Curriculum and Teaching Methodology (2023)
Clausius Scientific Press, Canada

DOI: 10.23977/curtm.2023.060218
ISSN 2616-2261 Vol. 6 Num. 2

Construction of Quasi-Teaching Classroom Model of Ideology and Theory under the Background of Big Data

Xiaoping Yang

Sichuan Plus International College, Chengdu, Sichuan 610103, China
xiaoping.yang@polus.edu.cn

Keywords: Big Data Technology, Ideological and Political Theory, Teaching Model Construction, Classroom Model

Abstract: In modern society, mass media has become a new way for people to develop themselves, and also provides a new environment for ideological and political education (IPE). The virtual, interactive and open network environment has a double influence on IPE. In this paper, the classroom model(CM) of prospective teaching of ideological and political theory(IAPT) is constructed based on the background of big data(BD). For the classification of college courses, combined with the different nature of the courses, it is suggested that China's colleges and universities implement a tiered mixed teaching model. The completion of the construction of the university classroom teaching model does not mean the end of that research; the ultimate purpose of the construction is to put it into practice. Through practical content to stimulate students' curiosity, let them take the initiative to actively explore the living world around them and effectively combine theory with practice, so as to cultivate students' open-mindedness and practical ability, penetrate deep into students' hearts and improve their comprehensive quality.

1. Introduction

The content construction of practical teaching of IAPT courses in colleges and universities occupies an extremely important position in the whole practical teaching system of IAPT courses, and the construction of content directly determines the effectiveness of teaching activities. In the whole teaching activity, teachers can combine their own IPE experience with the social spiritual model, the concept of the times, and the quality of literacy, on the one hand, teachers themselves can sublimate their knowledge, and on the other hand, for students, it is out of students' own internal needs, reflect and select the teaching content delivered by teachers and internalize the world view, life view and values. Especially in the present time, various cultures flow into China, and students are not mature growth period, inevitably will be affected by some bad cultural phenomena, therefore, the focus of education must be implemented and IAPT teaching, practical teaching here is highlighted its strengthening role, it can help students really understand themselves, adapt to society, and establish a scientific and correct moral concept. In this paper, the CM of quasi-teaching of IAPT is constructed based on the background of BD.

To explore the problem of constructing the network teaching mode of IAPT class, first of all, we need to take the theoretical research results of ideological and political pedagogy in China as the

theoretical basis. There are differences in people's understanding of the subject of IPE. Clifford Agyei points out that the subjectivity of the educational object is reflected in the acceptance of dominance, and in the educational activity is the passive acceptance of education; first of all, they should know their own educational object, educational content, as the educational object is through the comparative knowledge of the actual self[1]. Melike et al. earlier explored the network communication on the impact of educational and teaching reform of IAPT courses in colleges and universities. It is pointed out that "network communication extends the teaching space of IAPT courses, realizes all-round teaching interaction, makes the teaching subject status change, "decentered structure" form, puts forward higher requirements for teachers and students' information literacy, and realizes the organic integration of traditional classroom teaching and virtual classroom [2]."

When the value orientation of online information dissemination is consistent with the value goal of IPE, it will strengthen the effect of IPE, and vice versa, it will weaken the effect of IPE. In this paper, the current status of the current university classroom teaching mode is empirically studied and rationally analyzed by using questionnaire and interview method in the context of BD, and on this basis, the architectural model of tiered mixed teaching mode is proposed. The current university classroom teaching model is still limited to the field classroom, which is mainly a lecture-based classroom teaching model. This paper constructs the CM of prospective teaching of Civic Theory based on the background of BD, which is conducive to enriching teaching theory, coming to provide theoretical guidance for teaching practice, promoting the development of teachers and students, and improving teaching quality [3-4].

