THE DEVELOPMENT OF DANCE TRAINING COURSE BASED ON PROBLEM-BASED LEARNING MODEL TO IMPROVE DANCE ABILITY OF UNDERGRADUATE STUDENTS

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Thesis:	The Development of Dance Training Course Based on Problem-based Learning Model to Improve Dance Ability of Undergraduate Students
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Thesis: **The Development of Dance Training Course Based on Problem-Based Learning Model to Improve Dance Ability of Undergraduate Students**

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ABSTRACT

The objectives of this research were 1) to develop dance training course based on problem-based learning model to improve dance ability of undergraduate students and 2) to compare students' dance ability before and after the training course based on problem-based learning model. The sample group included 30 third-year students from preschool education major of Lijiang Teacher College, Lijiang City, China, in the first semester of the academic year 2023, those who obtained through cluster random sampling. The research instruments included 1) dance training course activity plans based on the problem-based learning model and 2) dance ability assessment form. Data were statistically analyzed by average, standard deviation, and t-test of dependant samples.

The results were found that:

1) Developing dance training course based on problem-based learning model for undergraduate students, the course include: module 1 basic knowledge of culture and dance, module 2 the movement of dance, module 3 create the dance segments, 12 hours in total. And measure students' dance ability before and after course, it was found that students' dance ability has been improved.

2) Using dance training course based on problem-based learning model, the dance ability of students after class is significantly higher than before class with statistical significance at the level .01.

Keywords: Training course, Problem-Based Learning Model, Dance Ability

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Chapter 1
Introduction

Rationale

Dance originates from the labor practice of human survival and development and the needs of other kinds of life practice. Combined with poetry and music, it is one of the earliest art forms in human history. In the primitive society, people live in groups, dance is the simulation of teaching labor skills, practicing fighting skills, physical exercise, seeking spouses, witchcraft, religious sacrifice and other activities. It is an important means to exchange emotions, thoughts and vent their inner emotions.

For the undergraduate students majoring in preschool education, dance courses should be professional, systematic and academic, and should also have the characteristics of preschool education majors. Zhang Yanke (2016) discuss that the problems of dance courses of preschool education major are: have a short teaching time, little teaching content, and use the traditional teaching mode. Xu Huan (2020) said problem-based learning model is mainly realized through four stages: perception, understanding, consolidation and application, so that students can master the autonomy of learning. Teachers create classroom situations for students to discuss and cooperate with each other, and comprehensively improve students' comprehensive ability in the process of solving problems. The whole process is reflected in the teaching, the teacher must first clarify the specific problem to be solved, let students understand the knowledge points that must be mastered to solve the problem, as well as the final goal. Secondly, according to the difficulty of the problem, the implementation of specific teaching strategies. In this process, students should first grasp the key links of the problem for detailed discussion; Then we must find the links between the problems and find a breakthrough to solve the problem. Finally, use the various resources mastered to find out the best way to solve the problem, to achieve the overall improvement of students' ability. The teaching methods mostly adopt the methods of explanation, demonstration imitation and correction.

Yang Xiaole (2021) states that preschool students learning dance not only need to train their external form, but also need to internalize physical learning and experience perception in the brain, and have dance teaching ability, thinking ability and creation ability. In kindergarten, facing children, they can apply what they have learned and created to children, educate people with aesthetics, and demonstrate beauty to children in the form of physical display. So that they can watch, imitate and learn, truly appreciate the beauty of physical practice brought by dance. In addition, through the experience of participating in the comprehensive graduation examination of preschool education students in recent years, the researcher found that the students' dance ability still needs to be improved. In order to solve this problem, this dance training course is developed: use problem-based learning model to develop dance training courses to improve undergraduate students' dance ability.

As a way of artistic practice, based on the platform of preschool education major, the training courses developed should not only have professional practical ability, but also have preschool education major's professional characteristics. Therefore, in the process of teaching, the knowledge acceptance of the teaching group is also very important. To solve this problem, this study uses the problem-based learning model to develop dance training courses to improve students' dance ability, which is an indispensable skill for students to become a qualified preschool teacher after graduation. The significance of the development of the development of this training is to use problem-based learning model, assign students with highly targeted problems through each class, strengthen students' understanding and mastery of dance knowledge, and effectively improve students' dance ability, which is an indispensable skill for students to become a qualified preschool teacher after graduation. As a teaching model, problem-based learning model was proposed by Howard Barrows, an American neurology professor in the 1950s. Stentoft (2019) explored that problem-based learning model programs can increase student engagement and motivation and help students develop competencies related to medical research. Wang Tao (2019) put forward that problem-based learning model is a new teaching model, it will be the student in a chaos, the structure of the bad situation, make students become the master of the situation, starting from the problems in real life to provide teaching

materials, stimulate students to think, to explore, to learn the knowledge required to solve this problem, the final step by step to solve the problem. As an effort to improve classroom learning activities, The model of problem-based learning model by Zulyusri (2019) takes genetic material as the research object and is divided into two cycles. Each cycle consists of four phases: planning, implementation, observation and reflection. The tool used in this study was the students' observation sheets, as a form of reflection for each cycle, and the results showed that the learning activities of the students who applied the problem-based learning model model were divided into better categories. Zheng Jianbin (2021) concluded that: Howard Barrows integrated clinical medical problems into classroom teaching. Although students recite a lot of theoretical knowledge due to the complex clinical medical symptoms, there are still many problems in practical operation. The disconnection between theory and practice is very common. Let students have a better grasp of medical methods. In conclusion: compared problem-based learning model with traditional teaching models, problem-based learning model focuses on students and makes students become the main body of learning, which changes the teacher's dominant position in class and makes learning based on questions. Different from the traditional teaching mode, it emphasizes student-centered and problem-centered design and development. Learners solve problems in specific situations together through group discussion, acquire methods and abilities to solve problems, and acquire the ability to independently explore and acquire knowledge. In daily teaching activities, problem-based learning model has a disadvantage, that is, the content of the course is less than the traditional course, and students focus on solving problems, so students cannot acquire a lot of basic knowledge from classroom learning.

When used to develop a training course for students, the courses based on problem-based learning model has several important benefits: 1) Develops critical thinking skills: problem-based learning model encourages students to think critically and independently to solve problems. This can lead to the development of important skills such as analytical thinking, decision-making, and problem-solving. 2) Increases student engagement: problem-based learning model is a student-centered approach, which means that students are actively involved in the learning process. This can

increase their engagement and motivation, leading to better learning outcomes. 3) Enhances knowledge retention: problem-based learning model helps students connect new information to their existing knowledge and experiences, which can enhance their ability to retain and apply that knowledge in real-world situations. 4) Fosters collaboration: problem-based learning model often involves group work, which can foster collaboration and teamwork skills. This can help students learn how to work effectively with others, a valuable skill in many industries. And 5) Prepares students for the workplace: problem-based learning model can help students develop the skills and knowledge they need to succeed in the workplace. This is because problem-based learning model is often based on real-world problems and scenarios, which can help students learn how to apply their knowledge to real-world situations.

In the development of dance training course based on problem-based learning model to improve the dance ability of undergraduate students, all of these students already have in the previous semesters learning the basis of professional courses, have the basic professional abilities, so this dance training course will help students to solve problems in the specific situation, improving students' dance ability, improve students' learning interest, enhance students' learning initiative, cultivate students' comprehensive ability, leading to better learning outcomes.

Objectives

1. To develop dance training course based on problem-based learning model to improve dance ability of undergraduate students.

2. To compare students' dance ability before and after the training course based on problem-based learning model.

Research Hypothesis

After the training course based on problem-based learning model, the students' dance ability has been improved obviously.

Scope of the Research

Population and the Sample Group

Population

The population of this research was 300 third-year students majoring in preschool education of Lijiang Teacher College, 10 classes in total and 30 students in each class.

The Sample Group

The sample group of this research was 30 third-year students with mix ability (strong, medium and weak) from Class 5, majoring in preschool education in the first semester of the academic year 2023 of Lijiang Teacher College, through the random cluster sampling method.

The Variable

Independent variable: Dance training course based on problem-based learning model.

Dependent variable: Dance ability.

Contents

This paper proposes the development of dance training course based on problem-based learning model to improve dance ability of undergraduate students, this training course is divided into the following 3 parts, 12 hours in total.

The course consists of 3 modules:

Module1: Basic knowledge of culture and dance	4 hours
Module2: The movement of dance	4 hours
Module3: Create the dance segments	4 hours

Time

The study period from February to October 2023 divided into the following phases:

1. Develop proposal research in February 2023.

2. Modified and completed 1) dance training course activity plans based on problem-based learning model and 2) dance ability assessment form from March to July 2023.

3. Experimental research in July 2023.

4. The formal research was conducted from August-September 2023.

5. Summarized the research, completed the research thesis, and published the paper from September-October 2023.

Advantages

1. For students. Problem-based learning model can give full play to students' autonomy, makes students become the main body of learning, helps students to consolidate and review the advanced courses and improve their comprehensive skills, develops students' ability to solve problems.

2. For teachers. Improve teacher's teaching ability, broaden the selection range of teachers' teaching methods, good for teacher's innovation and construction of the courses, and also provide theoretical reference for the research on the improvement of students' dance ability based on the problem-based learning model.

Definition of Terms

Training course is a training course activity plans based on the problem-based learning model are designed to help individuals gain knowledge, skill and competencies in a specific are. this is structured and delivered in a way that allows participants to learn through a combination of lectures, demonstrations, hands-on activities and assessments.

Problem-based learning model is a student-centered pedagogy that focuses on the active learning and problem-solving skills of learners. In problem-based learning model, learners are presented with complex, real-world problems or scenarios and are expected to work collaboratively to develop solutions. Problem-based learning model is designed to promote critical thinking, problem-solving, and collaboration skills. It involves learners working in small groups to analyze and solve problems, with the instructor acting as a facilitator rather than a traditional lecturer. Learners are encouraged to take responsibility for their own learning, as they work to identify and research the information they need to develop a solution to the problem. The benefits of problem-based learning model include improved critical thinking and problem-

solving skills, increased motivation and engagement in the learning process, and the development of lifelong learning skills. By engaging learners in active, problem-based learning model helps learners develop the skills and knowledge they need to succeed in the real world. Problem-based learning model include 5 steps as follow: problem design, set up situation, group work (analyze the problem and solve the problem), presentation and discussion, evaluation and summary.

