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Development of Just-in-Time Teaching Model to Enhance Aerobics Dance Learning Outcomes for Physical Education Majors at Normal University

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Abstract
Background and Aims: In the context of the development of the digital information age, higher education needs to carry out information teaching and innovation. In the aerobics course of physical education major in normal universities, Students were required not only to master the basic knowledge and technical skills of aerobics but also to have the application ability of information technology and the innovation ability, which were neglected in the current aerobics dance teaching. This study aims to develop a Just-in-Time Teaching (JiTT) model to enhance the quality of aerobics dance teaching.
Materials and Methods: In this study, a questionnaire survey was conducted among 24 teachers of aerobics dance and 327 aerobics students among 2160 students in 6 normal universities in Guizhou Province using the Taro Yamane method.; Secondly, 7 experts were interviewed to discuss the status quo of aerobics dance teaching in normal colleges in Guizhou province; Thirdly, 19 Delphi experts conducted two rounds of consensus, and the IQR < 1.5, the median >3.5, and the theJust-in-Time Teaching (JiTT) model elements were selected. Finally, 9 focus group experts explored the drafting of the aerobics dance Just-in-Time Teaching (JiTT) model; Finally, 9 experts participated in the Connoisseurship and using a five-point scale, confirmed the aerobics dance Just-in-Time Teaching (JiTT) model.
Results: This study constructed the aerobics dance Just-in-Time Teaching (JiTT) model, The conclusion includes 3 core categories: cognitive construction of knowledge skills, internalization enhancement of knowledge skills, consolidation sublimation of knowledge skills, including 9 first-level elements, 20 second-level elements, and 72 third-level elements.
Conclusions: The 3 core categories of the aerobics Just-in-Time Teaching (JiTT) teaching model were to form a benign closed-loop teaching model of continuous improvement. Experts agree that the constructed aerobics Just-in-Time Teaching (JiTT) teaching model has obvious advantages and potential in terms of frame structure, constituent elements, information adaptation, and the conformity of normal school students' training standards.
Keywords: Normal University; Aerobics Dance Teaching; Just-in-Time Teaching (JiTT) Model

Introduction

Aerobics dance was also a major compulsory course for physical education majors in Chinese universities. Since 2018, the Ministry of Education of China had implemented the "Quality Standards for Training Talents for Normal Majors" nationwide, which means that the reform of the training model of normal college students had opened a new chapter (Wang, 2019). At the same time, China promulgated the China Education Modernization 2035 and the Ministry of Education promulgated the Education Informationization 2.0 Action Plan. From the core concept and characteristics of education informatization 2.0, the deep integration of teaching and information technology was undoubtedly the top priority, which requires classroom teaching, teaching model, teaching content, etc., to carry out informatization reform and innovation.

Researchers have long paid attention to the research on aerobics dance teaching reform in normal universities. Researchers found the Just-in-Time Teaching (JiTT) teaching model. Just-in-Time Teaching (JiTT) was a new process assessment strategy for Teaching student situations based on the interaction of "Web-based study assignment" and "active learner classroom". (Novak, 1999). At present, the practical research results of the Just-in-Time Teaching (JiTT) teaching model applied to physics, clinical medicine, software engineering, and physical education are abundant. Relevant research results show that Just-in-Time Teaching (JiTT) teaching model has a positive impact on teaching and can fully mobilize students' subjective initiative in learning. With the characteristics of low teaching cost, high value, high operability, and feasibility, Just-in-Time Teaching (JiTT) teaching

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model is superior to the traditional teaching model in physical education teaching in secondary vocational schools, and can effectively improve teaching quality.

Therefore, the researchers decided to develop the aerobics dance Just-in-Time Teaching (JiTT) model for the physical education major of the normal university based on the research on the current situation of aerobic dance teaching, hoping to change the deficiencies in the teaching of aerobics dance and provide theoretical reference for improving the teaching effect of aerobics dance courses for the physical education major of the normal university.

Objectives

To develop a Just-in-Time Teaching (JiTT) model to enhance aerobics dance learning outcomes for physical education majors at a normal university.