2. Classroom Teaching Models in the Context of Big Data

2.1 Research on Big Data Environment Framework

BD is the enhancer of education informatization towards the peak, and smart education relying on the environment of BD will become the sword in the field of education. The smart interactive system is the use of data mining technology to collect educational data and analyze the problems encountered by learners in the learning process, so as to provide learners with reliable analysis data of learning results [5]. The BD environment analysis of this study is shown in Figure 1.

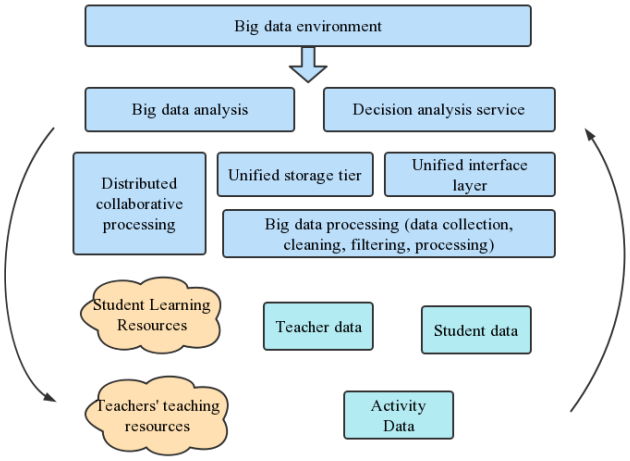

Figure 1: BD environment analysis

The analysis of the architecture of the BD environment consists of 2 levels. The first level contains a large amount of data analysis and decision analysis, and uses Hadoop technology to

realize the basic structure of a distributed system. It has the characteristics of simple structure and easy distributed application. Hadoop supports the reliable and efficient distribution of massive amounts of data [6-7].The second level is the data source, which contains a large number of students' learning and teachers' teaching resources, and uses big data analysis technology to collect, store, analyze and process teachers, students, and activity data.

2.2 Principles of Classroom Model Construction

2.2.1 Adherence to the Principle of Synergy and Cooperation

Collaboration is not limited to collaboration between teachers and students, between students and the surrounding environment, but also includes cooperation and cooperation between students and students [8-9].Cooperative learning can promote the all-round development of students. When creating a classroom teaching model, the creator must fully recognize the huge function of students' collaborative communication. Only in this way can students' cooperation and sharing be promoted, and students' spirit of cooperation can be promoted; in this way, a good classroom atmosphere can be formed; only in this way can the feelings of teachers, students, and students be further sublimated. Compared with this method of classroom teaching, it is essential [10].

2.2.2 Adhere to the Principle of Multiple Evaluation and Timely Feedback

The evaluation of the school model must take into account the principle of diversity and the possibility of feedback. First, diversity in assessment must be maintained. The diversity of assessment can include teachers, students, teachers and students of online courses on the online platform, in order to enhance the flexibility and objectivity of the assessment; secondly, it is noted that the methods of assessment can be varied, either through a process or through methods such as "periodic evaluation + results and outcomes", which can be applied according to the experience gained and the results of the assessment; in particular, the principle of timely feedback must be respected, as assessment is an incentive to make the students feel good. experience and evaluation results to be applied; in particular, the principle of timely feedback must be respected, as evaluation is an encouragement that allows students and teachers to identify their problems and develop themselves fully [11-12].

2.3 Classroom Model Design Process

Before proceeding with the design of the model for the teaching and learning model of the elective course, it is important to fully analyze and consider its constituent elements, as shown in Figure 2.