Training course based on problem-based learning model is a structured program that focuses on active learning and problem-solving through the use of real-world problems or scenarios. In this model, learners are presented with a complex problem or challenge and are encouraged to work collaboratively to develop a solution. The training course is designed to promote critical thinking, problem-solving, and collaboration skills among the learners. The instructor acts as a facilitator, guiding the learners through the problem-solving process and providing support and feedback as needed. The training course based on problem-based learning model typically includes the following steps:

Step 1 problem design: according to the training course activity plan and teaching objectives of dance training courses, the teaching content is determined, the problems are designed according to the dance content of the class, and the students are required to find relevant literature and videos about the problems in the teaching process, and carefully search and practice.

Step 2 set up situation: teachers decide the teaching content before class, design situations, and guide students to think and explore the problems actively, help students to find problems during learning, and learn to analyze these problems, find out the causes of these problems and solve these problems in time, and finally improve students' ability of active inquiry and learning.

Step 3 group Work (analyze the problem and solve the problem): group member search and collect information, study, discuss together to solve the problems.

Step 4 presentation and communication: groups share their problems result with other groups, improve their thinking skill and also improve their confidence to show themselves.

Step 5 evaluation and summary: evaluation include group evaluate each

other and evaluate themselves, then teacher summarize and comment and guide to help students get progress. Training courses based on the problem-based learning model can be adapted to a variety of subjects and can be delivered in a variety of formats, including classroom-based learning, online learning, or a combination of both. They are particularly effective for developing critical thinking, problem-solving, and collaboration skills, and can be used in a wide range of professional development settings.

Dance ability refers to the skill about artistic express and technical proficiency, and talent of an individual in performing various dance movements. It includes the understanding of dance terms, the performance of dance postures, the body coordination, the feeling of the music and rhythm, create ability, which all need to be executed precisely. In the group dance, it is necessary to carry out group work, and have the ability to conduct self-evaluation and peer evaluation after the dance to improve the dance ability in the later stage.

Undergraduate student is a student who is pursuing a bachelor's degree at a college or university. Typically, undergraduate students are those who have completed their secondary education (high school) and are beginning their university education. In this research, undergraduate student is the students majoring in preschool education of Lijiang Teacher College.

Research Framework

The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students. The research concept framework is as follows:

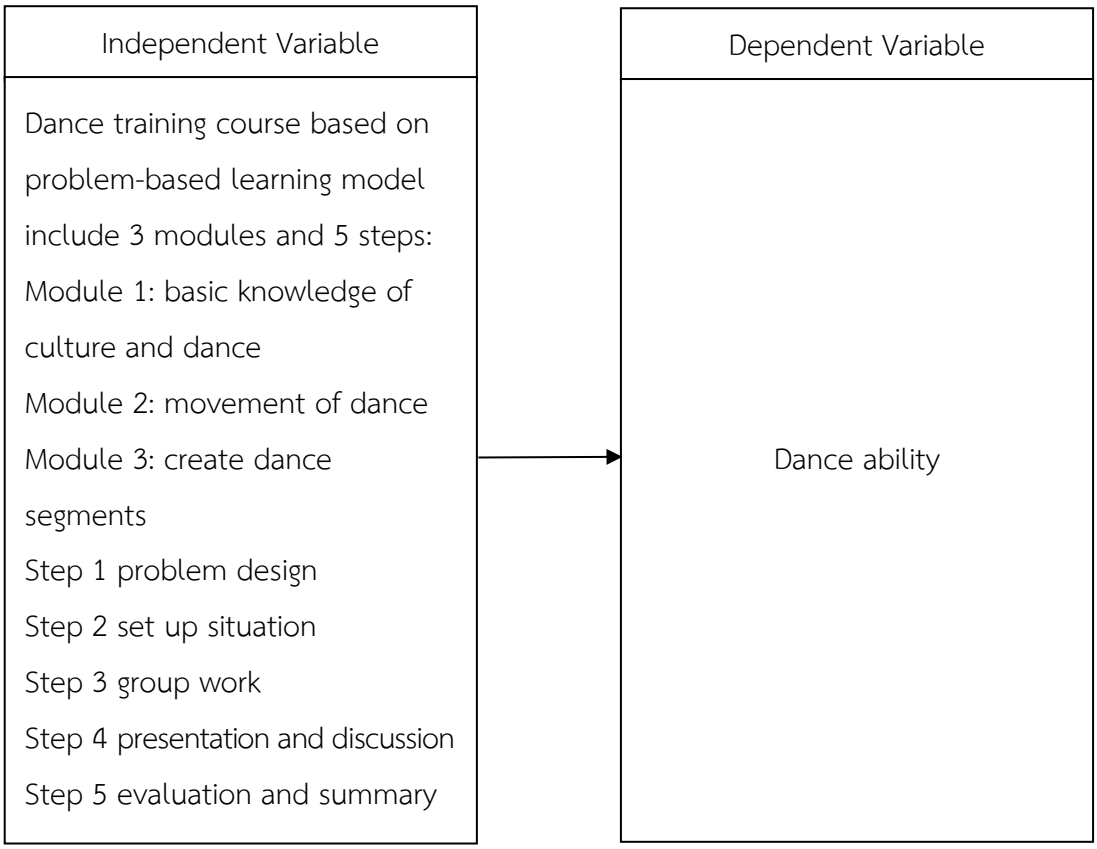

Figure 1.1 Research Framework

Chapter 2
Literature Review

This title research the development of dance training course based on problem-based learning model to improve dance ability of undergraduate students, the following literature was studied:

1. The development training course
2. Problem-based learning model
3. Dance ability
4. Related research (Domestic research/Foreign research)

The details are as follows.

The development of training course

1. Definition

Vemon Humphtye (1990) proposed the “collective training theory of employees” in “Organization-wide Training.” He believes that collective training is considered from the perspective of the entire organization, and it is a process of changing the behavior of complex organizations through training. The theory he proposed includes five subsystems of analysis, design, development, execution and control, each of which is interrelated.

Jaithip Rattanapong (1996, pp.13-14). defines training course development as creating a new curriculum or making existing curriculum better using a process of planning and developing learning experiences that will bring about change in the learner. Selection of activities and learning experiences and materials How to implement the curriculum to achieve its goals and assess the success of the newly created curriculum.

Ganat Thatthong (2007, p.28). concludes that training course development means tailoring, supplementing, adding, or other operations in order to achieve suitability, in line with the needs of changing social conditions, and to meet the needs of learners.

From the above scholarly definition. In conclusion, from the above scholarly definition, training course development means recreating or improving existing courses. To conform to a changing society. The learning experience is planned and developed to guide the teaching and learning.

2. Training course development process

Wichai WongYai (1990, p.19). proposed three unified training course development processes, starting with a curriculum drafting system. The curriculum implementation system and the course assessment system, each of which has the following details and procedures: 1) The curriculum drafting system consists of defining the curriculum by looking at the consistency with the subject content. Social, economic, and political conditions. After that, begin to shape the curriculum, namely, the formulation of principles, structures. Course composition objectives, content, learning experience and evaluation. After that, the quality of the course was checked through experts or seminars, and pilot trials were conducted, as well as research findings and revisions of the curriculum before implementation. 2) The curriculum usage system consists of obtaining course approval from an agency or ministry, implementing a curriculum usage plan starting with the promotion of the course. Personnel preparation, budgeting and course materials support services provide facility preparation, management systems and workshops, and follow-up on curriculum implementation. After that, enter the curriculum administration system by implementing a plan of instructional activities, lesson plans. Teacher manual study guide instructor's preparation learner readiness and academic evaluation. 3) Evaluation system, which consists of planning the evaluation of the use of the curriculum, both sub-assessments. Consolidated assessment, curriculum system assessment management system and student achievement. After that, collect data, analyze data, and report data accordingly.

Mandisha Winston (1996, p.17). discusses the process or stage of training course development: step 1 curriculum creation include: 1) Basic information studies, 2) determination of aims, 3) defining subject matter, 4) defining learning experiences, 5) determination of measurement and evaluation methods. Step 2 curriculum implementation. Step 3 course evaluation. Step 4 course improvements.

Thamrong Buasri (1999, p.152) discusses the training course development process as follows: step 1 fundamental data analysis, step 2 determining course destinations, step 3 defining the format and structure of the course, step 4 defining the purpose of the subject, step 5 content selection, step 6 defining learning objectives, step 7 defining the learning experience, step 8: formulating a teaching and learning strategy, step 9 learning evaluation, step 10 Preparation of course materials and instructional materials.

Wen Xiaoyi (2021) says that training course development mainly includes the following steps: 1) determine the training objectives, 2) determine the training name, 3) determine the training method, 4) make training courseware and teaching materials, 5) specify the plan, 6) determine the training teacher, 7) determine the training assessment method.

Liu Weiqing (2022) discusses that training course development mainly includes: 1) analysis of training needs, 2) design of training course objectives, 3) selection of development tools, 4) course development, 5) course implementation, and 6) evaluation and feedback.

Zhou Ji (2023) states that training course development mainly includes 1) determining the training theme, 2) analyzing the training objectives, 3) combining the training problems, 4) evaluation and reflection.

Sum up, from the above-mentioned course development process, suffice it to conclude that in order to develop a curriculum, the basics should be studied. Prepare a draft course. Implementing the curriculum, evaluating the curriculum, and improving it to ensure completeness and efficiency.

3. Training course implementation

Fullan, M (1997) argued that training course implementation refers to the actual use of any innovation, or all that innovation includes in its actual operation. This definition points out the difference between training course planning and training course implementation. In fact, training course implementation includes not only the process of putting the new training course plan into practice, but also the process of institutionalization. Regardless of the method one adopts, implementation essentially consists of three phases: initiation, implementation, and maintenance or institutionalization.

