Application Research of Case Teaching Method in Public Policy Science under Information Technology Condition

—A "Micro-Teaching" Platform as an Example

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Abstract—**This word mainly study how to improve the case teaching effect in the process of public policy teaching by applying information technology to the classroom. Taking the case teaching of *Sun Zhigang Incident* based on the micro-teaching platform as an example, through the action-observation-reflection analysis framework of the action research method, we analyze how to apply information technology to make the implementation of case teaching lower in cost, more contextual and more interactive than before. For the teaching mode, on the basis of the reflection of action research, the future development direction combining case teaching with flipping classes, online independent learning and offline participatory learning is proposed.**

Keywords—Case teaching; information technology; micro-teaching; public policy

I. INTRODUCTION

As a very important teaching method arising from the management of foreign enterprises, the case teaching method has been widely used in colleges and universities in China. How to combine the case study method with the ever-changing information technology? How to break through the time and space restrictions of traditional learning activities and integrate global quality education resources? Changing the status and role of the four elements of the classroom teaching system (teachers, students, teaching content and teaching media), transforming the original teaching process and mode, to adapt to the needs of social development and learners, requires more in-depth research and practice.

In Chinese universities, Public policy is a basic course for majors such as administration and public administration. Based on the history of the development of public policy science and the main theoretical schools, and taking the public policy process as the mainline, students need to understand the basic concepts, theoretical framework and basic policy analysis methods of public policy, and understand public policy practice in our country through a large number of cases, try to use the theory and analytical methods to explain policy phenomena and formulate policy options. Due to the nature of the discipline, the public policy teaching process relies on a large

number of cases. In addition to the rich cases in the textbooks in the United States, there are also special public policy case materials. The Kennedy School of Government, known for its case studies, has the largest library of public administration and policy cases in the world, with more than 1,300 cases.[1] In contrast, in China, public policy science still faces the lack of high-quality cases, few localization cases, and the need to improve the teaching ability of teachers' cases.[2]

During the period of 2016-2018, with the help of the online teaching platform of the Micro-Teaching Aid jointly developed by Huazhong Normal University and Huazhong University of Science and Technology, the action research practice of the teaching process and assessment mode reform under the "information technology case-based teaching applied to public policy" was carried out. After three years of exploration, a set of public policy informational case-based teaching system including case selection, case application, case reversal, course assessment and other elements was constructed. This teaching practice has achieved the goal of sharing and fully interacting with students in a timely manner. Through this course, students also improve their ability to analyze and solve public policy issues using public policy theory.

II. CASE-BASED TEACHING

The term case has the meaning of status, situation, facts, and examples and so on. Case-based teaching is a kind of teaching activity that improves the students' ability to think, analyze and solve problems through the analysis, research and discussion of the cases under the guidance of the teachers.[3] The case teaching method has a long history of application outside of China, and its appearance can be traced back to ancient Greece and Rome. The real application occurred in the medical school and law school of Harvard University in 1901, which was successful in case teaching and case law teaching.

Unlike traditional teaching in the classroom and passive acceptance by students, case teaching emphasizes student-centered and problem-oriented. Through the description of the case, the students are introduced into the relevant problem situation, are encouraged to analyze independently, or discuss, provoke, and ask questions among the group members, and finally summarize the theoretical knowledge from the case

analysis or apply the relevant theoretical analysis and solve the case problem.

The exploration of case-based teaching in the Chinese education community began at the end of the 20th century. Although there are more and more courses using case-based teaching methods in higher education, they are still in the initial stage of introducing theoretical and experimental exploration. The training system for teacher case teaching needs to be improved, and the case teaching ability needs to be improved.[4] In addition, most majors have not yet established a mature case base, the same is true in the field of public policy.

III. INTEGRATION OF INFORMATION TECHNOLOGY AND CASE TEACHING

Today, when the MOOC and micro-classes are popular, case teaching is still an effective teaching method. And thanks to the support of information technology, the interactive, contextual, and autonomy features of case teaching can be better played. On the other hand, if you are separated from the teaching methods such as case teaching, if we pursue the information technology on the high level, we are likely to encounter problems such as high dropout rate and teaching flow.

In summary, information technology contributes to the implementation and improvement of the case teaching process in the following aspects:

A. Information technology contributes to the editing of teaching cases

The Internet effectively solved the problem of "where the case came from" in case teaching. Teachers can easily search and download the cases in the ready-made open case library, or they can collect historical data themselves, or follow up on the latest events happening to write a teaching case for this course.

