups

Add the links of online voting and online responder

In the group PK, the teacher can set the online responder and determine the order of the group demonstration. After each group's demonstration, the online voting starts. The teacher summarizes and evaluates after all the demonstrations are finished. (Figure 7, Figure 8)

Figure 7: Online responder

Regular PPT demonstration and report in groups

The homework demonstration and report of the group is conducted in the middle of the course and at the end of the course. Meanwhile, the competition (PK) between groups is organized to compete the check in the middle of the course and monitor and learn mutually. (Figure 6)

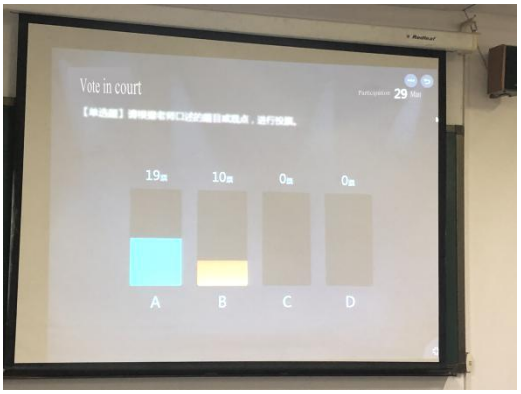

Figure 8: Online voting

Enrich the assignment forms

The assignment mainly includes the course research report, the micro-video shooting, the topic assignment and exercises. Students can be asked to do the market research after finishing learning the theory so that they can find the application of the three-dimensional composition in real life. Moreover, the photos about the application fields of the three-dimensional composition are collected and sorted out to write the research report. Previously, the corresponding assignment was set according to the knowledge points of each chapter without the topic assignment. As knowledge points are not centered, students lack the comprehensive application ability and the innovation passion. The topic assignment helps mobilize students' learning initiatives so that students can flexibly use the knowledge and perform their innovative thinking to the utmost. In addition, students are encouraged to summarize what they have learnt by shotting micro-videos, which makes learning more interesting. Good videos can be displayed on the large screen of the classroom or they can be passed down to juniors to mobilize their learning initiatives.

Add the feelings and experiences of learning near the end of the course

After practice, students have a new understanding of knowledge points. After all, only

in practice can they test and discover the truth. Students' learning perception will be different. Through writing the learning experiences, students can sum up their own harvest, the future goals, etc., which lays a good foundation for the future professional course learning.

Hold the assignment exhibition near the end of the course

At the end of the course, excellent works can be selected for the final report and exhibition. The exhibition of physical objects is applied for in the college exhibition hall, which not only enhances and satisfies the sense of achievements among students but also provide opportunities for students of other majors to learn and communicate, enriching the learning atmosphere on the campus. For example, in the theme works of smoking-free propaganda, we showed IQOS e-cigarettes, cigars, hookah smoke and smokeless tobacco, and also used the use of IQOS to observe whether students have impulse and behavior on smoking, and finally let students recognize the harm of replacing tobacco products.[10-11]

The table of the overall class hour allocation are shown in Figure 9. (Figure 9)

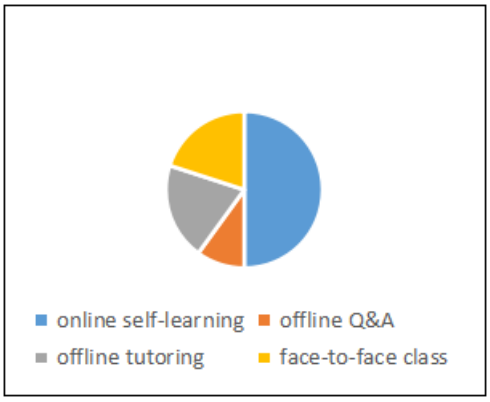

Figure 9: Class hours allocation

CONCLUSION

This paper analyzed the problems existing in teaching and found the causes of the problems. Based on this, this paper tries to explore the new teaching thoughts and change the teaching concept and forms. The blended teaching mode is explored through practice, and the feasibility plan of the blended teaching mode is summarized. This type of teaching design plan can mobilize the learning initiatives of the students, which is of great practical significance in improving the teaching quality and students' learning interests. Moreover, it is valuable in combining the theoretical teaching with the practical teaching.

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Author Declaration

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References

1. Zhao Jiawei. An OBE-based reconstructed study on the blended teaching mode. Jiangsu Scientific and Technological Information, 2021, 8(24): 78.

2. Wang Ou. Applied research on the blended teaching mode against the "Internet+" background--- a case study of higher learning institutes in Gansu Province. China Packaging, 2017 (11): 65.

3. Wang, Zhu & Li. Blended teaching mode: connotations, meaning and implementation requirements. Journal of Architectural Education in Institutions of Higher Learning, 2018, 27(04).

4. Ding, He &Xue. Thoughts and practice on the launch of the blended teaching among higher learning institutes. Beijing Education (Higher Education), 2020 (11).

5. Hang et al. Exploration and practice of the student-centered blended teaching mode. Packaging Engineering, 2020, 41(S1): 119-120.

6. Chen Fenghua. Application of blended teaching in art design teaching. Art Education Research, 2019, (24).

7. Yang Qun. OBE-based blended teaching mode optimization of human resources management courses---a case study of training and development courses. Journal of Guangxi Vocational and Technical College, 2017, 10 (5): 31-32.

8. Chen Jingwen. Study on the blended teaching reform based on the "double-drill model" design course--- a case study of the Three-Dimensional Composition course. Industrial Design, 2021, (05).

9. GuoJianpeng. Flipped classroom teaching mode: variant and unified. China Higher Education Research, 2019 (6).

10. Yu Jianbo. How to conduct the design and practice of the blended teaching. China Education Network. 2017(8): 72-73.

11. Effects of Visual Exposure to IQOS Use on Smoking Urge and Behavior. Brett Emma I; Miloslavich Krista; Vena Ashley;

Didier Nathan; King Andrea C. Journal of Tobacco Regulatory Science. 2021(1)
12. Young Adult Correlates of IQOS Curiosity, Interest, and Likelihood of Use. Phan Lilianna; Strasser Andrew A; Johnson Andrea C; Villanti Andrea C; Niaura Raymond; RehbergKathryn; Mays Darren. Journal of Tobacco Regulatory Science. 2020(2)