Literature Review

In recent years, due to the special advantages of aerobics dance, it was not limited by venues and equipment and was relatively safe as a whole. It has gradually been highly valued by parents and colleges (Gong, 2022) and attracted the relevant experts and scholars to participate in the research on the teaching of aerobics dance.

More and more researchers have paid great attention to the research of aerobics dance teaching reform, with rich results. At present, most of the existing teaching models of aerobics do not involve the use of information technology, which was mainly reflected in the teaching exploration of group cooperation and inquiry of students in class. Such as the "club teaching model" (Tang, 2019), "small group teaching model", "Problem-Based Learning (PBL) teaching method" (Zhang & Yang, 2023), "5E teaching model", "Conceive-Design-Implement Operate (CDIO) teaching model" and so on; In a few studies, information technology was combined with aerobics classroom teaching and online teaching was constructed by mobile phone We, Chat, QQ, short video, and other information network platforms. However, the development of course materials and monitoring of learning feedback information on the information teaching platform were simple or not systematic, and the formative assessment content of students' independent learning was lacking. At the same time, the integration of informatization and teaching was not deep enough. For example, "Outcomes-Based-Education (OBE) + learning guide" (Sun, 2020) and "online and offline mixed teaching model" (Chen, Q.2022).

There is no research on the construction of the Just-in-Time Teaching (JiTT) teaching model in the related research on aerobics teaching. Improving the teaching effect of aerobics courses was a problem worthy of research and discussion under the requirements of education informationization and the "Teacher Professional Certification Standard."

In 1999 (Novak, 1999)， four teachers from Aeronautical College and Purdue University wrote a monograph on the Just-in-Time Teaching (JiTT) model, Timely Teaching: a Collection of Active Learning and Web Technologies, abbreviated as Timely Teaching.GM Novak (Novak, 1999) proposed integrating network technology into teaching, feedback on students' doubts through the network before class, and designing the teaching content with the mastery of the situation so that students can grasp the learning rhythm, solve questions, and increase their self-confidence in learning. Xu (2019) applied the Just-in-Time Teaching (JiTT) model to the teaching of "determination of the optimal PH of salivary amylase", and the evaluation results were significantly better than those of the classes under the conventional teaching model. The research concluded that the teaching model could cultivate students' independent thinking ability, innovative thinking, and group cooperation abilities.

To sum up, Just-in-Time Teaching (JiTT) model can not only fully combine the interactive advantages of online teaching and the temporal and spatial characteristics of practical teaching, but also expand the timely feedback between teachers and students and strengthen the interaction between teachers and students. At the same time, it can highlight the concept of "teacher-led, student-centered", which is in line with the current information teaching requirements. The existing research results laid a theoretical foundation for building the Just-in-Time Teaching (JiTT) model of aerobics in this study. The above research results provide a reference for the research to develop the Just-in-Time Teaching (JiTT) model framework of aerobics dance.

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Therefore, based on the research results of the existing scholars, the researchers try to develop the Just-in-Time Teaching (JiTT) teaching model of aerobics dance course, It was hoped to provide innovative ideas for improving the quality of aerobics dance talents in physical education majors of normal colleges and universities, and improve the teaching effect of calisthenics.

Conceptual Framework

The conceptual framework for this research was as follows:

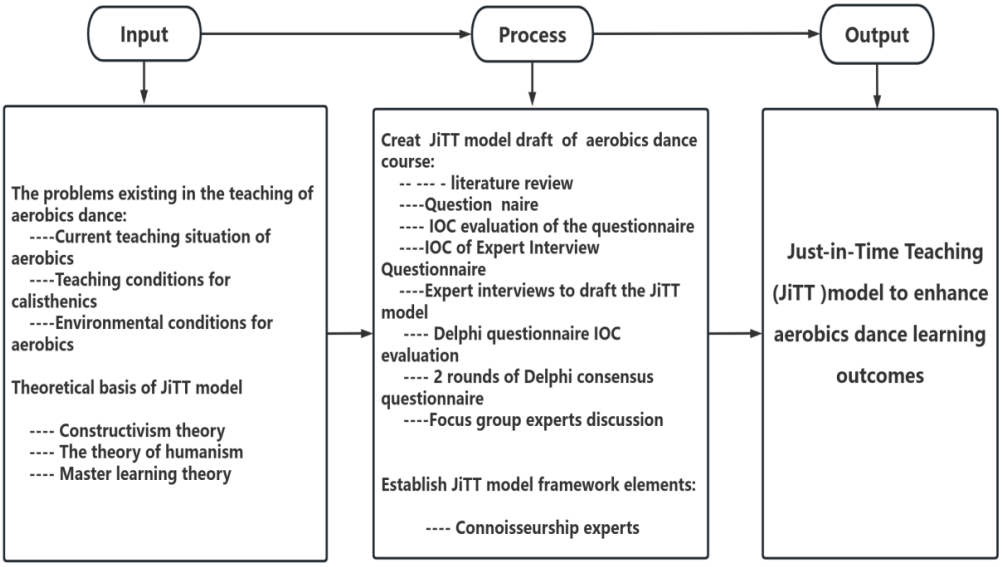

Figure 1 Conceptual framework

Methodology

Population: The survey subjects of this study were teachers and students of aerobics dance courses in the physical education major of 6 normal universities in Guizhou Province. The total number of aerobics dance teachers was 24, and the total number of students was 2160.

Samples: All 24 aerobics dance teachers served as the sample for the teacher questionnaire survey in this study. There were 8 male teachers and 16 female teachers.

The student sample was calculated using the Taro Yamane ($n = N / (1 + Ne^2)$) method. The sampling error of the sample was set at a 95% confidence level, and the sample size was calculated to be 327 based on a total number of 2,160 students. There were 152 male students and 175 female students.

Research Participation

Experts for IOC test: Using a method of destination sampling, 5 experts were invited to test the goals of teacher questionnaires, student questionnaires, expert interviews, and Delphi consensus questionnaires for testing. These 5 experts had more than 10 years of work teaching experience and had masters, associate professors, and above.

Experts for interview: Purposeful sampling was adopted to invite 7 experts for interviews. A sports administrator, 2 physical education teachers, and 4 aerobics teachers in the field of education and teaching evaluation. All of the 7 experts had a master's degree or above, associate senior professional title or above, and more than 10 years of working experience. The experts who drew up the first draft of the teaching model.

Experts for Delphi Consensus revision: Using the snowball sampling method, the experts invited other experts who had been engaged in research in related fields for many years to form a 19-member Delphi expert group. They were leaders of university management departments, experts in pedagogy curriculum theory, physical education teachers, university aerobics teachers, senior aerobics coaches, and modern educational technology experts.

Experts for focus group discussions: A purposive sampling method was used to invite 9 focus group experts, including 3 sports experts, 5 aerobics teaching and training teachers, and an

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information technology expert. They had more than 15 years of work experience, an associate professor title or above, and a master's degree or above.

Experts for connoisseurship: A purposive sampling method was used, and 9 Connoisseurship experts were invited. Include 3 sports scientists, 3 physical education specialists, 3 aerobics dance teachers. 15 years of working age or above, master's degree or above, associate professor and above title.

Data collection

Data collection of questionnaire IOC test: Use the "Question Star" software to distribute and collect 5 experts were distributed to 5 experts to conduct objective consistency (IOC) tests.

Data collection of the questionnaire: Use the "Question Holding Star" software to distribute and collect questionnaires to conduct a questionnaire survey of 24 teachers in sports education in 6 universities; use systematic random sampling methods for students in 6 schools to conduct 327 Questionnaire surveys.

Data collection of expert interview: through face-to-face interviews, telephone interviews, and email correspondence with 7 experts. With the consent of the experts, writing and recording can collect expert interview information and organize text information.

Data collection of Delphi Consensus Questionnaire rounds of Delphi expert consultation volumes were distributed to 19 experts through emails. Experts choose or delete each element of the initial draft of the Just-in-Time Teaching (JiTT) teaching model built by the constructed aerobics dance, and the experts are also informed of the time deadline for the response questionnaire. Researchers collect questionnaires after the deadline.

Collection of information discussed by the focus group: We produced an outline of the focus group discussion and adopted the form of online conferences to discuss. Experts discussed the rationality of the factors and framework structure of the fitting of the fitting of aerobics Just-in-Time Teaching (JiTT) teaching model, collecting expert discussions, and sorting into text data.