B. Online courses facilitate knowledge preparation before case study

The time of classroom teaching is limited by the teaching hours. If students want to have a full discussion in the classroom, they must combine the form of flipping classrooms to let students learn relevant knowledge points before class. The online course format represented by MOOC and micro-courses helps to fragment the knowledge points and allows students to complete pre-class knowledge preparation at a convenient time and in a convenient place. Thus, the classroom discussion is closer to the level of "theoretical dialogue", which minimizes the formalism in the case teaching process.

C. Bring Your Own Device helps the presentation of the case and the supplement of the case information

With the development of the Internet and information technology, Bring Your Own Device (BYOD) is also known as its own technology, which refers to people using their own purchased laptops, tablets, smart phones or other mobile devices in their learning and working environment[5], have become more and more common. *The 2016 China Internet Investment Research Report* shows that Internet usage is over 80%, and smartphone usage is as high as 90%. Almost 100% of college students own smartphones or tablets.[6] Through the

combination of the teaching platform and the own equipment, teachers can publish electronic texts, pictures, audio, video and other case materials before or during the class to help students maximize the case situation. At the same time, with their own equipment, students can also find and collect information related to the case online, enrich their discussion materials, and share case information and personal opinions with team members.

D. Interactive teaching platform helps case discussion

With the continuous innovation of information technology, in China, a number of classroom applications that occupy the student's mobile phone screen, such as micro-teaching, grading, and rain classrooms, are gradually being born.[7] Relying on the interactive teaching platform, it is possible to effectively realize the "interaction between students" , that is, to make statements, exchanges, debates, integrations and demonstrations among students; It also helps to achieve timely "teacher-student interaction" . For example, after the teacher issues online questions to the students, the students can answer the questions online. The teachers can simultaneously display and analyze the students' answers in the background, and timely understand the students' views and attitudes toward the case, so that effectively guide students to analyze problems in depth. In turn, students can also initiate questions to the teacher at any time. Whether it is a student's question or a teacher's response, they can be seen by other students through an interactive platform, thus expanding the breadth and depth of teacher-student interaction. At the same time, all online interaction processes are recordable and analyzable, which also provides a more objective basis for the assessment of case teaching.

IV. CHARACTERISTICS AND TYPES OF PUBLIC POLICY TEACHING CASES

Public policy is a discipline that studies the knowledge of policy processes and knowledge in policy processes. Therefore, in the process of public policy learning, the anatomy of various policy cases is indispensable.

A. Due to the differences in disciplines, the preparation of public policy teaching cases should pay attention to the following characteristics

- The situation of grand narrative. Because of its public nature, public policy must be a public decision involving public interest in a complex social and economic environment. Therefore, in the preparation of public policy teaching cases, it is particularly necessary to pay attention to the policy environment behind the reproduction of policies, and the interests of relevant groups. Descriptions in the form of words, sounds, images, etc., which can help students to recapture contextual elements such as entities, features, events, plots and perspectives in the case, let students be immersed in analyzing problems and develop reasonable imagination and reasoning.

- Public policy must be problem-oriented. In the process of writing teaching cases, policy issues should be clear and avoid generalization as a

description of general social phenomena. In the use of the case, students should also be reminded to keep in mind the policy issues to be resolved, so as to prevent the students from slipping into irrelevant talks.

- Task driven. A number of policy options are formed or need to be formed around policy issues. Students should be left with a task space for evaluation or design of policy proposals, which enables students to complete the task of evaluating existing policy plans or designing new policy plans through self-inquiry and team-based learning driven by problem motivation, finally, build the knowledge system of the course.

- On the contrary, students need to be given room for debate in the case study to realize the process of completing independent learning and inquiry learning through policy debate. Most policy issues are controversial, and decision-makers need to make choices in alternatives. It is necessary to pay attention to the complexity of the policy issues, the competitiveness of the program, and avoid giving pre-emptive policy conclusions.

B. Classification of public policy teaching cases based on the timing of the policy events and the purpose of teaching

- The hot case is closely related to the hot policy events that have occurred in the past one or two years. It has strong timeliness and high attention, and students are easy to enter the situation.

- Even though historical cases occur relatively long and relatively unfamiliar to students, these policy events is equally important in case teaching and can easily become a classic case, which is often milestones and often have a complete policy cycle.

- The analytical case is to explain the phenomenon in the policy process. It provides students with a ready-made "policy story" that allows students to use existing knowledge to analyze phenomena or to extract relevant theoretical knowledge through analysis.

- The practical case is to simulate the policy process, and only provide students with a "policy problem situation", allowing students to simulate program design, policy debate, policy choices, and learn and think independently in the process of practice, so as to master relevant theoretical knowledge.

