



AgEcon SEARCH

RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Teaching Design of Tourism Management Based on Information-based Teaching Method: A Case Study of Selection of Hotel Construction Site

Haiyang MA, Lejun LI, Xiaomei LIU, Weijun ZHAO*, Baoyi LOU

School of Tourism, Taishan University, Taian 271000, China

Abstract Taking the knowledge points of hotel construction site selection as an example, this paper integrated the information-based teaching method with traditional classrooms. With the aid of virtual reality (VR) technology, the information-based teaching can turn the abstract knowledge into vivid knowledge. Using the Rain Classroom platform, teachers can communicate with students in a better manner. Combined with the powerful spatial data analysis function of geographic information system (GIS) software, it is intended to provide new ideas and perspectives for the effective integration of traditional teaching classrooms and information technology, and effectively apply them to the practical teaching process.

Key words Information-based teaching, Hotel Management teaching, Integration

1 Introduction

In the *Ten-Year Plan for Education Informatization* (2011–2020), it proposed promoting the integration of information technology and teaching^[1–2] to solve the major problem that the application of information technology in education has not been effective for a long term, that is, information technology has not really produced a revolutionary impact on the education development^[3]. Information-based teaching is a new teaching model developed through the reform and innovation of educational thoughts, goals, approaches, methods, and means, using modern information technology^[4]. It is guided by modern teaching concepts, supported by information technology, and applies modern teaching methods^[5]. It brings rich teaching resources and novel teaching methods, promotes the communication between teachers and students, and changes the traditional classroom^[6–7]. Especially, the outbreak of the COVID-19 in the end of 2019 provided the information-based teaching a great opportunity to show its advantages, and its wide-ranging implementation has become a unique line of scenery in the fight against the COVID-19^[8].

Since 2020, the core of the development of education informatization in the United States of America has become to improve the scientific research ability of students and improve the teaching efficiency and quality of teachers. South Korea formulated the education informatization development strategy in 1996, and basically realized digital teaching in junior middle schools, high schools and universities, and launched the South Korean Global Education Informatization Development Plan^[9]. In 2010 and 2011, *Educa-*

tion and Technology Informatization Development Plan (2010–2014) and *Smart Education Strategy Plan* (2011–2015) were issued, transforming the 3R (reading, writing, calculation) and skills (reading and calculation) into 7C, the connotation of strategy is becoming richer^[10]. At the same time of accelerating the study of advanced information technology methods, Japan also emphasized the need to cultivate students' information technology application ability, and opened new educational courses to strengthen the combination of information-based teaching methods with traditional teaching methods.

In the 1990s, China promulgated and implemented a series of important policies in the field of education informatization, and started to promote the exploration of combining information-based teaching methods with traditional classrooms. As a new type of information technology-assisted teaching, the Rain Classroom platform connects students' pre-class preview, in-class feedback, and after-class consolidation. It not only enriches the teaching resources, but also strengthens the communication between teachers and students. Teachers can choose and match the tools they are interested in from the Rain Classroom platform to realize the organic unity of "pre-class, in class, and after class"^[11]. The biggest feature of virtual reality (VR) is immersion and interaction^[12]. VR technology can present the environment of the laboratory that could not be operated in reality before, and enhance the user's feeling and empathy. When used in Tourism Management classroom, it can make the abstract tourism knowledge become concrete, so as to stimulate interest in learning^[13].

With the rise of tourism geographic information system (GIS), the application of geographic information technology in the teaching of tourism subject becomes feasible. GIS technology has multiple functions such as buffer and overlay analysis, spatial query and analysis, three-dimensional visualization, thematic map production, dynamic monitoring, and spatial positioning and navi-

Received: October 7, 2021 Accepted: December 2, 2021

Haiyang MA, Bachelor degree, lecturer, engaged in the research of tourism resource development, tour guide services, etc.

* Corresponding author. Weijun ZHAO, PhD., professor, engaged in the research of ecological environment geography and rural revitalization.