Li Chenzhi (2001) says that curriculum implementation is an important subject in the field of curriculum theory and teaching theory. From the perspective of curriculum theory, curriculum implementation can be regarded as an important link in the course of curriculum development, and in the sense of teaching theory, curriculum implementation at least includes teaching design and teaching process. The fundamental purpose of curriculum design is to change students' learning situation and promote the best development of students. Curriculum implementation is a process in which teachers adjust curriculum objectives, contents and methods according to the actual situation.

Raviwan Suvanich (2005, p.126) discusses the implementation of the curriculum as among all the training course development steps or processes. The implementation of the curriculum or the use of the curriculum is an important step, which defines this step as the implementation of the developed curriculum documents into practice to achieve educational aims. Course implementation process: 1) Preparatory stage for using the course. 2) Course stage. 3) In service stage and follow-up of curriculum implementation.

Therefore, those whose duties are related to the implementation of the curriculum must study and understand the implementation of the curriculum in accordance with their roles and responsibilities in order to achieve the intended purpose.

4. Training course evaluation

Donald L.Kirkpatrick (1959) from the University of Wisconsin, first publish in the American Journal of Training Managers, said that Kirkpatrick's evaluation model is the most famous one in training evaluation theory. The Kirchhoff model, also known as the Kirchhoff four-level training evaluation model, the model includes learning assessment, response assessment, behavior assessment and effectiveness assessment.

Bang-om Sereerat (2010, p.153) states that curriculum evaluation refers to comparative consideration and judgment on how elements of a curriculum system relate to each other. How consistent is there between standards, aspirations, and practicality? How effective is that course? What are the implications for using that information to improve the curriculum.

Weng Jinyun (2020) says that curriculum assessment not only measures the impact of curriculum on students, teachers, and community partners, but also promotes the transformation of students' curriculum-based learning into practical competence and trust and communication among relevant groups. Curriculum evaluation includes four aspects: evaluation purpose, evaluation subject, evaluation principle and evaluation method.

Li Fuqiang (2022) says that curriculum evaluation is a process of making value judgment on curriculum objectives, curriculum development, curriculum implementation process and curriculum teaching results according to the curriculum construction standards, and testing the degree of curriculum realization of educational objectives, and further proposing curriculum improvement strategies. It includes not only the evaluation of curriculum elements such as curriculum objectives, curriculum content, curriculum structure, but also the evaluation of the interactive behavior process of teaching and learning such as curriculum development and practice, curriculum design and implementation, and the evaluation of the implementation effect of curriculum elements and interactive behavior factors of teaching and learning.

Xu Lan (2022) states that curriculum evaluation is a systematic evaluation of curriculum objectives and their realization paths, methods and measures, including the index system and its measurement section (or data collection means), which plays a role of supervision and assurance for the improvement of curriculum quality.

In summary, curriculum evaluation reflects the main problems existing in curriculum quality, and becomes the improvement target of the next stage of training program revision and curriculum construction.

Problem-based learning model

1. Meaning of problem-based learning model

Bridges (1992) argue that problem-based learning model is a student-centered approach to solving real problems by framing lectures with problems as the beginning of learning. After entering the 21st century, with the maturity of problem-based learning model, it gradually penetrated into more fields and stages. Hmelosilver, C.E. (2004) proposed in the article that problem-based learning model means that teachers first determine learning objectives, then set problems, and finally students solve problems in group cooperation, so as to improve students' understanding and learning skills. Fogarty (R) (2005) believes that problem-based learning model is a teaching strategy in which teachers assist and guide students in teaching and play the role of a mentor. By showing problems in real situations, students are encouraged to master new knowledge and improve their ability to find problems and solve problems. Treadwell, S.M. (2018) proved through experiments that problem-based learning model played a positive role in physical education, especially in improving students' physical literacy.

Maggi Savin-Baden (2000) states that problem-based learning model is becoming increasingly popular in higher education because it is seen to take account of pedagogical and societal trends (such as flexibility, adaptability, problem-solving and critique) in ways which many traditional methods of learning do not. There is little known about what actually occurs inside problem-based curricula in terms of staff and student 'lived experience'. This book discloses ways in which learners and teachers manage complex and diverse learning in the context of their lives in a fragile and often incoherent world. These are the untold stories. The central argument of the book is that the potential and influence of problem-based learning is yet to be realized personally, pedagogically and professionally in the context of higher education. It explores both the theory and the practice of problem-based learning and considers the implications of implementing problem-based learning organizationally. "Problem-based learning model is contested and murky ground in higher education. In her study, Maggi Savin-Baden clears the thickets, offering a bold ambitious framework and, in the process, gives us a compelling argument for placing

problem-based learning model in the centre of higher education as an educational project. It is a story not to be missed." - Professor Ronald Barnett "This is a challenging and very worthwhile read for anyone concerned with the future of higher education, and issues of teaching and learning. The metaphor of 'untold stories' is powerfully explored at the level of staff and student experience of problem-based learning."

Liu Xiaoyan (2002) believes that problem-based learning model is to put learning in difficult and meaningful problem situations, so that students can solve problems in real situations together in group cooperation, comprehend hidden knowledge through problems, and finally master the ability to solve problems independently. Based on this, this study will problem-based learning model is defined as a kind of through the guide students in the form of cooperative learning in the curriculum analysis to solve problems in the situation, the teacher as a problem, one teaching guide, organizer and partners to participate in teaching, and finally to cooperate to solve the problem by knowledge integration and form a teaching pattern of problem solving skills.

Liu Yafang (2016) says that problem-based learning model is a self-oriented learning method that puts the learning process in complex and meaningful case situations and takes students as the center. In the form of group discussion and self-study after class, students can solve problems independently. Also known as the problem-based learning model, the outstanding feature is to cultivate students' awareness and ability of autonomous learning and lifelong learning. This method was proposed by Jerome Bruner, an American pedagogy and psychologist, in the 1950s, Barrows, an American professor of neurology, first applied it in McMaster University in Canada in 1969, and then it was widely used in European and American countries soon after. Nearly 2,000 medical schools around the world, including Harvard Medical School and Manchester Medical School, have adopted the problem-based learning model. Problem-based learning model follows the educational theory of constructivism. Through the active construction of objective knowledge by students, students can improve their theoretical level and comprehensive ability. The Faculty of Medicine of the University of Hong Kong has been teaching problem-based

learning model to freshmen since 1997 and has mature experience in this teaching method. In 1986, Shanghai Second Medical University and Xi' an Medical University introduced problem-based learning model into China, mainly applied in the field of medical education. Since the 1990s, the increase in the number of colleges and universities gradually introducing problem-based learning model in our country, in addition to medical school, is also found in experiment teaching of electronic systems, circuit principle course, information retrieval course, food, travel management, modern education technology, cloud computing technology, modern education technology, soft drinks and high school chemistry, the application of geography course. According to Liu Yafang (2016) article, problem-based learning model process generally consists of three courses. In the first course, the teacher distributed the literature and the students found the problems. In the second course, solve problems with groups. In the third course, students first share the knowledge gained by self-study, further group discussions and solve the unresolved knowledge of the previous course.

Wang Tao (2019) says that problem-based learning model for short, originated from the medical education of McMaster University in Canada in the 1960s. It is based on questions, with students as the main body, in the form of group discussion and with the participation of tutors. The process of studying a particular medical topic or the diagnosis and treatment of a specific case. This is a new teaching model, it will be the student in a chaos, the structure of the bad situation, make students become the master of the situation, starting from the problems in real life to provide teaching document, stimulate students to think, to explore, to learn the knowledge required to solve this problem, the final step by step to solve the problem. Problem-based learning model is considered to be one of the most successful innovation in medical education, it advocates to students as the center, through the cooperation between the individual students or group of students, take advantage of learning resources to solve problems in real life, and to acquire new knowledge, to maximize the reflect students' autonomous learning, to cultivate the students found the problems, ask questions, to cultivate the ability to solve the problem.

Xu Huan (2019) states that problem-based learning model is a new teaching model proposed by Professor Barrows in 1969. It mainly aims at solving various problems raised by students in the learning process. Problem-based learning model is mainly to stimulate students' desire to explore by showing real problem scenarios and solve problems through students' independent exploration and group cooperation, so as to continuously improve their ability and quality of solving problems. Problem-based learning model is mainly based on a set of interrelated and unique problems as the premise, and then reasonable application of various resources, for a specific problem to be solved and continuous efforts of the teaching model. Chinese scholars believe that problem-based learning model is a new type of inquiry-based learning mode that takes discipline principles and concepts as the center, and then aims to promote the products to customers by reasonably carrying out exploration activities through various resources and solving related problems within a certain period of time. Problem-based learning model needs to start from the reality of students, and then carry out open inquiry activities with a long period centering on real situations or complex problems in a group way, and finally achieve the purpose of improving ability and constructing knowledge. The steps are as follows: 1) problem design, 2) group work, 3) problem solving exploration, 4) communication and interaction, and 5) evaluation.

Zheng Jianbin (2021) says that general education defines problem-based leaning model as a problem-oriented teaching model. It is a student-centered education model. Under the guidance of teachers, students, as the main body, can solve problems through group cooperation and give play to students' white master ability. The teaching model of consulting, collecting data, solving problems, cultivating students' awareness of active learning and innovation ability. Howard Burrows (1980), the founder of problem-based learning model, regarded problem-based leaning model as a model of learning in the process, believing that learners should learn in the process of understanding and solving problems, and the learning process should be controlled by themselves. The way to acquire knowledge is to solve problems and integrate knowledge by themselves. The steps are as follows: 1) preparation, 2) problem design, 3) set up situation, 4) group work, and 5) evaluation.

Zhang Jiaojiao (2022) says that problem-based leaning model is a kind of teaching model based on problem orientation, which makes students in the main position and guides the independent learning of new knowledge by means of group inquiry. Problem-based leaning model relies on scenario setting to attract students' learning motivation. The questions set must be attractive, and students actively participate in the analysis based on the questions set by teachers to fully reflect the status of self-learning subjects. At the same time, through the analysis and solution of problems, students can exercise their ability and expand their knowledge, which is of great significance for cultivating students' ability of independent learning, ability of analysis and problem solving, and ability of cooperation. The steps are as follows: 1) set up situation, 2) problem and group work, 3) set up situation, 4) exploring, 5) presentation, 6) evaluation.