V. CASE TEACHING PROCESS OF PUBLIC POLICY COURSE BASED ON *MICRO-TEACHING PLATFORM*

Taking the teaching process of the analytical case as an example, we analyzed the "Zhigang sun Incident" with the students through the micro-teaching platform jointly developed by Huazhong Normal University and Huazhong University of Science and Technology, and conducted action research on case teaching. The action research in this paper will use the analysis framework of "action-observation-reflection" to analyze the process and effect of the whole case teaching.

A. Display and explain core knowledge points through the courseware

Action: The teacher demonstrates the courseware through the micro-teaching courseware function, and also allows the students to familiarize themselves with relevant knowledge points in advance through online courseware playback on the client-side. For example, through the courseware to demonstrate and explain the core knowledge points of the multi-source flow model.

Observation: In large-scale class teaching, no matter how far the seat is from the podium, the micro-teaching courseware display function enables the students in the classroom to learn more about the knowledge points through the mobile phone, and conveniently to realize the pre-study and after-school review of the knowledge points.

Reflection: The time and level of detail given of the knowledge points need to be combined with the needs of case teaching. If you want more time in the class for the case discussion, the knowledge points can be given before class and the more detailed the better, which is good for students to prepare for the pre-class knowledge; If the knowledge point itself is derived from the discussion of the students inspired by the teacher in the classroom, it should be given in the course, and only need to outline the points and be more open.

B. Online case reading

Action: Be problem-oriented and ask students to read relevant materials with questions. Case materials can be uploaded through the micro-teaching courseware function, and students can read online.

Observation: Compared with the traditional paper case text, the case data provided by the courseware upload function is rich, which can enhance the situation of the case, and save the copying cost of the case, and it is more convenient to read and save.

Reflection: Case reading can be completed by students before class, but in order to ensure the adequacy of case reading, students can test the degree of understanding of the case through the next step of online answering case questions.

C. Online case to answer

Action: After the case is read, set the questions online in various forms (such as short answer questions, random answer, multiple-choice questions, yes and no questions). Ask questions to students and instantly see the answers for each student.

Observation: Through the statistics of the distribution of answers, to understand the students' overall knowledge of the knowledge points, and to make targeted comments on the options that are misunderstood, in order to grasp the students' understanding of the case and respond to this situation.

Reflection: There is a standardized answer in this session. It aims to compare the students' understanding of the case with the teacher's standard answer, find the doubts and difficulties of the case analysis, and improve the teacher's responsiveness to the students on a targeted basis. But in addition to the standardized answer, the case teaching should be open-ended and encourage students' independent thinking. Therefore, the essence of case teaching lies in the next step: online case discussion.

D. Online case discussion

Action: Teachers can also initiate online discussions on controversial issues. For the question of "the advantages and disadvantages of the multi-source model", the teacher initiated an online topic discussion. Students can discuss with their neighbors, but they need to submit their own personal opinions on the mobile micro-teaching WeChat public account.

Observation: The students' messages can be played on the PC side in real-time on the big screen through the projector, and can be displayed in various modes such as word cloud and picture wall. In the default mode, teachers can quickly browse the students' personal opinions, and can vote on representative opinions. In the word cloud mode, teachers can quickly grasp the main points and positions of the students through visual high-frequency word display, and conduct a court review.

Reflection: The online discussion function of micro-teaching has improved students' autonomy thinking and enhanced the interaction between students and students and interaction between teachers and students. But this kind of interaction requires teachers to sharply discover the highlights of the discussion, refine the valuable core ideas, and guide students to the effective statement, debate and summary. For each discussion of the same issue, the process and results presented may be different, requiring teachers to continuously improve their on-site control.

VI. CONCLUSION

Through our action research, we can find that through the combination of case teaching and information technology, the advantages of case teaching contextuality, interactivity and autonomy are better demonstrated. However, a more important issue in case teaching is the implementation of a comprehensive and in-depth case teaching, which requires full participation and in-depth discussion and analysis. Compared with the traditional teacher teaching method, it is more time-consuming, and then we have to transfer some traditional teacher teaching parts from the classroom to the extra-curricular, from offline to online. In other words, the case teaching should adopt the teaching strategy of flipping the classroom, put some theoretical knowledge points into the extracurricular completion, and focus the classroom time on the case analysis of student participation. By combining online open learning modes such as MOOC and Micro-Crouses, students can use the fragmented time to learn relevant knowledge points outside the classroom, thus achieving the technical support of information technology in case teaching outside the classroom. The combination of online and offline learning, case teaching and flipping classrooms will greatly enhance the teaching effectiveness of courses such as *Public Policy*, and improve the research ability of students.

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