Collection of evaluation by the Connoisseurship Experts: Design aerobics Just-in-Time Teaching (JiTT) teaching model appreciation outline, invited 9 experts to participate in the discussion, the discussion form is online Tencent meeting, Collect the evaluation suggestions of expert appreciation and sort out text materials. Then formulate a gymnastic Just-in-Time Teaching (JiTT) teaching mode to appreciate the questionnaire, and use the Locker five-level system to collect questionnaire statistics.

Data Analysis

Validity and reliability test of teacher and student questionnaire: IOC test of the questionnaire: objective consistency test of the questionnaire (0.60<IOC<1.00, Represents effectiveness).

Reliability test of the questionnaire: The method of retest was used to test the reliability of the teacher questionnaire and the student questionnaire. The results of the two questionnaires were imported into spss26.0 statistical software for internal reliability analysis. Cronbach's α coefficient value (α>0.8, indicating good reliability).

Statistical analysis of questionnaire collection results: The software package was used to collect and organize the data obtained from the teacher questionnaire and student questionnaire. The teacher questionnaire Comprehensive value $\overline{X}$=2.82, S.D.=0.75. The result is medium. The student questionnaire Comprehensive value $\overline{X}$ =3.11, SD=0.89, The result is medium.

Information analysis of expert interviews: Using package software analysis, sorting out the results of expert interviews, and forming a draft of the teaching mode of fitness exercise.

Data analysis of Delphi consensus revision: The Delphi consensus revision was carried out in 2 rounds. SPSS 26.0 was used to calculate the median and IQR, and the median ≥3.50 and IQR≤1.50 indicated that the item could be retained.

Content analysis of focus group discussions: Through focus group expert discussions, experts extracted 3 core categories based on the main elements of the first draft of the Just-in-Time Teaching (JiTT) model for aerobics dance.

Connoisseurship experts confirm aerobics dance Just-in-Time Teaching (JiTT) model analysis: Connoisseurship experts evaluate the text content analysis of the fitting dance Just-in-Time

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Teaching (JiTT) model. Used the Likert scale "five levels" (Likert, R.1932) grading system to score the Just-in-Time Teaching (JiTT) model framework for aerobics dance.

4.51-5.00 Represent Very high level
3.51-4.50 Represent High level
2.51-3.50 Represent Medium level
1.51-2.50 Represent Low level
1.00-1.50 Represent Very low level

Results

Results of the survey on the current situation of aerobics teaching

This study distributed questionnaires to 24 aerobics dance teachers majoring in physical education in 6 normal universities in Guizhou Province. The contents of the survey include the professional level of aerobics dance, the satisfaction of aerobics dance classes, the use frequency of teachers' information-based teaching, and the influence of teachers' teaching ability on the teaching effect.

Table 1 Results of some questions in the teacher questionnaire

Questionnaire Items	Total Score		Result
	$\overline{X}$	S.D.	
What is your level as an aerobics dance instructor?	3.00	0.93	Medium
What is your level as an aerobics dance judge?	2.96	1.00	Medium
What is your level as an aerobics dancer?	1.08	0.72	Very low
Does the number of hours for aerobics dance classes in your school meet actual teaching needs?	2.37	0.92	Low
How often do you use information network teaching equipment in aerobics dance teaching in your school?	2.04	0.91	Low
Teacher teaching goals had a degree of impact on teaching.	3.29	0.46	Medium
The influence of teacher teaching informatization application ability on teaching?	3.08	0.78	Medium

About the level of teachers' aerobics dance skills. The result was Medium, which means that most teachers, coaches, and referees had a medium level of qualifications. The level of teachers' aerobics dance athletes, $\overline{X}$=1.08, $\overline{X}$<1.5, the result was Very low. This shows that the level of teachers' aerobics dance athletes was low, and the professional technical level $\overline{X}$ = 2.37, $\overline{X}$ <2.50, The result was Low. This shows that teachers believe that the number of aerobics dance classes cannot meet the teaching needs and the teaching hours were $\overline{X}$=2.04, $\overline{X}$<2.50, and the result was Low. This indicates that the frequency of teachers' application of information-based teaching in teaching was relatively low. In the investigation of the influence of teachers' ability to design teaching objectives, the application of teaching informatization, the ability of teaching organization the choice of teaching methods, and so on the teaching effect, the results were Medium.