Editorial Office E-mail: asiaar@163.com

gation. In the Tourism Management teaching, it can effectively improve students' spatial analysis and reasoning ability, provide students with multiple perspectives to solve spatial problems, change teaching methods, so as to play the role of cognitive subjects^[14].

In this situation, focusing on the existing problems in the process of integrating information technology teaching methods and classroom teaching in China, we analyzed the basis of information technology methods and the high-quality integration of classroom teaching. Taking the hotel construction site selection as an actual teaching case, through the interactive experience function of VR

technology, combined with the thematic map, buffer analysis, spatial visualization, overlay analysis and other functions of the GIS software, and the interaction function of the Rain Classroom platform, we discussed the feasible strategies of high-quality integration of information-based teaching methods and Tourism Management classrooms, so as to realize the construction of "new liberal arts". From the consolidation of old knowledge, teaching new courses, evaluation and feedback, using information-based teaching methods, we explored high-quality integration strategies, as shown in Fig. 1.

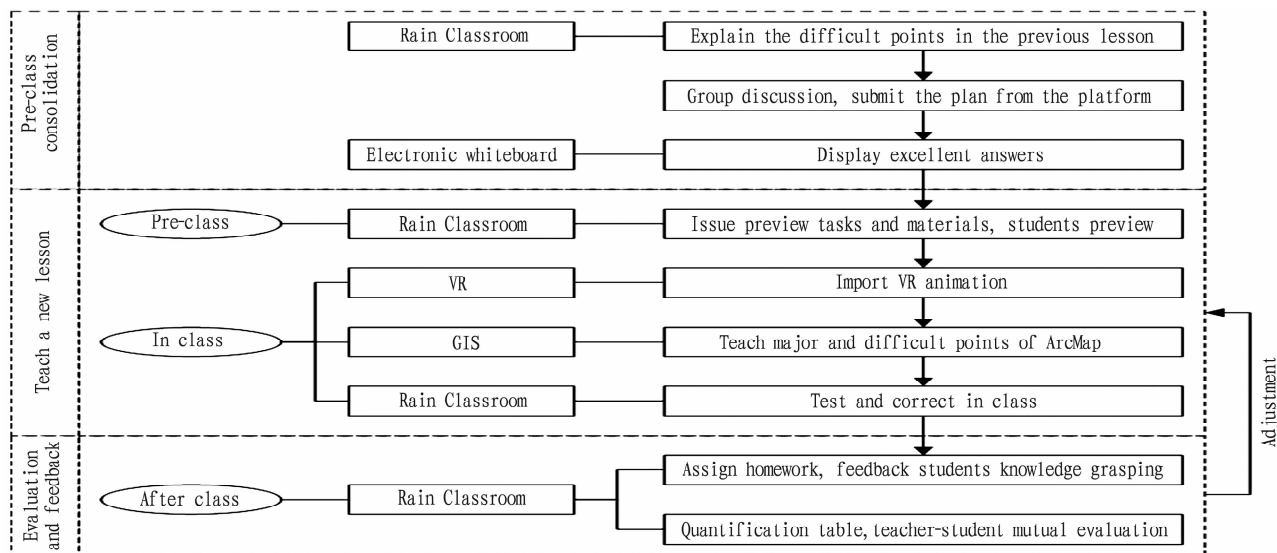


Fig. 1 Teaching mode diagram based on information-based teaching method

2 Research methods

In this study, we mainly used literature research method, teaching design case analysis method, and comparative analysis method. After determining the research direction and collecting materials, we integrated the information-based teaching methods with the Hotel Management courses. From the actual teaching design cases, we analyzed how the information-based teaching methods can be integrated with the traditional Tourism Management classroom to maximize the benefits. Besides, we compared the traditional Tourism Management classroom with the Tourism Management classroom integrated with information-based teaching methods, and analyzed the effects of information-based teaching methods, to explore high-quality integration strategies in terms of the actual effect of the class, the lesson preparation of teachers, and the preference of students.