Lv Qing (2022) states that problem-based leaning model is a teaching model that puts learning in a complex and exploratory problem situation, takes students as the main body of the class and learns the biological knowledge behind the problem by making students solve problems, so as to cultivate learners' multiple abilities in the process of solving problems. With the full understanding and in-depth study of problem-based leaning model, the educational value of problem-based leaning model is known by more and more biological educators, but the application research of this mode in other disciplines in middle school is more than biology and furthermore the research of this mode in biological experiment teaching is more less. Therefore, it is of great research significance and practical value to use problem-based leaning model to carry out biological experiment teaching in middle schools. The teaching steps are as follows: 1) preparation, 2) implementation, 3) evaluation.

By analyzing other researchers above, researcher summarize the research steps of problem-based learning model steps as follow:

Table 2.1 Synthesis step of problem-based learning model

Author	Xu Huan 2019	Zheng Jianbin 2021	Zhang Jiaojiao 2022	Lv Qing 2022	My Research detail
Step1	Problem design	Preparation	Set up situation	Preparation	Problem design
Step2	Group work	Problem design	Problem, Group work	Implementation	Set up situation
Step3	Problem solving exploration	Set up situation	Exploring	Evaluation	Group work
Step4	Communication and interaction	Group work	Presentation		Presentation and discussion
Step5	Evaluation	Evaluation	Evaluation		Evaluation and summary

To compare with others synthesis step of problem-based learning model, researcher summarized the steps as follow:

1) Problem design.

According to the curriculum activity plan and teaching objectives of dance training courses, the teaching content is determined, the problems are designed according to the dance content of the class, and the students are required to find relevant literature and videos about the problems in the teaching process, and carefully search and practice.

2) Set up situation.

Teachers decide the teaching content before class, design situations, and guide students to think and explore the problems actively, help students to find problems during learning, and learn to analyze these problems, find out the causes of these problems and solve these problems in time, and finally improve students' ability of active inquiry and learning.

3) Group work (analyze the problem and solve the problem).

Group member search and collect information, study, discuss together to solve the problems.

4) Presentation and discussion.

Groups share their problems result with other groups, improve their thinking skill and also improve their confidence to show themselves.

5) Evaluation and summary.

Evaluation include group evaluate each other and evaluate themselves, then teacher summarize and comment and guide to help students get progress.

2. Importance of problem-based learning model

Wang Tao (2019) At present, many literature have confirmed the positive effects of problem-based learning model on the learning of medicine and its related disciplines. Some researchers used Meta analysis technology to investigate 11 comparative studies on problem-based learning model and traditional teaching method at home and abroad, and found that compared with traditional teaching method, problem-based learning model in nursing students' ability of critical thinking, conflict resolution, clinical problem solving ability and communication ability is superior to the traditional teaching method, in clinical decision-making ability, cooperation ability and bring up the autonomous learning ability, although there was no significant difference, but also shows a trend is superior to the traditional teaching method. With growing influence, the problem-based learning model gradually extend from medical education to professional or of other subjects, such as some researchers have be used for environmental engineering, social work and other professional teaching, however, these studies both in quantity and quality remains to be enhanced and improved, need to try in more professional or subject teaching and promote the innovation of teaching methods. Based on above opinion, this study takes two classes of students majoring in special education of Chongqing Normal University in 2012 as the research objects, takes the teaching of psychology and educational research methods as an example, and reveals the influence of problem-based learning model on the learning efficiency and academic performance of college students in normal universities through the research method of education experiment. It provides an empirical basis for problem-based learning model to improve the learning efficiency of normal college students, and further

expands the application fields of problem-based learning model in more majors and disciplines.

Zheng Jianbin (2021) states that importance of problem-based learning include two parts: 1) Theoretical meaning: The research on problem-based learning model is still weak in middle school dance education in China. In view of the current development direction of dance teaching and the existing problems in dance teaching, this study combined problem-based learning model to conduct technical localization research, and applied problem-based learning model to dance teaching to break the barriers of traditional teaching, enrich the theory of dance classroom teaching, and make up for the deficiencies of problem-based learning model in the field of dance teaching. It not only expands the application research of problem-based learning model in middle school dance teaching, but also increases the choice of teaching methods of dance class. 2) Practical meaning: Dance education is an important part of middle school students' artistic accomplishment. Music and dance is also one of the elective courses in middle school's music curriculum. At the same time, some schools in middle school also set up dance club courses. It not only provides some front line dance teachers with problem-based learning model practice experience, but also enriches the teaching form and provides some specific teaching cases.

Lv Qing (2022) states that problem-based learning model is to create problem scenarios, let students learn independently, group cooperation to complete problem exploration, which is conducive to promoting students from passive learning to active learning, and cultivate students' awareness of active learning. Team members analyze problems individually, cooperate to complete knowledge acquisition, and process and analyze knowledge, which helps improve students' ability to analyze and solve problems, and their ability to process information. After the design of the experimental scheme, the feasibility of the experimental scheme can be exchanged among the group members, which is conducive to the improvement of students' communication and expression ability.

Yin Xi (2023) says that the theoretical significance of the research is that PBL teaching mode is adopted in Tibetan dance teaching in colleges and universities, and

the theoretical construction of problem-based learning model in Tibetan dance teaching is enriched through action research, and the research ideas of Chinese ethnic folk dance teaching are broadened. The practical significance of the research is to integrate problem-based learning model into Tibetan dance teaching in colleges and universities, guide students to explore independently, stimulate learning motivation, and help students improve their learning ability of independent thinking and dialectical analysis.

Dance ability

1. Meaning of dance ability

Zhang Jingtian (2019) says that children dance, also known as children dance. Infant dance is significantly different from adult dance, which reflects the life of preschool children and expresses their thoughts, feelings and attitudes. The creation of children's dance needs to carry out a variety of children's dance teaching in accordance with children's physiological and age characteristics, which can increase children's physical strength, promote the development of children's bones, muscles, respiration, nervous system and circulation system, and speed up metabolism. Children's dances are usually relaxed, lively and pleasant. In this environment, children feel music images through body movements and express their thoughts and feelings through expressions and movements, which can help children develop lively, cheerful, enthusiastic and generous character. In a word, dance is of great significance to the healthy growth of children.

Zheng Xuan (2020) states that dance is an art form, a way of education, and a way of conveying ideas. For students majoring in preschool education, dance ability is an important part of preschool education. Good dance ability can help students to correctly understand the world, feel the beauty of life, appreciate the beauty of dance, stimulate the artistic quality of students, and improve the comprehensive quality of students is of great help.

Huang Rong (2020) says that if only from the theoretical point of view, then "infant dance" and adult dance with a mutually opposite attitude exists. It mainly reflects the life, thoughts, emotions and attitudes of preschool children, so there is a

very significant difference between it and adult dance. If you want to create children's dance, it is necessary to accurately understand the physiological and age characteristics of preschool children, in order to ensure that we can find the right direction of dance creation. Preschool teachers need to carry out a variety of children's dance teaching activities in the daily preschool education work, to create a harmonious teaching situation for its camp, and then strengthen the development of its bones, muscles, breathing and circulation system, strengthen its metabolism. Most of children's dances have a relaxed and lively atmosphere, so children can feel the rhythm and rhythm in the process of learning dance, and then they can learn to express their emotions through facial expressions or body movements, so as to develop a lively and cheerful personality. Therefore, preschool teachers need to pay attention to the role of early childhood dance creation in early childhood education, and students majoring in preschool education should also improve their attention to this kind of problems, and they should constantly improve their skills in early childhood dance creation during school study, so as to improve their professional quality. From the perspective of employment, preschool dance creation ability is a professional skill that preschool education graduates must have to participate in the employment competition. Only with the corresponding early childhood dance creation ability can ensure the steady development of preschool education work led by themselves, and then realize their initial career ideal. During this period, when creating dance, teachers must learn to respect children, understand their thoughts and take this as the starting point for innovative integration of all aspects of the material. In order to achieve the above goals, it is necessary to help students of preschool education to cultivate the awareness of respecting and understanding children in their education and teaching, and then they can have the opportunity to realize the comprehensive development of students of this major.

The conclusion is dance ability is a kind of art, is the creator wants to express the idea through the human body this carrier in the form of movement. Children dance ability refers to the dance, on the basis of respecting children's psychological needs and physiological development characteristic, combining the actual life of young children to the plait kindergarten children rhythm, song performances,

ballroom dancing, music game, impromptu dance, etc., improve the comprehensive cultivation of children's music and dance, cultivate children's feelings and performance beauty temperament and interest and ability.

2. Importance of dance ability

Zhang Jingtian (2019) says that preschool dance is of great significance for children for students majoring in preschool education, they usually work as early childhood teachers after graduation, which requires students to gradually have the ability to create dance in school life, so as to ensure that they can play a role in the post after graduation. And to create a dance in line with children's "taste", we must respect children, understand children, so we must feel children with our heart, as far as possible to create a dance suitable for children to express. Therefore, it is of great practical significance to cultivate preschool students' ability of creating and composing dance.

Chen Xixin (2020) states that as teachers, they should pay attention to the guidance and teaching of students' behavior. By offering dance courses, they can better guide students to carry out actions, ensure the coordination of students, finally inspire the artistic nature of students and promote the healthy development of students' body and mind. Dance classes, therefore, is a student at this age are more likely to accept the teaching course, as a higher vocational colleges, should be aimed at preschool education professional teaching, to cultivate the student's ability of children's dance, the assessment of preschool teachers have a lot of, including preschool dance ability training is one of which is particularly important, for the preschool education specialized student, students should focus on theoretical knowledge and apply the knowledge to practice. Only in this way can they improve their dance ability. In this process, students majoring in preschool education should not only have the most basic knowledge of dance creation courses, but also have innovative thinking. Under the background of new curriculum reform, higher requirements are put forward for preschool education teachers. Therefore, higher vocational colleges should keep up with the pace of the development of The Times, improve students' dance creation ability, and make students have innovative thinking.