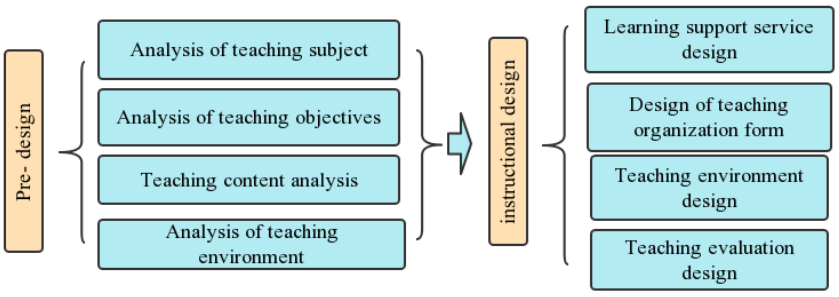

Figure 2: Classroom teaching mode design process

Regarding learners, learners are the main subjects of the teaching model, and their existing knowledge preparation, ability level, physical and mental maturity, and psychological characteristics all affect the construction of the classroom teaching model. Especially with the development of information technology and easy access, they are more eager to be mature and independent, not conforming to the old ways, advocating innovation and having their personalities more openly.

With regard to teaching content, the course content is rich and diverse, and students can flexibly take courses across disciplines or regions on online platforms according to their needs to meet learners' needs and promote students' personality development. From the perspective of the whole information environment, with the development of information technology elective teaching has more room for development, it is no longer confined to the classroom, but makes full use of all information platforms, such as electronic reading rooms, online platforms, online communities, etc. Therefore, there is more room for innovation in the teaching mode of elective courses.

An analysis of the various factors above reveals that the design of the elective teaching model must take into account the above factors and allow students to freely choose their courses and instructors according to their interests and needs; secondly, make full use of online web-based platforms and other learning support platforms to facilitate course implementation.

3. Analysis and Evaluation of the Effectiveness of the Classroom Model of Quasi-Teaching Civic Theory in the Context of Big Data

3.1 Analysis of the Effect of Fuzzy Integrated Evaluation

The smart classroom teaching model has become a reference for application and innovation. However, how to scientifically, comprehensively and accurately evaluate the teaching effect is an urgent problem to be solved in the current development of information education, and how to scientifically, comprehensively and accurately evaluate its implementation effect is an urgent problem to be solved in the current development of information education, which requires improving the quality of “wisdom” teaching and “wisdom” learning.

The smart classroom teaching model has become a reference for application and innovation. However, how to scientifically, comprehensively and accurately evaluate the teaching effect is an urgent problem to be solved in the current development of information education, and how to scientifically, comprehensively and accurately evaluate its implementation effect is an urgent problem to be solved in the current development of information education, which requires improving the quality of “wisdom” teaching and “wisdom” learning.

At present, the evaluation of teaching effectiveness in China is too single, generally through the assessment of test papers for students, to obtain the results of examinations or tests to measure the evaluation of teaching effectiveness, based on quantitative data to evaluate the students accordingly. Due to the influence of multiple factors, which leads to the evaluation cannot get quantitative evaluation, fuzzy comprehensive evaluation method is introduced in this study.

3.1.1 Selection of the Target and Scope of the Judgement

This study will judge the quality and effectiveness of classroom teaching after teachers apply the classroom teaching model of paraprofessional teaching of Civic Theory in a BD environment, and the target and scope of the evaluation will be teachers in pilot schools of smart classrooms.

Establish and define the set of indicators for judging objects U

Based on the reference materials, this paper organizes the basic principles and elements of the fuzzy comprehensive scoring method, and examines the application of this method in the classroom

teaching model evaluation system in combination with actual practice, which includes four levels of intelligent environment (A), classroom response (B), teacher satisfaction (C) and intelligent teaching effect (D).

3.1.2 Consistency Test of the Judgment Matrix

Since a two-by-two comparison of the various factors involved in the evaluation of the application of effects can lead to conflicting situations, it is not possible to be completely correct in judgment, and almost all two-by-two comparisons in the research process are allowed to have some degree of inconsistency. To solve this problem, consistency tests are performed.

If you want to find the allowable range of different degrees, you need to first find the value of the corresponding consistency index RI. For n=1,2,... ,9,Saaty gives the values of RI as shown in Table 1.