3 Integration of information-based teaching methods and Tourism Management teaching

3.1 Diverse in forms and types but not deep in teaching contents At present, the rapid development and various forms and types of information-based teaching methods have brought new challenges to high-quality integrated classrooms, such as flipped classrooms, electronic school bag, homework applications, 3D

classrooms, etc. All these mean that teachers' teaching goals should be no longer limited to classrooms and schools. However, the emergence of various information-based teaching methods has made teachers at a loss. If such teaching methods are all used in the classroom without proper selection, or based on existing teaching cases, just copying various information-based teaching methods, it will not be conducive to the logic of the knowledge system and the depth of the teaching content. Obviously, students will not well grasp the inner knowledge. In addition, with the aid of diversified teaching resources, students' feeling of freshness has increased, and active discussions in the classroom have enlivened the atmosphere. However, in the high classroom atmosphere, in the process of competing to answer questions, students will pay too much attention to the number of answers to the questions, and it is difficult to have in-depth thinking time, so they will not think deeply.

3.2 Unreasonable time allocation in various teaching links In the process of integrating information-based teaching methods and Tourism Management classrooms, it is necessary to add some teaching links that are not available in traditional classrooms. For example, after experiencing VR technology, there will be interaction of exchanges and discussions. In the process of interaction between the teacher and the students, if the time for exchanges and discussions cannot be reasonably controlled, it will occupy the time

for the teacher to summarize and comment. As a result, the knowledge learned by the students cannot be consolidated in time, or even the students do not know the important and difficult points and just blindly exchange with each other. In addition, if the information-based teaching methods are used improperly, it will waste valuable classroom time. Therefore, it is necessary for teachers to reasonably control the time occupied by each link of classroom teaching, to grasp the time in a macroscopic manner, and to make the overall control.

3.3 Appearance of new digital terminal teaching, but still single at the application level Most of teachers still use desktop computers for teaching, few teachers use tablet computers and other types of terminal equipment, showing that the use rate of new mobile terminals in teaching applications is low. Information technology methods have been widely applied in classes, but they are rarely used in assisted learning (pre-class preparation, homework assignments, and extracurricular tutoring). The application level of information technology means is still single, especially low in the utilization rate after class.

3.4 Effective teaching integration model needed to guide the practical teaching According to the statistics of the high-efficiency teaching methods and activities that teachers in Taishan University like, most teachers selected "integrating online and offline teaching". As for the training courses that teachers hope to receive, most teachers selected the training courses of "combination of information technology and traditional classroom". These reflect that teachers need application guidance that integrates information-based teaching methods with traditional classrooms^[15-17].

4 Application of information-based teaching design taking hotel construction site selection as an example

4.1 Reasons for choosing the hotel construction site selection

In recent years, the construction of first-class disciplines and first-class courses is paying more and more attention to the comprehensive analysis and problem-solving abilities of students. In this lesson, we selected the hotel construction site selection problem that is related to life. Under the condition of simulating the actual life

situation as much as possible, we would guide students to comprehensively consider the location factors of hotel construction site selection, participate in the process of solving simulation problems, and learn about the construction of tourism elements useful to life.

4.2 Analysis of learners The learners of this lesson are sophomore students. They have a certain cognitive foundation and idea for analyzing problems in the comprehensive analysis of location factors in hotel construction site selection; however, they may have insufficient experience in comprehensive consideration. Therefore, teachers should guide students to analyze problems in a systematic and comprehensive manner.

4.3 Case analysis: taking hotel construction site selection as an example

4.3.1 Major and difficult points of teaching. Major teaching points include (i) factors influencing the site selection of hotel construction and (ii) determination of the preferred location. Difficult teaching points include (i) factors influencing the site selection of hotel construction and (ii) comprehensive analysis of the relationship between tourism and hotel construction site selection based on GIS.

4.3.2 Teaching methods. Teaching methods include situation creation method, image reading analysis method, teamwork method, and intuitive teaching method.