Hao Sirui (2021) states that dance course is a very important part of preschool education in colleges and universities. Attention should be paid to the cultivation of students' dance application quality, so that students can actively learn dance knowledge, not only pay attention to the shape of the appearance, but also internalize experience and perception, so that students can form creative ability, thinking ability and dance education ability.

Dance ability training significance: 1) Develop body shape to achieve healthy physical and mental growth. In scientific training, students develop their body shape, shape and change. The learning of dance skills can significantly improve students' physical fitness and physical quality. In the training of graceful movement, the students' unhealthy physical state is corrected and good posture is formed. Students majoring in preschool education are faced with very young children when they are employed. The influence of teachers' various behaviors on children is very obvious. Dance training can improve students' shortcomings and shortcomings, and provide support for students' future learning and growth. 2) Learning dance knowledge improves students' comprehensive ability. Dance is a comprehensive and prominent form of artistic expression, which is closely related to other arts. The comprehensive characteristics of art itself make students learn dance knowledge and improve their comprehensive quality. Training movements, rehearsing the use of music in dance, students are exposed to a wide variety of music and learn the differences between various musical rhythms, genres and styles. The application of dance ability can improve students' music perception ability and comprehensive understanding ability. In addition, drama, martial arts and dance are closely related. At different historical stages, it refines drama elements and martial arts elements, develops art forms, fills artistic content for dance education, and has profound cultural connotation of dance art. Students in dance learning, muscle memory, continuous practice, transfer dance culture, in-depth understanding of dance knowledge. Appreciate the folk dance, enter the folk dance, understand the beauty of clothing shape, the beauty of body rhyme, and combine the sense of dancing and learning dance together to enhance the students' artistic understanding and sensibility. 3) Improve students' imagination and creativity. students majoring in preschool education will face a variety of young children in the

future. In order to be able to become a friend of children and interact well with children, preschool education students need to have sufficient imagination, be able to imagine children's behavior, and use personalized education to organize children's activities. In this way, preschool education students can survive in the fierce competition and eliminate others. Dance is a highly expressive and appealing course, and dance education reflects all kinds of stories and contents in life artistry. When performing and creating dance, students need to make full use of their accumulated life experience and existing knowledge and experience to show their unique intelligence and creative ability. When learning, students can use the method of free teamwork to perform, rehearse and learn knowledge, and jointly design. In the process of cooperation, students not only realize the collective wisdom, but also can use cooperation and master the communication methods with different people, which is of great help to the subsequent early childhood education work.

3. Measurement and evaluation of dance course

Measuring and evaluating are essential for a dance course to ensure that it effectively meets its objectives and provides value to students and institutions. Curriculum measurement and evaluation should be an integrated process that takes into account all aspects, including learning outcomes, regular assessment and continuous improvement of student performance, course content, teaching methods, technology and student feedback are key to ensuring that dance courses remain relevant and effective, preparing students for the evolving field of information technology.

In Zheng Jianbin (2021) article, data of teaching practice research include students' self-evaluation form, group-evaluation form and teacher observation, evaluation form and student satisfaction survey. The students' self-evaluation form helps researchers to obtain feedback from the evaluation form and help students to self-reflect. The group evaluation form helps researchers to understand the group cooperation from the evaluation form, find problems, and prepare for the group guidance in the future. Teacher observation evaluation form helps researchers understand the application of problem-based learning model in dance course and improve the teaching effect.

Zhang Jiaojiao (2022) discuss that teaching evaluation includes: student foundation questionnaire, expert evaluation form, student cooperation ability questionnaire, student interest evaluation scale, student comprehensive ability cultivation scale, student satisfaction survey.

4. Summary

The cultivation of dance ability is very important for dance teaching in preschool education. During the teaching period, researcher can feel the effectiveness and operability. In order to help students adapt to early childhood education and deliver comprehensive preschool teachers to the society, teachers must pay attention to details and improve the future employment ability of students majoring in preschool education through a combination of practice and theory.

Related Research

Through CNKI, Web of Science, Scopus, Google search engine, Baidu search engine, Academic and other ways, this paper reviewed relevant literature and materials, screened and sorted them out, and summarized problem-based learning model, infant dance creation and other aspects.

1. Domestic Research

Xu Huan (2019) says that the success or failure of preschool education has a direct impact on children's grasp of basic knowledge and basic ability, so it is of great practical significance to enhance the professional quality of preschool education students. This paper studies and analyzes the application of problem-based learning model in the practical course of preschool education major. This paper first expounds the basic meaning and characteristics of problem-based learning model, then analyzes the advantages and requirements of problem-based learning model, and finally points out how to apply problem-based learning model in practice teaching.

Zheng Jianbin (2021) states that in the dance course, apply the problem-based learning model, the scientific design dance teaching process, pay attention to the training of dance movements and related problems related to the ability, advocating students can take the initiative to learn, and can learn between students, aim cultivate talents who meet the comprehensive development of society. The

problem-based learning model is a problem-based, student-oriented teaching model for exploratory learning under the guidance of teachers. The teacher sets the learning content in the question. Students conduct study in contextual learning, and finally cooperate to solve problems and form a problem-solving skills through knowledge integration. As can be seen from the data in the table, 87.5% of the groups in the whole class were active and cooperative in solving problems, but 12.5% of the groups failed to do so. 95.0% of the groups can express correct views, 92.5% of the groups can put forward reliable and feasible key opinions, 95.0% of the groups can clearly demonstrate the results of the group, and 95.0% of the groups can effectively complete their own tasks. 87.5% of the groups showed that the group members had a high participation, and 12.5% of the groups did not participate in the results presentation. 85.0% of the group dance movement integrity, fluency, emotional degree is high, but there are still 10.0% of the group did not achieve. To sum up, it can be seen that the enthusiasm of each group in the class is very high, each group can basically complete its own task, most of the team members can participate in the cooperation, and the dance performance can also show the quality of the movement and the beauty of the dance. Through the researchers in the theory and teaching practice research, researchers that problem-based learning model application in dance teaching is feasible and more effective, through the analysis of three teaching practice case survey found that the students in the classroom change is gradually better, classroom activity gradually rising, students' participation gradually increased, enthusiasm also strengthened, the students as the classroom willing to share and cooperation with her classmates, the interest in learning dance also gradually increased. In class, each group is highly motivated, each group can basically complete its own tasks, most of the group members can participate in the cooperation, and the results displayed can also show the beauty of the quality of the action dance. The research results show that: 1) problem-based learning model can significantly improve the interest in learning dance, 2) problem-based learning model effectively changed students' learning motivation, improve students' initiative in dance learning, 3) problem-based learning model to cultivate students' comprehensive

ability, 4) problem-based learning model improves the professional quality of dance teachers, 5) enrich the practical teaching cases of problem-based learning model.

Zhou Mingjuan (2021) states that as the important part of preschool education, the dance curriculum is of great significance for kids' physical and mental health cultivation. The problem-based learning model proposes to set up the real problem situation to make kids learn to solve problems in the process of cooperation, learn the related knowledge and skills, and improve their independent learning abilities. Taking the problem-based learning model integrated into kids' dance curriculum can create a relaxing and pleasant teaching environment and make kids grasp dance knowledge and skills deeply in a favorable teaching situation which have great effect on kids' ability training and improvement. When constructing the preschool dance education curriculum based on problem-based learning model, teachers should master the ways of kids' dance evaluation and appreciation and know the evaluation standards. They should also properly arrange kids' dance show, carry out rhythm teaching curriculum, and organize kids to rehearse and grasp dance programs. At the same time, dance teachers must know the ways of kids' dance appreciation and evaluation, assess the kids' dance show as audience rationally, and then adjust the dance curriculum contents.

Zhang Jiaojiao (2022) states that problem based learning is problem-based. Combined with the actual situation of aerobics teaching in Zhengzhou Institute of technology, this paper makes an experimental study on the effect of problem based learning model in College Aerobics Teaching through the methods of literature, questionnaire and teaching experiment. The test results are as follows: 1) After the experiment, the scores of push ups, sit ups and split movement in the experimental group and the control group were significantly improved ($P<0.05$). Aerobic exercise guidance helps to improve students' physical indexes such as physical strength, endurance and flexibility. problem based learning model has a greater impact on the traditional teaching method. 2) Problem based learning model guidance to the experimental group had a great impact on improving students' learning enthusiasm ($P<0.05$). Problem based learning model can greatly improve students' ability to analyze and solve problems, teamwork and self-study. 3) Problem based learning model has a great influence on

the theoretical score and skill score of students' aerobic learning (P<0.05). problem based learning model can greatly improve aerobic performance. 4) Problem based learning model affected classroom satisfaction (P<0.05). This difference is statistically significant and helps to improve classroom satisfaction. 5) Compared with traditional teaching methods, problem based learning model is more effective in improving students' interest and reducing negative emotions. Problem based learning model makes students' learning attitude much higher than traditional teaching model.