The research from the students' love degree of aerobics dance course, the satisfaction of teaching information application, and the frequency of pre-class preview and after-class review were investigated, and the results are shown in Table 2.

Table 2 Results of some questions in the student questionnaire (N=320）

Questionnaire Items	Total Score		Result
	$\overline{X}$	S.D.	
Do you like the degree of aerobics dance courses?	3.96	1.02	High
How satisfied are you with the information-based teaching in aerobics dance teaching?	2.07	0.73	Medium
How often do you automatically prepare for before class?	1.93	0.83	Low

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Questionnaire Items	Total Score		Result
	$\overline{X}$	S.D.	
How often do you review after class?	2.04	0.78	Low
How difficult do you think the assessment of aerobic dance courses is?	2.93	1.37	Medium
Do you think the assessment of the gymnastic dance course is reasonable?	2.88	1.41	Medium
Do you think physical fitness in the learning of aerobics?	3.36	0.48	Medium
Do you have the satisfaction with the teaching methods and means of aerobics dance and dance?	2.32	1.03	Low
Are you satisfied with the pattern of the gymnastic dance teaching organization?	2.01	0.68	Low
Are you satisfied with the environmental conditions of aerobics dance and dance teaching?	3.85	0.87	High

Investigates the liking degree of students for aerobics dance courses, $\overline{X}$=3.96, $\overline{X}$ >3.50, indicating that most students like aerobics dance $\overline{X}$=2.07, 1.50<$\overline{X}$<2.50, and the result was Low, it shows that students' satisfaction with the application of information technology in aerobics dance teaching was low. The frequency of students' pre-class reviews and after-class reviews in the study of aerobics dance course $\overline{X}$<2.50, the result was Low. The extent to which students perceive coordination, flexibility, strength, endurance, and physical fitness to affect learning, the result was Medium. In the survey of students' satisfaction with the teaching method and teaching mode of aerobics dance, the results were low.

In conclusion, through the questionnaire survey, it was found that the teaching of aerobics dance in current universities has problems such as insufficient teaching goals, lack of teaching content, old teaching methods, insufficient application of teaching information media, and incomplete teaching evaluation. To further solve the problems of the teaching of aerobics dance, the next step of expert interviews is to seek solutions.

Draft the results of the aerobics dance Just-in-Time Teaching (JiTT) model

Results of expert interview

7 experts were invited to have face-to-face interviews to discuss how to solve the existing problems in aerobics dance teaching and to seek the composition of the Just-in-Time Teaching (JiTT) model of aerobics dance. Experts believe that Humanism theory, constructivism theory, and mastery learning theory can be used as the theoretical basis of the Just-in-Time Teaching (JiTT) model in aerobics dance. Expert 3 believes that the focus of the aerobics dance JiTT model was to establish goals. Expert 4 and Expert 5 believe that the core of the construction of the JiTT model was the development of teaching content resources. Expert 6 believes that the key to the fitting of the JiTT model was the teaching activity. Expert 4 and Expert 7 believe that the must-had for the Framework of the JiTT teaching model was teaching evaluation.

As a result of comprehensive expert interviews, experts believe that to solve the current problems in aerobics dance teaching, we should follow the aspects of aerobics dance teaching concepts, teaching materials, teaching and learning, teaching environment, teaching goals, teaching methods, evaluation, and feedback Further improvement. The results of the discussion provided a comprehensive reference for drafting the composition elements of the Just-in-Time Teaching (JiTT) model of aerobics dance.

Delphi Consensus revision results

Researchers invite 19 experts to score the importance of questionnaires by online email. The importance adopts a five-level system. Invite experts to select 9 elements of level 1, 21 elements of level 2, and 100 elements of level 3. There were 2 rounds of Delphi consensus.