Table 1: Value of average random consistency index RI

n	1	2	3	4	5	6	7	8	9
RI	0	0	0.58	0.9	1.12	1.24	1.32	1.41	1.45

$$CI = \frac{\lambda_{\max} - n}{n-1} \tag{1}$$

$$CR = \frac{CI}{RI} \tag{2}$$

Saaty uses (1) formula to calculate the value set as the consistency indicator, the number of indicators is represented by n, and λmax represents the maximum characteristic root of this judgment matrix. The corresponding values in the table need to use the formula (2) to calculate the corresponding value of the consistency ratio, when CR < 0.1, it can be concluded that the judgment matrix with consistency is acceptable, otherwise it is necessary to make appropriate corrections.

From ①, the corresponding maximum eigenvalues of each level are λA=3.038, λB=5.0198, λC=4.0501, and λD=4.1153, which can be substituted into the consistency index formula to obtain CRU =0.00148<0.1, and similarly, CRA =0.0327, CRB =0.0044, CRC =0.0185, and CRD = 0.0427, the resulting CR result values are all less than 0.1, so each judgment matrix has satisfactory consistency.

By using the fuzzy comprehensive evaluation method to analyze and evaluate the application effect of the wisdom classroom teaching mode in the BD environment, the final comprehensive application effect is good, which fully proves that the application of this mode is conducive to enhancing students' perception of the classroom, improving the efficiency of classroom teaching, and promoting teachers' "wisdom" teaching and students' "wisdom" learning ability. It is also conducive to promoting the generation of teachers' "wisdom" teaching and students' "wisdom" learning ability.

3.2 Feedback on the Effectiveness of the Evaluation

Through the detailed design of the smart classroom teaching model in the big data environment, this model is also applied to the classroom of specific subject teaching. In the later research, the author used questionnaires, interviews and other methods to collect feedback from some experts and teachers on this model, and improved it, and improved and optimized the process in future applications, providing a more effective and intelligent teaching method for teaching.

4. Research Analysis of the Classroom Model of Quasi-Teaching Civic Theory in the Context of BD

In order to more comprehensively understand the situation of the ideological theory quasi-teaching CM in the practical use of IAPT classes in colleges and universities, this study randomly selected freshmen and sophomore students from three colleges and universities as the research subjects for questionnaires, all of whom had been exposed to blended learning in IAPT classes during their college years. A total of 200 questionnaires were distributed to investigate the situation of traditional and blended teaching classrooms in IAPT classes, and the before and after changes in both were analyzed horizontally to outline the effectiveness of the blended teaching mode in IAPT classes in three aspects: teaching means, teaching time, and learning styles.

Prior to the paraprofessional CM of Civic Theory, 58.00% of students had not been exposed to online courses in IAPT, and the classroom remained the main channel for students to acquire knowledge. Teachers imparted knowledge to students through the classroom, while students completed the absorption and transformation of knowledge in the classroom. Although with the development of network technology, teachers can use online teaching as an auxiliary means of classroom teaching and provide more learning resources to students, 37.50% of students will not take the initiative to learn the knowledge related to the course online under the traditional teaching mode, and only 22.00% of students can do active learning frequently, as shown in Figure 3.

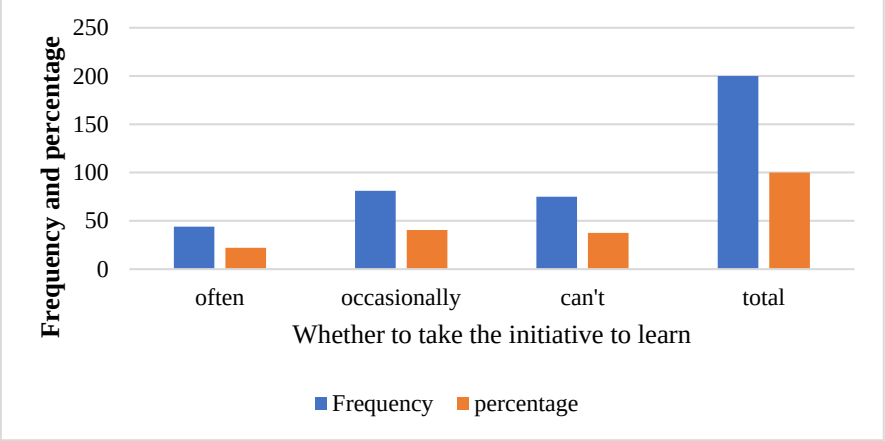

Figure 3: Whether to study the ideological and political course actively under the traditional teaching mode