Lv Qing (2022) states that problem-based learning model is a teaching mode that puts learning in a complex and exploratory problem situation, takes students as the main body of the class and learns the biological knowledge behind the problem by making students solve problems, so as to cultivate learners multiple abilities in the process of solving problems. With the full understanding and in-depth study of problem-based learning model, the educational value of problem-based learning model is known by more and more biological educators,but the application research of this mode in other disciplines in middle school is more than biology and furthermore the research of this mode in biological experiment teaching is more less. Therefore, it is of great research significance and practical value to use problem-based learning model to carry out biological experiment teaching in middle schools. Through the educational experiment, three important experiments related to Molecules and Cells, a chapter in the textbook of compulsory one published by Phoenix Education Publishing Ltd, were taken as examples to design teaching cases that meet the requirements of problem-based learning model and carry out teaching practice. The gains and problems of students in problem-based learning model, and teachers' evaluation of the limitations and advantages of problem-based learning model in experimental teaching were explored by the interviewing method. A total of 26 effective evaluation scales were obtained in the experimental class, and 23 effective evaluation scales were obtained in the control class. The average score of scientific inquiry in the experimental class was 12.35, the average score of control class was 10.00, which was significantly higher than that in the control class (P<0.001). The average score of scientific thinking in the experimental class was 3.04, and that in the control class was 2.30. The experimental class was significantly higher than the

control class (P-0.002). The average score of the experimental class was 3.00 and the average score of the control class was 2.74, and there was no significant difference between classes (P=0.31). The average social responsibility score of the experimental class was 2.23, and that of the control class was 2.04, with no significant difference between classes (P=0.38). The students' evaluation scale was compiled to investigate the changes of students' core literacy in biology under problem-based learning model. The result of practical research showed that: 1) The application of problem-based learning model in high school biology experiment teaching can promote the development of students' ability and quality and the improvement of teachers' experimental teaching ability. 2) problem-based learning model can promote the cultivation of students' core literacy in biology, especially scientific inquiry and scientific thinking. 3) The three exploratory experimental teaching plans designed based on problem-based learning model. Separation and restoration of plant cytoplasm wall, exploration of environmental factors affecting enzymatic reaction rate, and extraction and separation of photosynthetic pigments in chloroplast, are feasible and have achieved good teaching results. They can be accepted by students and have certain reference value for educators.

2. Foreign Research

Nicole Reinders BS, Paula Fletcher PhD & Pam Bryden PhD (2015) states these dancers with additional needs are included and welcomed into the studio family. Jaclyn stresses the importance of being family-centered, as parents are welcome in the studio space any time they feel necessary. Parents know their children best and can work with the teachers to tailor the program to each dancer's needs. Jaclyn believes that all children are able to dance and should have the opportunity to dance. Her program broadens these opportunities in that her dancers learn in the studio instruction space and perform on stage at the year-end recital, just like their typically developing peers. Jaclyn's goal is to accept the dancers for who they are and appreciate the unique elements that they contribute during the class.

Mila Parrish (2017) believes that problem-based learning model is to guide dance according to real world problems. In problem-based learning model, students

can cooperate to solve complex problems. Instead of obtaining technical dance steps, they develop critical thinking ability, master problem solving ability and communication flexibility. Problem-based learning model can be effectively adapted to high school and college instruction, where questions are used to unlock student voices and drive the collaborative choreography process, and can be leveraged by using questions as a motivator for the creative process.

Da Silva, Alexsandro Almeida (2018) presents an evaluation of a design research project that combines artistic practice and academic theory. In order to show how problem-based learning model can bridge the gap between these fields, the project examines specific approaches that combine dance performance and interactive techniques. How to strengthen the transformation of the empathic relationship between the audience, the performer and the environment.

E W Laksono1 Suyanta1 and I Rizky1 (2018) states in the study aims to see the effect of implementation of problem-base learning model and the 5M model on critical thinking and science process skills is completed using the comprehensive test results of the grade X of Madrasah Aliyah students for electrolyte and non electrolyte solutions topics. The population in this study was students of grade X of Madrasah AliyahNegeri in Yogyakarta and selected 61 students divided into two classes as a sample. The sample was determined by purposive sampling technique. Data were obtained through testing using a comprehensive assessment instruments and their activities observations. The data analysis used the anova test at the significance level of 5%. The results showed that implementation of the problem-based learning model has better quality compared to learning with 5M model, both for critical thinking skills and science process skills.

Songnakorn Karnna (2019) said in the results of the study showed that 1) the overall suitability of a training course was at a high level, 2) the overall suitability of a training material was at a high level, and 3) the result of the training course evaluation revealed that 78.26 % of the participants achieved the defined criteria. Their knowledge acquiring was at a high level. They had the applied skill at a high level. The satisfaction on the training course was at a high level. Moreover, the effectiveness of the training materials E1/E2 = 81.19/78.84 was higher than the aimed score of 80/80. The overall

progress of the training approach of the post-training was higher than the pre-training scores at the .05 level of statistical significance.

Zulyusri*, N R Dana (2019) state in the study is a classroom action research which aims to apply the problem-based learning model as an effort to improve the learning activities of class XII MIA 3 SMA Negeri 1 Padang students. This research is conducted in two cycles on genetic substance material. Each cycle consists of four stages, namely planning, implementing, observing, and reflecting. The tool used in this study is the student's observation sheet, which serves as a form of reflection for each cycle. Six aspects that observed were working on the student's worksheets, working together and discussing in groups, observing presentation activities, giving responses and questions, paying attention to teacher explanations, answering questions or giving opinions. The results showed that the learning activities of students through the application of the problem-based learning model were classified as good category. This category based on an increase student activities from the first cycle with an average achievement score of 60% (good category) to cycle II with an average achievement score of 76% (very good category).

Citra Dewi Anggraeni, Trianti Nugraheni (2019) believes that learning dance not only provides knowledge and skills in gestures and musical rhythm, but also helps students build character and personality. In the implementation of project-based learning model of learning, it is believed that this method will directly affect the development of students' character, and the enthusiasm of students in the value and inheritance of dance art will be more positive. Dance learning provided to students through the application of problem-based learning model can well develop students' social character as well as students' teamwork and individual abilities and skills.

Chapter 3

Research Methodology

"The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students" is an experimental study aimed to improve dance ability of undergraduate students by using problem-based learning model. The methodology of this research was research and development: 1) To develop dance training course based on problem-based learning model to improve dance ability of undergraduate students. 2) To compare students' dance ability before and after the implementation of training course based on problem-based learning model. The research methodology is as follows:

1. The population / Sample group
2. Research Instruments
3. Data Collection
4. Data Analysis

The population / Sample Group

The Population

The population of this research was 300 third-year students majoring in preschool education of Lijiang teacher college, 10 classes in total and 30 students in each class.

Sample Group

The sample group of this research was 30 third-year students with mix ability (strong, medium and weak) from Class 5, majoring in preschool education in the first semester of the academic year 2023 of Lijiang Teacher College, through the random cluster sampling method.

Research Instruments

The research instruments used in this study include 1) training course activity plans based on problem-based learning model, and 2) dance ability assessment form, as detailed below:

1. Dance training course activity plans based on the problem-based learning model. The researcher designed 3 module plans using the problem-based learning model, totaling 12 hours.

1.1 Use as a guide for developing through learning objectives, content, guideline for organizing measurement and assessment of training course activity.

1.2 Based on the index analysis the core learning content, set learning objective, learning content, and learning time.

1.3 Study of concept, theories related to the theory from document, textbook, and related to the research to create a new training course activity plan.

1.4 The researcher formulated 3 training course activity plans by using problem-based learning model and selected 3 modules, 12 hours in total. The detail as follow each training course activity plan in detail according to problem-based learning model: 1) content, 2) time, 3) objectives, 4) concept, 5) training course activity, 6) instructional media, 7) measurement and evaluation. And training course activity as follows:

1) Problem design: According to the training course activity plan and teaching objectives of dance training courses, the teaching content is determined, the problems are designed according to the dance content of the class, and the students are required to find relevant literature and videos about the problems in the teaching process, and carefully search and practice.

2) Set up situation: Teachers decide the teaching content before class, design situations, and guide students to think and explore the problems actively, help students to find problems during learning, and learn to analyze these problems, find out the causes of these problems and solve these problems in time, and finally improve students' ability of active inquiry and learning.

3) Group work (analyze the problem and solve the problem) : Group member search and collect information, study, discuss together to solve the problems.

4) Presentation and discussion: Groups share their problems result with other groups, improve their thinking skill and also improve their confidence to show themselves.

5) Evaluation and summary: Evaluation include group evaluate each other and evaluate themselves, then teacher summarize and comment and guide to help students get progress.

1.5 Submit the completed training course activity plan to the advisor to check the consistency applicability of the plan, make modifications according to advisor's suggestions.

1.6 Submit the revised training course activity plans to 3 experts for review to verify the accuracy and applicability of the content, the consistency of objectives, training course activity, instructional media and measurement and evaluation. Find the IOC (Index of Item Objective Congruence). The content consistency standards of training course activity plan are as follows:

Rating is +1. There is an opinion that "training course activity plan is aligned with what is being measured".

Rating is 0. There is an opinion that "uncertain whether the training course activity plan match what was measured".

Rating is -1. There is an opinion that "training course activity plan does not align with what is being measured".

Dance training course activity plans based on the problem-based learning model with the results IOC (Index of Item Objective Congruence) as follows:

Table 3.1 Evaluation results of dance training course

Dance training course activity plans based on the problem-based learning model	**hours**	**IOC**	**Evaluation results**
Module1: Basic knowledge of culture and dance	4	1.00	accept
Module2: The movement of dance	4	1.00	accept
Module3: Create the dance segments	4	1.00	accept

2. Dance activity assessment form.

This is the assessment form created by the researcher, which is divided into 10 evaluation contents.

2.1 Analyze the learning content dance ability consistent with the training course activity plan.

2.2 Learning theories and methods of dance ability and learn assessment from the literature and relevant research.

2.3 According to the definition and dimensions of dance ability, referring to previous researchers' dance ability evaluation instruments, the dance ability evaluation standard is designed. The scoring criteria and corresponding score have been established for all 10 evaluation points: 1 point, 2 points, 3 points, and the full score is 30 points in total. Different score represent varying degrees of dance ability. 27-30 points represent is strong, 23-26 points represent relatively strong, 18-22 points represent general, 14-17 points represent relatively weak, 10-13 points represent weak.