Results of the first round of Delphi expert consensus: All of the first-level 9 factors. IQR <1.5, Median >3.5, all factors were in line with the retention criteria. All of the second-level 21 elements, 20 items IQR <1.5, Median >3.5, and 20 factors were in line with the retention criteria. Of all of the third-level 100 elements, there were 28 factors with IQR >1.5 and median <3.5, In 16 of them, experts

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believe that some element Settings exist duplication, or were not important, and can be directly deleted. Among the secondary indicators, the "B13 teaching introduction part", IQR>1.5, Median<3.5, According to expert advice, merge with B14. Among the 28 third-level elements that did not meet the retention conditions, experts believe that there were similarities in the functional attributes of 12 elements, or there was an inclusion relationship between them, and it was recommended to merge them.

After the first round of expert consultation to optimize the index elements, the optimized 9 first-level factors, 20 second-level factors, and 72 third-level factors will be selected as the core content of the second round of 19 experts' consultation questionnaires, and sent to nineteen experts again for the second round of review, to further build consensus. The result of the second round of Delphi expert consensus was all 9 first-level factors, 20 second-level factors, and 72 third-level factors. Median>3.5, and the IQR<1.5. All elements meet the retention criteria. In addition. After a comprehensive review, the expert team did not put forward any additional suggestions for modification, which further confirmed the rationality and reliability of the evaluation results.

After two rounds of Delphi consensus modified element framework, finally determined the composition element system of aerobics dance Just-in-Time Teaching (JiTT) model: including 9 first-level elements, 20 second-level elements, and 72 third-level elements.

Focus group to explore the aerobics dance Just-in-Time Teaching (JiTT) model.

To confirm the scientific and feasibility of the aerobics Just-in-Time Teaching (JiTT) model, 9 experts were invited to conduct a focus group discussion. According to the discussion of the focus group experts, Experts believe that necessary to make full use of the teaching link, the main composition of the gymnastic dance Just-in-Time Teaching (JiTT) model framework, and Extract the 3 core categories, the cognitive construction of knowledge skills, the internalization of knowledge skills, and the consolidation of knowledge skills, To correspond to the pre-class preparation, classroom implementation and after -school reflection of class structure, respectively.

Connoisseurship experts confirmed the framework system of the JiTT model.

Invited 9 experts to participate in the appreciation and discussion of the framework system of aerobics dance Just-in-Time Teaching (JiTT) model. using the Likert scale "five levels" grading system, according to the comprehensive calculation of expert scores, the $\overline{X}$>4.51 was regarded as the standard of retaining elements, which proves that the components of the model are reasonable and practical.

By calculating the average given by the experts, all the factor's results were $\overline{X}$>4.50, therefore, all the factors can be very high, with rationality and practicability. The appreciation group finally determined the framework system of the aerobics dance Just-in-Time Teaching (JiTT) model, which was composed of first-level elements nine, second-level elements twenty, and third-level elements seventy-two under three core categories. The researcher finally integrated and established the aerobics dance Just-in-Time Teaching (JiTT) model framework structure model as shown in the following figure.