4.3.3 Teaching process. Part I: Consolidating old knowledge.

Teacher activities: (i) setting up a group challenge: what are the six major elements of tourism? what is the status of hotel construction among the six elements? (ii) publishing related questions on the Rain Classroom platform and sending them to students through the tablet; (iii) displaying students' excellent answers on the electronic whiteboard and summarizing the answers, and selecting the best group.

Student activities: (i) thinking independently, then making group discussions, and the group leader summarizes; (ii) uploading answers on the Rain Classroom platform within the specified time; (iii) consolidating old knowledge.

Part II: Teaching new lessons (Table 1).

Table 1 Process of teaching new lessons

Tasks	Teacher activities	Student activities	Design intention
Autonomous preview	(i) Publishing relevant preview materials on the Rain Classroom platform to guide students to complete the preview work and understand the contents to be learned (what are the factors influencing the site selection of hotel construction). (ii) Setting time-limited small questions and asking students to complete tasks within the specified time.	(i) Using the preview materials given by the teacher to log in to the learning account independently, enter and complete the preview content in the classroom. (ii) Combining the results of independent learning and knowledge reserves, exchanges and discussions within the group, and the group leader summarizes. (iii) Completing the answer within the specified time and uploading the answers.	To help students to have a preliminary understanding of the content to be learned, and enter the formal classroom with the difficult questions in the preview, so as to improve classroom efficiency and students' attention, and stimulate students' interest in learning.

(Continued)

Tasks	Teacher activities	Student activities	Design intention
Importing new lessons	<p>(i) Based on the students' preview situation (self-study's problem-solving situation), the teacher can have an overall understanding, and focus on teaching the students' major and difficult points of the course.</p> <p>(ii) Playing a VR animation of the relationship between the hotel and its surrounding scenic spots and environment.</p>	<p>(i) Watching the VR animation with the teacher's questions in mind, and thinking about the teacher's questions.</p> <p>(ii) The group exchanges and displays the thought results, the group leader summarizes, and submits the group's answers.</p>	Students learn independently, express their own opinions, exchange and display learning results, which are favorable for increasing the depth of students' thinking about problems.



Fig.2 Examples of relationship between the hotel and its surrounding scenic spots and environment

Asking such questions as: Where are the hotels generally located? What are the influencing factors?

Teaching new lessons (i) The teacher shows factors influencing the site selection of hotel construction. Using ArcMap software, the teacher shows students the relationship between hotel construction site selection and various influencing factors, and guide students to think about whether the hotel should be built within or outside the scope of influence.

(ii) (a) showing the scope affected by traffic noise in the urban area (Fig.3)

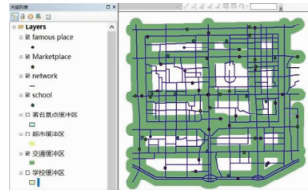


Fig.3 An example of traffic buffer zone

(b) showing the buffer zone of the supermarket's influence in the urban area (Fig.4)

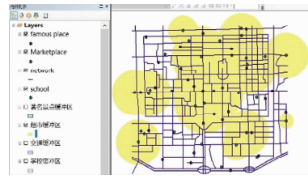


Fig.4 An example of buffer zone of the supermarket

(c) showing the scope of the influence of famous scenic spots in the urban area (Fig.5)

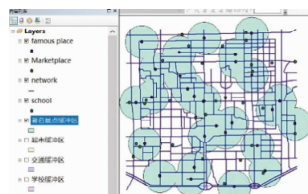


Fig.5 An example of the buffer zone of the scenic spots

(iii) Guiding students to think and comprehensively consider various factors influencing the site selection of hotel construction. Where should hotels be located? And summarizing based on the students' answers: The best hotel construction location should be within the influence scope of supermarkets, famous scenic spots, and outside the influence scope of traffic noise.

(To be continued)

(Continued)

Tasks	Teacher activities	Student activities	Design intention
-------	--------------------	--------------------	------------------

Showing the intersection of the supermarket buffer zone and the famous scenic spot buffer zone (Fig. 6).



Fig. 6 An example of intersection of supermarket and famous scenic spot buffer zones

Showing the best hotel construction location, that is, the intersection of the supermarket buffer zone and the famous scenic spot buffer zone with removal of the influence scope of the main traffic line (Fig. 7).