Table 3.2 Dance ability assessment form

Evaluation Items	Score and criterion		
	3	2	1
1. Dance terms	Always able to explain or demonstrate dance terms	Mostly able to explain or demonstrate dance terms	Sometimes able to explain or demonstrate dance terms
2. Postures /step/ direction	knows all new postures and steps, accurately performs all dance steps with ease	knows most new postures and steps, accurately performs most dance steps, struggles at times	knows some new postures and steps, accurately performs some dance steps, struggles often
3. Body coordination	Hands and feet movement ordinate naturally, flexible, bend, shake	Complete hands and feet movement and ordinate normally, flexible, bend	Complete hands and feet movement but not ordinate naturally, flexible
4. Musicality and rhythm	Shows excellent sense of rhythm and phrasing	Shows good sense of rhythm and phrasing	Occasionally dances off beat, sometimes unaware of music

Table 3.2 Dance ability assessment form (Continued)

Evaluation Items	Score and criterion		
	3	2	1
5. Artistic express	Exhibits captivating and expressive performances, conveying emotions, themes, or stories effectively through dance.	Shows normal artistic expression, effectively expressing emotions or conveying themes with some minor inconsistencies.	Struggles to convey emotions or lacks artistic expression, resulting in a less engaging performance.
6. Technical proficiency	Show excellent dance techniques, executing movements with precise form, alignment, and control	Show good technical skills, displaying proficiency in fundamental dance techniques with occasional minor errors.	Show normal technical skills, displaying proficiency in fundamental dance techniques with some minor errors.
7. Dance create ability	Develops a dance sequence that is creative, complete and displays lots of effort and practice.	Develops a dance sequence that is creative, complete and displays lots of effort and practice.	Develops a dance sequence that is not very creative, incomplete and displays little effort and practice.

Table 3.2 Dance ability assessment form (Continued)

Evaluation Items	Score and criterion		
	3	2	1
8. Group work	Works very well with their group all of the time. 1.contributes lots of ideas 2.contributes suggestions for modification 3.listens to others displays patience 4.motivates other group members	Works very well with their group most of the time. 1.contributes some ideas 2.listens to others most of the time / when agrees with what was being said 3.displays impatience at one time 4.displays frustration with others at times	Works very well with their group some of the time. 1.contributes few ideas 2.listens to others sometimes 3.displays impatience more than once 4.requires teacher assistance to refocus and remain in group
9. Self evaluation	Can proactively evaluate and reflect on learning, evaluate the effectiveness of self-learning, complete pre assessment test questions, and receive full marks.	Can self-evaluate and summarize learning, evaluate the effectiveness of self-learning, and complete pre assessment test questions.	Lack of awareness of self-evaluation and summarization, failure to complete pre assessment test questions.

Table 3.2 Dance ability assessment form (Continued)

Evaluation Items	Score and criterion		
	3	2	1
10. Peer evaluation	Can actively participate in group evaluations, be able to evaluate others, and humbly accept others' evaluations.	Participate in group evaluations and be able to evaluate others.	Not actively participating in group evaluations and unwilling to evaluate others.

Evaluate quality standards

Score Range	Quality Level
27-30	Strong
23-26	Relatively strong
18-22	General
14-17	Relatively weak
10-13	Weak

2.4 Submit the dance ability assessment form to the tutor to check the accuracy and modify.

2.5 Submit the dance ability assessment form to 3 experts for measurement and inspection. Experts check the content validity and calculate the IOC (Index of Item Objective Congruence). The dance ability assessment form for determining measurement consistency are as follows:

Rating is +1. There is an opinion that "confirm that the dance ability assessment form meet the specified measurement requirement".

Rating is 0. There is an opinion that "uncertain whether the evaluation criteria meet the specified measurement requirement".

Rating is -1. There is an opinion that "determine the evaluation criteria do not meet the specified measurement requirement".

The consistency indicator of each evaluation content is greater than or equal to 0.5 and it's considered suitable for research. The IOC value for each question in this evaluation criteria is 1.00.

2.6 Revise and improve the scoring criteria, then try out with students who were not the sample to ensure the quality of assessment.

2.7 Check the reliability of measurement standard using Cronbach's α Coeffient is 0.90, which can be used for research.

Data Collection

The data were collected as follows:

1. Coordinate with 3 relevant professional scholars and experts, issue official documents of professional scholars and experts of Bansomdejchaopraya Rajabhat University, and provide information on research content and research instruments: training course activity plans and dance ability assessment form, for IOC (Index of Item Objective Congruence). Collect IOC inspection data from 3 professional academic experts.

2. This study is an experimental study which is according to the research tools developed by the researchers, scores were carried out before and after the experiment, and evaluation data were collected in July 2023. The following is the experimental design:

Table 3.3 Experimental design

Group	Pretest	Experimental	Posttest
R	O_1	X	O_2

The meaning of the symbols used in the experimental design.

R means random sampling

X means experimental

O_1 means pretest

O_2 means posttest

Data Analysis

The data analyzed as follows:

1. Analyzed and verified the effectiveness of 1) training course activity plans and 2) dance ability assessment form according to the problem-based learning model, taking the consistency index as the consideration standard (IOC: Index of Item Objective Congruence).

2. Based on the problem-based learning model, evaluate the students' dance ability before and after the implementation of dance training course, and use the data obtained from the experiment to analyze the statistical data through the mean value, standard deviation and t-test for dependent samples.

Chapter 4
Results of Analysis

The research “The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students” aims to improve the dance ability of undergraduate students by using the problem-based learning model, to study the learning behavior of third-year majoring in preschool education in Lijiang Teacher College, and compare the dance ability of undergraduate students before and after the training course based on problem-based learning model. The data analysis results can be presented as follows:

1. Symbol and Abbreviations
2. Results of Data Analysis

The details are as follows.

Symbol and Abbreviations

Represent data analysis results based on symbols and semantics. The details are as follows:

X	means	summation
$\bar{X}$	means	average value
SD.	means	standard deviation
n	means	number of students
D	means	scores of difference between pre and post class
df	means	degree of freedom
t	means	statistical data for t-test value
**	means	statistical significance at level .01

Results of Data Analysis

The study utilized the problem-based learning model to improve students' dance ability from Lijiang teacher college. The researchers conducted research in the following order:

Part 1: The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students.

Part 2: Result of comparison with students' dance ability before and after the dance training course based on problem-based learning model.

Part 1: The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students.

First of all, the researcher analyze out the background, purpose and significance of problem-based learning model through literature research, understood the research status of problem-based learning model. Finally determined the development of dance training course based on problem-based learning model to improve dance ability of undergraduate students.

Secondly, The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students, this training course is divided into the following 3 parts, 12 hours in total. The course consists of 3 modules: Module 1: Basic knowledge of culture and dance 4 hours , Module 2: The movement of dance 4 hours, and Module 3: Create the dance segments 4 hours. The detail as follow Each training course activity plan in detail according to problem-based learning model: 1) content, 2) time, 3) objective, 4) concept, 5) training course activity, 6) instructional media, 7) measurement and evaluation. And training course activity includes the following steps:

Step 1 problem design: according to the training course activity plan and teaching objectives of dance training courses, the teaching content is determined, the problems are designed according to the dance content of the class, and the students are required to find relevant literature and videos about the problems in the teaching process, and carefully search and practice.

Step 2 set up situation: teachers decide the teaching content before class, design situations, and guide students to think and explore the problems actively, help students to find problems during learning, and learn to analyze these problems, find out the causes of these problems and solve these problems in time, and finally improve students' ability of active inquiry and learning.

Step 3 group Work (analyze the problem and solve the problem): group member search and collect information, study, discuss together to solve the problems.

Step 4 presentation and communication: groups share their problems result with other groups, improve their thinking skill and also improve their confidence to show themselves.

Step 5 evaluation and summary: evaluation include group evaluate each other and evaluate themselves, then teacher summarize and comment and guide to help students get progress. Training courses based on the problem-based learning model can be adapted to a variety of subjects and can be delivered in a variety of formats, including classroom-based learning, online learning, or a combination of both. They are particularly effective for developing critical thinking, problem-solving, and collaboration skills, and can be used in a wide range of professional development settings.

Each training course activity plan had a consistency index greater than or equal to 0.5 and was considered suitable for use in research. The analysis result of the IOC (Index of Item Objective Congruence) is that each training course activity plan is 1.00.

Third, From the details of the training course development above, the researcher conducted a research experiment 30 third-year students with mix ability (strong, medium and weak) from Class 5, majoring in preschool education in the first semester of the academic year 2023 of Lijiang Teacher College, through the random cluster sampling method.

In addition, the researcher evaluated the behavior of students who participated in the development of dance training course based on problem-based learning model classified according to the content of the course consists of 3 modules: basic knowledge of culture and dance, the movement of dance and create the dance segments. The students have behavior as the following details:

1. The course consists of Module 1 : Basic knowledge of culture and dance (4 hours).

This lesson mainly uses problem-based learning to design several questions, so that can help students learn and master the basic knowledge of Tibetan culture

and Tibetan dance through independent exploration. The main content is basic knowledge of Tibetan culture and Tibetan dance.

Basic knowledge of Tibetan culture: The Tibetan is one of the 56 nationalities in China. In China, it is mainly distributed in Tibet Autonomous Region, Qinghai Province and western Sichuan Province, Diqing Yunnan, Gansu Gannan and other regions. In addition, there are Tibetan people in India, Bhutan, the United States, Canada, Europe, Australia and other regions. Lhasa is a sacred place in the hearts of the Tibetan people. At present, the world's population of Tibetan is about 7.5 million, about 7 million in China (2016), and the Tibetan population is conservatively estimated at more than 10 million. With wisdom and hard work, the Tibetan people have created a rich national culture on the Qinghai-Tibet Plateau, where natural conditions are difficult. They have left a rich cultural heritage in the fields of music, dance, literature and art, architecture, painting and medicine.

Basic knowledge of Tibetan dance: Tibetan dance is a part of their culture, mainly folk self-entertainment dance. Later, simple upper limb movements, in-situ rotation and formation transformation were added, which became the singing and dancing form. The characteristics of Tibetan dance are: rich content, wide range of themes, the Tibetan dance is diverse and original, many Tibetan dances are also used in religious festivals in the sacrificial activities.

Problem-based learning model includes 5 steps as follow:

Step 1 Problem design

The researcher divided the students into 5 groups, each group with 6 students. All the group collected knowledge online for their task. There is a general lack of awareness of acquiring learning resources online, with the exception of Group 1 and Group 2.

Step 2 Set up situation

1. After teacher showed videos and pictures related to Tibetan culture and Tibetan dance, most of the students had interest to investigate more.