The blended teaching mode combines online and offline discussions and classroom teaching, and is used throughout the process of teaching IAPT classes. In the survey of "What is your favorite part of the mixed teaching mode of IAPT class?" In the survey of this question, 28.00% of students like MOOC videos, 25.50% of students like online discussions, 22.00% of students like offline discussions, and 24.50% of students like classroom lectures, as shown in Figure 4.

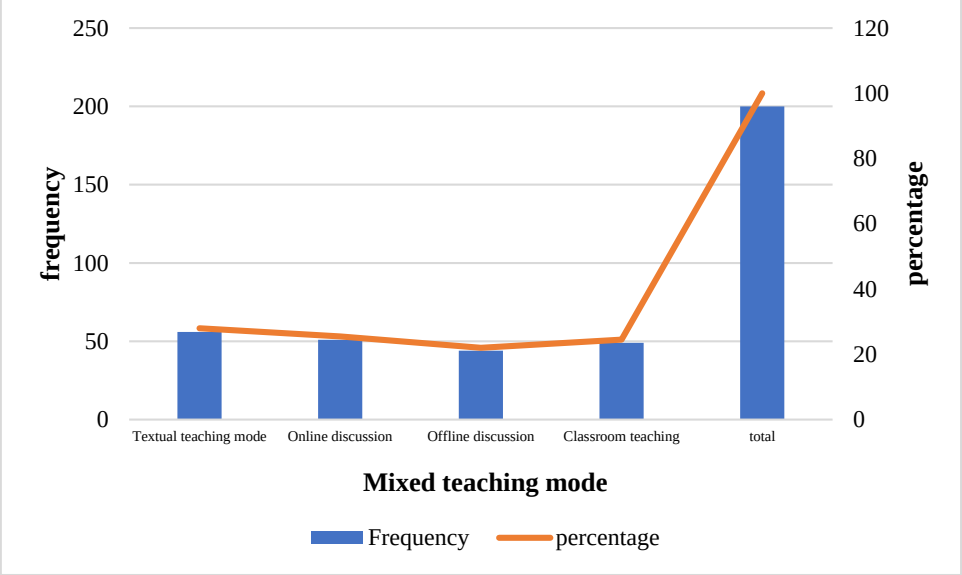

Figure 4: Favorite part of mixed teaching mode

From the survey, it is not difficult to find that the diversified teaching methods are loved by students, and the course teaching through a variety of ways will also further enrich the teaching channels and promote the development of the subject In the traditional IAPT class teaching mode, they will take the initiative to learn the relevant knowledge of IAPT class online. Teaching time changes from fixed to flexible The traditional IAPT classroom has only 40 minutes of learning time per class, which includes both students' learning of basic theoretical knowledge and teachers' expansion and supplementation of knowledge points. Because of the limited classroom time, so the class IAPT class teachers are mainly concentrated on the basic knowledge points of the explanation of its various teaching links, to achieve the independence of students in the choice of learning time and place, which is incomparable to traditional teaching.