Fig. 7 An example of intersection of supermarket and famous scenic spot buffer zones with removal of main traffic line

(iv) Guiding students to think: In real life, for areas that also meet the above conditions, are the hotel accommodation prices the same? Why the closer you are to the city center, the higher the price of hotel accommodation?

Summary: There are many supermarkets, hospitals, and scenic spots in the city center. Therefore, we classify the entire area. The classification standards are as follows: first level (highest level): meeting three of the conditions; second level: meeting two of the conditions; third level: meeting one of the conditions; fourth level: no condition is met (Fig. 8). The darker the color, the higher the level.

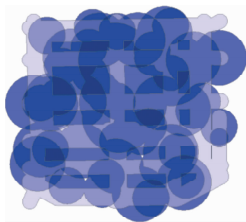


Fig. 8 Classification of conditions

Classroom testing	<p>(i) Publishing the content of in-class testing on the Rain Classroom platform:</p> <p>What factors should be considered when selecting a hotel site?</p> <p>A. Traffic</p> <p>B. Shopping</p> <p>C. Catering</p> <p>D. Entertainment and scenic spot</p> <p>(ii) Announcing the correct answers (ABCD), summarizing the knowledge points learned, and consolidating new knowledge.</p>	<p>Submitting answers within the specified time.</p> <p>Using Rain Classroom's in-class testing function to test students' mastery of knowledge in class.</p> <p>If most of the students make a mistake, it means that the students have doubts and further explanation is needed. If the students do the questions well, it means the classroom effect is good.</p>
-------------------	---	--

Part III: Evaluation and feedback.

Teacher activities: (i) assigning homework on the Rain Classroom platform; (ii) sending the quantification table to the student tablet; (iii) evaluating the groups and members.

Student activities: (i) completing homework within the specified time; (ii) scoring the class according to the actual situation; (iii) obtaining comments of the teacher.

Design intention: (i) students can consolidate the knowledge

learned; (ii) the teacher can get prompt feedback from students on the classroom effect, which is favorable for timely adjustment of teaching activities; (iii) the teacher can guide students to reflect on the class and adjust their class status and listening methods in time.

4.4 Comparison between classrooms based on information-based teaching methods and traditional classrooms We compared the classrooms based on information-based teaching methods and traditional classrooms (Table 2).

Table 2 Comparison between classrooms based on information-based teaching methods and traditional classrooms

Item	Teaching design based on information-based teaching methods	Traditional teaching design	Comparison of teaching effect
Teacher's lesson preparation time	4 h	1 h	Teaching design based on information-based teaching methods takes more time for breakthroughs in major and difficult knowledge points, and focuses on how to use information-based teaching methods to connect with students' knowledge
Teacher's teaching time	20 min	30 min	Teaching design based on information-based teaching methods gives less time of teaching, but more time for students' autonomous learning; traditional teaching design takes a longer teaching time, and needs a longer class time.
Use of information technology	The teacher thinks about how to use information-based teaching methods to stimulate students' enthusiasm and initiative in learning, and the teacher and students use the information technology jointly	The teacher uses information technology for teaching, students listen to lectures, but do not use information technology	In the classroom using information-based teaching methods, students are more active, more positive, and more confident.
Role of information technology in teaching design	Taking advantage of information technology, giving prominence to major and difficult points, and conducting preview and review.	Using as an alternative to teacher blackboard writing	Information technology is used as an auxiliary method to solve the most difficult points of teaching that are difficult to solve in traditional teaching.
Teacher's workload in the lesson preparation	Time and energy consuming	Relatively easy	In the teaching design based on information-based teaching methods, the workload of teachers has increased significantly and working time is greatly lengthened.
Teacher-student relationship	Learning together with students	The teacher gives lecture and students listen	The "democratic" teacher-student relationship in which teachers and students learn together is more favorable for the development of students.