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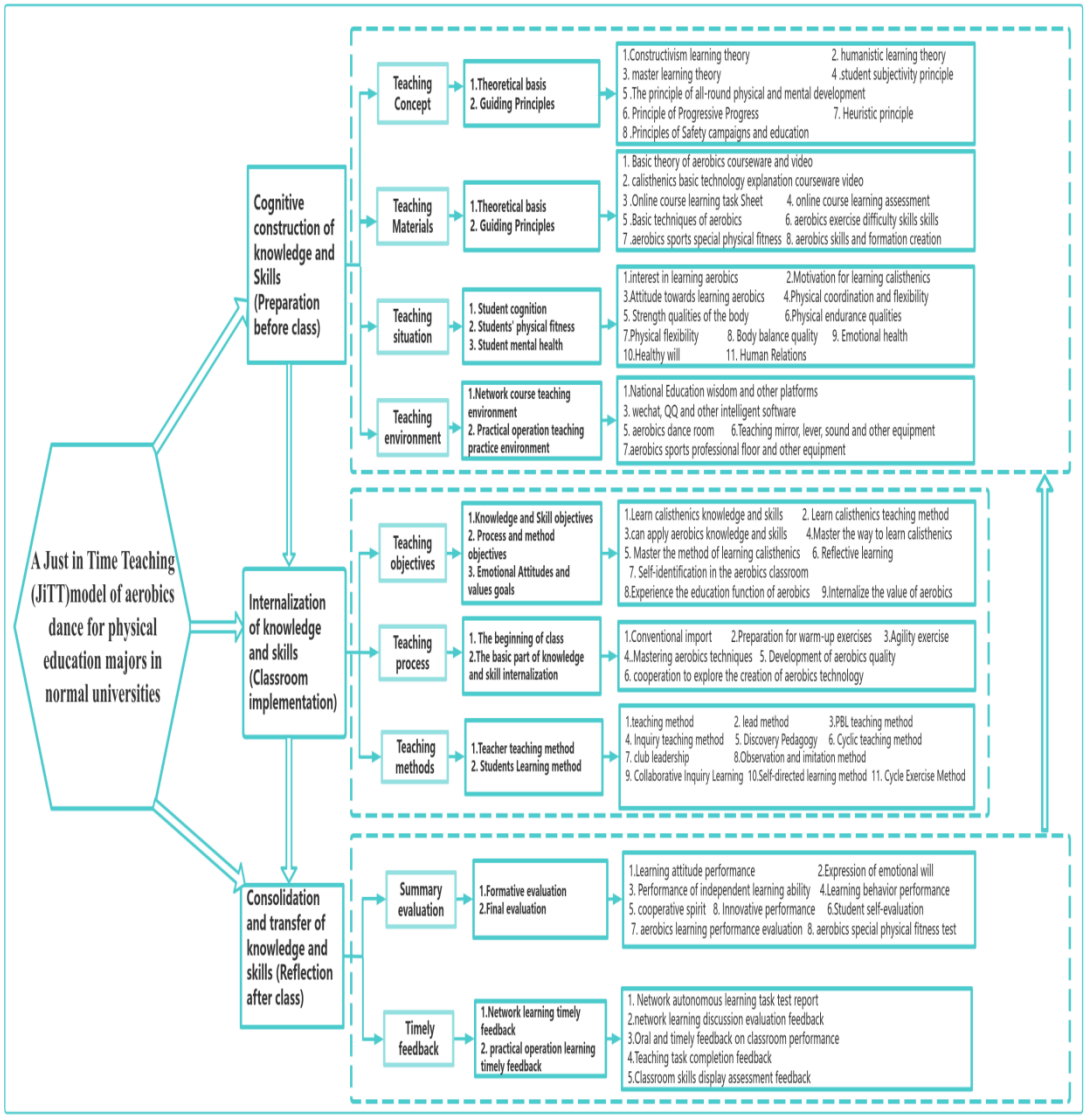

Figure 2 The aerobics dance JiTT model framework system results

Conclusion

The conclusion of this study was to construct the Just-in-Time Teaching (JiTT) model of aerobics for physical education majors in normal universities. Based on investigating the current status of aerobics dance teaching in physical education majors of normal universities in Guizhou, the literature method and expert interview method are used.

This paper probes into the construction of the Just-in-Time Teaching (JiTT) model to improve the current aerobics teaching problems and drafts the Just-in-Time Teaching (JiTT) model according to the suggestions of literature and expert interviews. 9 first-level elements, 21 second-level elements, and 100 third-level elements are drawn up. Through Delphi consensus, focus group, and expert connoisseurship, the teaching model of aerobics Just-in-Time Teaching (JiTT) was established. Under the command of the core categories of 3 aspects, the system was composed of 9 first-level elements, 20 second-level elements, and 72 third-level elements. Appreciation experts agree that the constructed aerobics Just-in-Time Teaching (JiTT) model has obvious advantages and potential in terms of frame structure, constituent elements, information adaptation, and the conformity of normal school students' training standards.

Discussion

This research result was to construct the teaching model of aerobics JiTT. Its guiding ideology is based on the concept of "student-centered, output-oriented and continuous improvement" of the

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"Teacher Training Professional Certification Standard". This is consistent with the employability-oriented system structure concept of aerobics professional talent training constructed by Wang (2019). He proposed that aerobics teachers should change the traditional teaching concept, establish a new teaching system, and start by innovating the teaching content system of aerobics specialization, attaching importance to the healthy physical and mental development of students, improving their personality, and highlighting their main body status.