5. Conclusions

In general, the construction of CM for the quasi-teaching of Civic Theory in the context of BD must get rid of the traditional education phenomenon of "relying on the teacher, the teaching mode and the campus environment", and create a new education and teaching activity with "students as the key, practice as the purpose and society as the classroom". It is necessary to create a new type of education and teaching activities in which "students are the key, practice is the purpose, and society is the classroom", in which students are shaped as the future builders of society, instead of being considered as the bearers of society; to create a learning environment of teacher-student communication and teacher-student mutual assistance, instead of taking the necessary practical behavior of learning as the strategy and way to obtain extra benefits of learning. The construction of the paraprofessional CM of Civic Theory enables students to thoroughly understand the difference between the actual needs of society and the objective evaluation of individuals, and to establish the interrelationship between individuals and society, so that they can be more determined to improve their own shortcomings and pay back society and the country with a down-to-earth spirit.

References

[1] Clifford Agyei, Özge Razi: The effect of extended UTAUT model on EFLs' adaptation to flipped classrooms. educ. inf. technol. 27(2): 1865-1882 (2022)
[2] Melike Özüdogru: A structural equation modelling in distance education teacher training classroom environments.

Educ. Inf. Technol. 27(4): 5103-5127 (2022)
[3] Elif Polat, Sinan Hopcan, Tugba Kamali Arslantas: The Association between Flipped Learning Readiness, Engagement, Social anxiety, and Achievement in Online Flipped Classrooms: a Structural Equational Modeling. educ. inf. technol. 27(8): 11781-11806 (2022)
[4] Naphong Wannapiroon, Paitoon Pimdee: Thai undergraduate science, technology, engineering, arts, and math (STEAM) creative thinking and innovation skill development: a conceptual model using a digital virtual classroom learning environment. Educ. Inf. Technol. 27(4): 5689-5716 (2022)
[5] Fabinton Sotelo Gomez, Juan Manuel López Meza, Carlos J. Sepulveda, Mario Fernando Solarte Sarasty, Raúl V. Ramírez-Velarde, Daniel Alberto Jaramillo-Morillo: Learning Activities Management Web Platform to Support the Flipped CM in Secondary Education. Rev. Iberoam. de Tecnol. del Aprendiz. 17(4): 318-324 (2022)
[6] Swati Jain, Puneeta Ajmera, Vineet Jain: Modelling and analysis of the classroom communication barriers using ISM: an Indian teacher's perspective. Int. J. Knowl. Learn. 15(3): 253-273 (2022)
[7] Vitomir Radosavljevic, Slavica Radosavljevic, Gordana Jelic: Ambient intelligence-based smart CM. interact. learn. environ. 30(2): 307-321 (2022)
[8] Carol Johnson, Rick L. Wilson: Practice Summary: A Multiobjective Assignment Model for Optimal Socially Distanced Classrooms for the Spears School of Business at Oklahoma State University. INFORMS J. Appl. Anal. 52(3): 295-300 (2022)
[9] Mustafa Saritepeci: Modelling the Effect of TPACK and Computational Thinking on Classroom Management in Technology Enriched Courses. technol. knowl. Learn. 27(4): 1155-1169 (2022)
[10] Murat Debbag, Sevilay Yildiz: Effect of the flipped CM on academic achievement and motivation in teacher education. Educ. Inf. Technol. 26(3): 3057-3076 (2021)
[11] Mohamad Yahya Abdullah, Supyan Hussin, Kemboja Ismail: Does Flipped CM Affect EFL Learners' Anxiety in English Speaking Performance? Int. J. Emerg. Technol. Learn. 16(1): 94-108 (2021)
[12] Cecilia Latorre-Cosculluela, Cristina Suárez, Sonia Quiroga, Natalia Sobradiel-Sierra, Raquel Lozano-Blasco, Ana Rodríguez-Martínez: Flipped CM before and during COVID-19: using technology to develop 21st century skills. Interact. Technol. Smart Educ. 18(2): 189-204 (2021)

Author Profile

Yang Xiaoping (born August 10, 1986), Male, ethnic Han, living in Chengdu, Sichuan Province. Master's degree, associate professor, secretary of Youth League Committee of Sichuan Polus International College. Mainly engaged in ideological and political education and college students' ecological civilization education research. E-mail: xiaoping.yang@polus.edu.cn