5 Conclusions and prospects

5.1 Conclusions Applying the spatial analysis function of GIS to the teaching of hotel construction site selection, and integrating information teaching methods and tourism management classrooms are favorable for students deeply understanding the synthesis and analysis process. It is of great significance to use VR technology to explain abstract knowledge in Tourism Management classrooms, and to transform abstract and difficult tourism knowledge into lively and vivid tourism geography knowledge. It can strengthen students' perceptual knowledge, so as to transition to rational knowledge and master knowledge step by step. Through integrating the Rain Classroom platform into the Tourism Management class, it is able to well integrate preview, in-class communication, and after class consolidation, make full use of fragmented learning time, and improve efficiency and effectiveness. In terms of teaching application, the information-based teaching methods apply GIS technology to all aspects of the teaching process, integrate various teaching resources inside and outside the classroom, school, and society, and enrich the content of the Tourism Management classroom. It can let students feel that the development of GIS technology makes the tourism classroom more lively and interesting, vivid and easy to understand, and change the way of thinking about understanding nature and society. At the same time of providing more learning media, organizing students to participate in the classroom and fully discussing and expressing their opinions are favorable for the democratization of education and the development of students' innova-

tive thinking.

5.2 Prospects At present, various information-based teaching methods have been gradually entering the teaching classrooms of colleges and universities, but there are relatively few teaching cases and teaching researches. There are few high-quality integrated classroom resources, and there is still a lot of room for development. The integration of information-based teaching methods with the classrooms of various disciplines is a path that teachers need to explore continuously and also an effective way for teachers to explore high-quality teaching. Teachers should assume their responsibilities, explore high-quality integrated classrooms, enhance the vitality of tourism teaching, and realize the construction of "new liberal arts".

References

- [1] REN YQ, FENG YC, ZHENG XD. Integration and innovation, intelligent lead: Greeting the new era of educational informatization[J]. *China Educational Technology*, 2018(1): 7-14,34. (in Chinese).
- [2] JOAP JI[2012]5. Notice of the Ministry of Education on Ten-Year Plan for Education Informatization (2011 - 2020)[Z]. (in Chinese).
- [3] HE KK. The deep integration of information technology and subject teaching[J]. *Educational Research*, 2017, 38(10): 88-92. (in Chinese).
- [4] FENG YM. Research on the informatization teaching mode of "Electronic Technology" course[J]. *Art Science and Technology*, 2013, 26(1): 197. (in Chinese).
- [5] WANG HT. Advantages of informatization teaching: Take the electrical control of coal mine machinery and equipment as an example[J]. *Digital communication World*, 2017(10): 257. (in Chinese).

[6] Ministry of Education of the People's Republic of China. General High School Geography Curriculum Standards (Experimental) [S]. Beijing: People's Education Press, 2003. (in Chinese).

[7] XIA LY. A survey of the conditions for teaching graduation design and papers in colleges and universities[J]. Higher Education of Sciences, 2004 (1): 46-52. (in Chinese).

[8] JIAO JL, JAI YM, REN GM. Research on macro policies and strategies of educational informatization[J]. Distance Education Journal, 2014, 32 (1): 25-32. (in Chinese).

[9] WANG Y, ZHENG YM, JIA YM, *et al.* Research on the development strategy of ICT resources for education[J]. Distance Education Journal, 2014(6). (in Chinese).

[10] MAO CH. Enlightenment of foreign educational information development strategy to China[J]. China Adult Education, 2017(22): 103-106. (in Chinese).

[11] WANG SG. Rain Classroom; The wisdom teaching tool in the context of mobile internet and big data [J]. Modern Educational Technology, 2017, 27(5): 26-32. (in Chinese).

[12] HE MX, LI ZY. Application of VR technology in teaching[J]. China Education Innovation Herald, 2007(23): 205. (in Chinese).

[13] LIU G, LI L. Application of VR technology in high school mathematics teaching[J]. Teaching Reference of Middle School Mathematics, 2020 (Z3): 149-151. (in Chinese).