The theoretical basis of the Just-in-Time Teaching (JiTT) model of aerobics dance: The aerobics Just-in-Time Teaching (JiTT) model constructed in this study takes constructivism, humanism theory, and mastery learning theory as the theoretical basis. This is the same as Marrs & Chism's (2005) view that JiTT is an effective Teaching student situation model, which includes the ideas of constructivism, independent learning, and formative evaluation. The constructivism learning theory regards students as the subject of learning activities and based on the constructivism learning theory, it follows the principle of "knowledge as the center" and follows that teachers should change from "church" to "teaching" and students should change from "learning" to "learning" (Chang, 2016). Some scholars regard constructivism and humanism theories as the theoretical basis of the Just-in-Time Teaching (JiTT) model, and the relevant research conclusions are in line with each other.

The framework connotation of the Just-in-Time Teaching (JiTT) model of aerobics dance: The Just-in-Time Teaching (JiTT) model of aerobics model constructed in this study includes 9 first-level elements, 20 second-level elements and 72 third-level elements under three core categories: cognitive construction of knowledge skills (preparation before class), internalization and improvement of knowledge skills (implementation in class) and application and sublimation of knowledge skills (reflection after class). The research results are consistent with the research conclusions of some scholars.

Based on the JiTT, changes the fixed limitation of traditional curriculum content in secondary vocational schools. The course was divided into 3 parts: pre-class, classroom, and after-class, so that students could learn at their own pace according to their own learning situation, and they could get timely help from teachers and classmates, so that they had stronger interest and enthusiasm in learning, and can effectively cultivate students' learning ability, self-confidence, and collaborative learning ability. David et al (2023) estimate the impact over five semesters of a methodology based on Just in Time Teaching in Physics for Engineering laboratory courses. They conclude that the implementation of JiTT improves the grade distribution over higher values, suggesting that students have better learning outcomes; more efforts are needed in Physics III laboratories to achieve a similar (or greater) increase in grades than in Physics I and II. Ayu et al (2019) controlled the experiment on 60 students of Chengdu Railway Health School, and analyzed and compared the test data of the students' PE scores, independent learning ability, learning effect evaluation, and satisfaction with the teaching model before and after the experiment in detail. The Just-in-Time Teaching (JiTT) model was superior to the traditional teaching model in physical education teaching in secondary vocational schools. Based on the research on the connotation and characteristics of the Just-in-Time Teaching (JiTT) model.

In general, the Just-in-Time Teaching (JiTT) model of aerobics teaching constructed in this study and the whole structure of the Just-in-Time Teaching (JiTT) model fully reflect the integrated resources of network courses and highlight the feedback loop path of aerobics before, during, and after class. Relevant research confirmed that Just-in-Time Teaching (JiTT) model was constructed by the course structure before, during, and after class, and it was feasible and effective after practice.

Recommendation

The aerobics dance Just-in-Time Teaching (JiTT) model framework system constructed in this study provides theoretical reference guidance for the teaching of aerobics elective and compulsory courses in the physical education major of current normal universities. The researchers can next conduct experimental research on the Just-in-Time Teaching (JiTT) model of aerobics dance. Teaching researchers may face some challenges in the practice of the Just-in-Time Teaching (JiTT) model of aerobics dance. The researchers make recommendations:

On the one hand, we will strengthen the construction of the aerobics and dance online course resource platform, combine theoretical knowledge with skill practice, and give full play to the network feedback effect of the aerobics and dance JiTT model.

On the other hand, pay attention to the diversification of teaching methods and teaching evaluation subjects. Teachers can rely on platforms such as "intelligent education" or "learning" to achieve online and offline hybrid diversified teaching. At the same time, the main body of teaching

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evaluation can adopt the form of "separation from the teaching and teaching" to form a diversified evaluation of gymnastic dance teaching teachers, companion evaluation, and students' self-evaluation.

In addition, strengthens the protection of teachers' information teaching ability and teaching conditions. The arrival of the digital age provides technical support for the reform of sports education in colleges and universities, which is conducive to improving students' sports learning efficiency. Relevant administrative departments of universities should attach importance to the timely maintenance and update of online teaching software and hardware, provide a good teaching environment and learning environment for teachers and students, and provide sufficient environmental conditions for teaching. At the same time, physical education teachers should master new media technology and methods to improve the level and quality of physical education.

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