[14] WANG Y, YANG GL, ZHANG C. Research on the status quo and countermeasures of informatization teaching in local colleges and universities under the background of the new era [J]. Computer Knowledge and Technology, 2018, 14(23): 173-175. (in Chinese).

[15] HU XY, ZHU L, FENG ZH, *et al.* The development of ICT-based instructional models and methods: Trends and directions[J]. E-education Research, 2016, 37(6): 12-19. (in Chinese).

[16] BAO J. Study on the integration and application of modern and traditional teaching methods in geography teaching in senior middle schools[D]. Nanjing: Nanjing Normal University, 2015. (in Chinese).

[17] WANG CH. Evaluation and analysis of Babanski's teaching process optimization theory[J]. Shandong Social Science, 2012(10): 188-192. (in Chinese).

(From page 54)

gates whether the students are satisfied with the overall experimental design. The second part asks questions about the reform contents adopted, and lets the students to give appropriate options. The options are divided into approval, neutrality and disapproval. Through feedback, it can know which aspects of the reform process have been affirmed and which aspects need further improvement, so as to further summarize and improve the later teaching.

3.5 Key issues to be solved Under the demand of training high-level applied talents, the formulation of the integration and optimization scheme of the teaching content of the curriculum Packaging Design; design, analysis and feedback of practical teaching.

4 Research method and technical route

Technology roadmap is shown in Fig. 1.

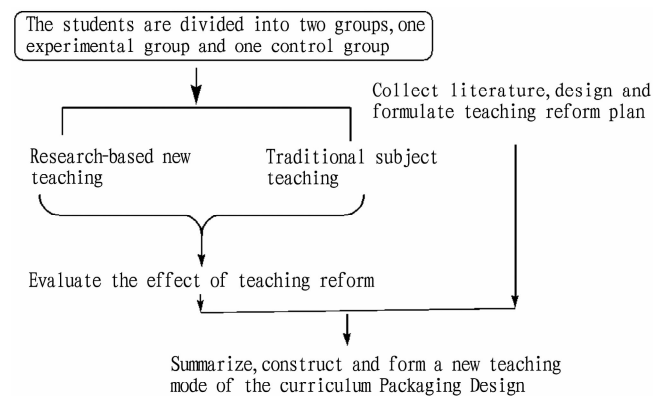


Fig. 1 Technology roadmap

The project adheres to the principle of consistency between observation and logic and the combination of theoretical research and practice, and adopts questionnaire method, interview method, discussion teaching method, case method, analysis and com-

parative research method, and induction and summary method to conduct a comprehensive and systematic theoretical exploration on the curriculum Packaging Design under the background of "made in China 2025", trying to truly reflect its scientificity and practicability.

5 Innovations of main ideas

The mixed teaching mode of the curriculum Packaging Design is formed by the integration of multiple teaching methods such as role exchange, independent learning and teaching; the new teaching mode of the curriculum Packaging Design is constructed by the combination of curriculum and students participation, theoretical teaching and practice; under the background of made in China 2025, guided by the social demand for talents, the ability-based teaching and training of the curriculum Packaging Design are conducted.

References

[1] Made in China 2025 & new generation of intelligent manufacturing advanced research class successfully held [J]. Green Packaging, 2019 (12):11-13. (in Chinese).

[2] ZHANG YT. Interpretation of the Made in China 2025: "Three-step" strategy of manufacturing power[J]. Industrial Furnace, 2021, 43(4): 5. (in Chinese).

[3] P-MEC China 2016 leading China's pharmaceutical machinery industry moving towards Made in China 2025[J]. China Biotechnology, 2016, 36 (5): 137. (in Chinese).

[4] HAO FZ. The application of mixed teaching mode in the course of Packaging Design[J]. Green Packaging, 2021(9):60-63. (in Chinese).

[5] XIANG JX. Research on the reform of project-based teaching mode of color teaching in the Packaging Design[J]. Shenhua, 2021(7):96-97. (in Chinese).

[6] YIN DM. Discussion on the role of made in China in the international economic pattern[J]. China Collective Economy, 2020(23):13-16. (in Chinese).