2. Only 4 students did not focus on the teacher.

Step 3 Group work (analyze the problem and solve the problem)

1. During group work process, each group got different tasks, they chose

one student as leader to manage the group work.

2. 9 students were not active enough in group work, just listen to other students sometimes. other 21 students joined group discussion and would like to shared ideas.

3. Few students discussed the topic not related to the class. Teacher need to correct them.

Step 4 Presentation and discussion

1. Each group chose 1 student to present the result of their own group, 5 students all did very well.

2. Some of the students felt shy to present in front of others.

3. The students from Group 5 presented basic Tibetan dance with good body coordination and good musicality and rhythm, as a good example for the other students.

Step 5 Evaluation and summary

Most students are only accustomed to listening to the teacher's evaluation and summary, lacking the awareness of self-evaluation, and reflection, and are unwilling to evaluate others.

2. The course consists of Module 2 : The movement of dance (4 hours).

Dance movements are human movements refined, organized and beautified by art. It comes from the simulation, deformation and processing of various life or emotional actions of human beings and various movement forms of nature. Problem-based learning model includes 5 steps as follow:

Step 1 Problem design

The researcher divided the students into 5 groups, each group with 6 students. All the group collected knowledge online for their task. There is a general lack of awareness of acquiring learning resources online, with the exception of Group 1 and Group 2.

Step 2 Set up situation

1. After teacher showed videos and pictures related to Tibetan dance, most of the students had interest and would like to try the Tibetan movement, they were active to try the new postures and steps.

2. Only 4 students did not focus on the teacher.

Step 3 Group work (analyze the problem and solve the problem)

1. During group work process, each group got same task, the group leaders from different group were all responsible to manage their group member to practice the new postures and movement.

2. 5 students were not active enough in group practice, just listen to other students sometimes. other 25 students joined group practice and would like to help each other.

Step 4 Presentation and discussion

1. Each group presented the dance after their discussion and practice, 5 groups all did very well.

2. Most of the students were very confident to dance in front of others, a few of the students felt shy to present in front of others.

3. The students from Group 2 and Group 3 presented Tibetan dance with good body coordination and good musicality and rhythm, as a good example for the other students.

Step 5 Evaluation and summary

Some of the students can gave advice or corrected other when others did wrong, only a few students did self-evaluation, peer-evaluation and reflection very well.

3. The course consists of Module 3 : Create the dance segments (4 hours).

Dance creation ability is a form in which creators want to express their thoughts through the carrier of human body movement. Based on respecting students' psychological needs and physiological development characteristics, it combines rhythm, song performance, ballroom dancing, music games, improvisation dance, etc., to improve students' comprehensive cultivation of music and dance. Cultivate students' emotional and performing beauty temperament, interest and ability. Problem-based learning model includes 5 steps as follow:

Step 1 Problem design

The researcher divided the students into 5 groups, each group with 6 students. All the group collected knowledge online for their task. All the group were all actively participate.

Step 2 Set up situation

After teacher showed videos and pictures related to Tibetan dance, most of the students had interest and would like to use the Tibetan movement to create their own Tibetan dance segments

Step 3 Group work (analyze the problem and solve the problem)

1. During group work process, each group got same task, the group leaders from different group were all responsible to manage their group member to create their Tibetan dance segments by using basic Tibetan movement.

2. All of the students were active enough in group practice, gave advice, listened other patiently and motivate their group member.

Step 4 Presentation and discussion

1. Each group presented the dance after their discussion and practice, 5 groups all did very well.

2. Most of the students were very confident to dance in front of others, few of the students felt shy to present in front of others but already better than last time.

3. Most of the students presented Tibetan dance with correct postures and movement, good body coordination and good musicality and rhythm.

Step 5 Evaluation and summary

Most of the students were good at doing self-evaluation, peer-evaluation and reflection, it's good for them to improve their dance ability in the future.

Part 2: Result of comparison with students' dance ability before and after the implementation of dance training course based on problem-based learning model.

In this part, in order to test the teaching effect of problem-based learning model in dance training courses, the researcher tested and analyzed the dance ability, including dance theoretical knowledge, dance technique, group work awareness and evaluating ability on 30 students in third-year of preschool education major in Lijiang

Teacher College before and after the students participated in the 12 hours dance training course. The teaching effect of dance training course is analyzed as follows.

1. In this research, 30 third-year students majoring in preschool education of Lijiang Teacher College were selected as experimental subjects, including 28 female students (93.33%) and 2 male students (6.67%).

2. The researcher analyzed the students' dance ability before and after class based on problem-based learning model. The dance ability assessment form consist of 10 evaluation items. Each evaluation item is 1-3 points, 30 points in total. And the results are shown in Table 4.1 below.

Table 4.1 Scores of dance ability before and after the implementation of dance training course based on problem-based learning model

Number of students	Before class score (Pre-test)	After class score (Post-test)	Differences between scores (D)
1	20	27	7
2	17	26	9
3	14	23	9
4	14	24	10
5	17	26	9
6	15	24	9
7	13	22	9
8	20	27	7
9	16	24	8
10	11	23	12
11	11	21	10
12	14	24	10
13	14	23	9
14	11	22	11

Table 4.1 Scores of dance ability before and after the implementation of dance training course based on problem-based learning model (continued)

Number of students	Before class score (Pre-test)	After class score (Post-test)	Differences between scores (D)
15	18	29	11
16	14	26	12
17	11	22	11
18	14	25	11
19	12	21	9
20	18	27	9
21	12	21	9
22	16	26	10
23	11	18	7
24	17	28	11
25	14	24	10
26	13	24	11
27	11	18	7
28	17	28	11
29	13	23	10
30	16	26	10
Sum(X)	**434**	**722**	**288**
Average score ($\bar{X}$)	**14.47**	**24.07**	**9.60**
SD.	**2.70**	**2.75**	**1.43**

In Table 4.1, by implementing the problem-based learning model, the average scores of dance ability before class for 30 students in third-year of preschool education major in Lijiang Teacher College is 14.47 points, 24.07 points after class,

and the difference in before and after average scores is 9.6 points, indicating that the scores after class are higher than before class.

3. The researcher analyzed the data by using mean, standard deviation, and t-test dependent to analyze the scores of students' dance ability before and after class. The data analysis results are shown in Table 4.2.

Table 4.2 Comparison with students' dance ability before and after the implementation of dance training course based on problem-based learning model.

Dance ability	n	Full scores	$\bar{X}$	SD.	t	p
Before class	30	30	14.47	2.70	36.80**	.00
After class	30	30	24.07	2.75		

** Statistically significant at the level .01 ($p < .01$)

It can be seen from Table 4.2 that the average score of dance ability of 30 students in third-grade of preschool education major in Lijiang Teacher College after class is higher than the average score before class, with statistical significance at the level .01. By implementing the problem-based learning model on students, their dance ability after class is significantly higher than that before class. This is consistent with the research hypothesis.

Chapter 5
Conclusion Discussion and Recommendations

The research “The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students” aims to improve the dance ability of undergraduate students by using the problem-based learning model, to study the learning behavior of third-year majoring in preschool education in Lijiang Teacher College, and compare the dance ability of students undergraduate before and after the implementation of dance training course problem-based learning model. The details are as follows:

1. Research relevant information about problem-based learning model, including the meaning, teaching steps, theoretical basis, characteristics, teaching design, and practical application of problem-based learning model. This study is based on the development of dance training course.

2. Research relevant information on dance ability, including the meaning, characteristics, elements, influencing factors, improvement strategies, and evaluation methods of dance ability.

3. Create research instruments, including training course activity plan for teaching by using the problem-based learning model, which includes five specific steps, step 1 problem design, step 2 set up situation, step 3 group work (analyze the problem and solve the problem), step 4 presentation and discussion, step 5 evaluation and summary. Research and develop dance ability assessment form, dance ability mainly includes four dimensions: dance theoretical knowledge, dance technique, group work awareness, evaluating ability. Submit the research instruments to three experts to verify the effectiveness of the training course activity plan and dance ability assessment form, using the consistency index as the consideration criterion (IOC: Index of Item Objective Congruence). The suitability of the research has the most suitable.

4. After the development of the research tool was completed and passed expert inspection, training course activity plan using the problem-based learning model.

5. Based learning model were adopted. In the first semester of the 2023 academic year, third-year undergraduate students were tested and data was collected using the problem-based learning model.

6. Using experimental data, analyze the average ($\overline{X}$), standard deviation (SD.) and t-test of dependent samples.

Conclusion

1. Developing dance training course based on problem-based learning model for undergraduate students, the training course include: module 1 basic knowledge of culture and dance, module 2 the movement of dance, module 3 create the dance segments, 12 hours in total. And measure students' dance ability before and after training course, it was found that students' dance ability has been improved.

2. Using the problem-based learning model, the average score of third-year students' dance ability after class is higher than the average score before class, and the students' dance ability after class is significantly higher than before class, with statistical significance at the level .01.

Discussion

Research result on the development of dance ability for 30 third-year undergraduate students from Lijiang Teacher College in the first semester of the academic year 2023 by using problem-based learning model can be discuss as follows:

1. To develop dance training course based on problem-based learning model to improve dance ability of undergraduate students. Found that give full play to the principal position of students in the whole learning activity, improve students' learning behavior, including stimulating students' learning awareness, improve students' learning interest, optimizing learning activities, strengthening students' learning evaluation ability, improving interpersonal skills, and promoting the improvement of students' dance ability. It terms of measurement and evaluation is determined to be

an assessment based on actual conditions and to measure according to the learning objectives and in determining the work piece and workload are appropriate in accordance with the learning objective, which is consistent with the research (Arends, 2007). the results of this research data are learning activities of students on the material of genetic substance which PBL is a learning model that trains students to find their own concepts based on real problems of life with inquiry skills so that the model is the highest level model. The syntax of the problem based learning model which consists of five aspects, namely the presentation of problems, organizing students to research, assisting students in investigating, exhibiting work and evaluating problem solving. This syntax makes the teacher play a role in guiding students to conduct investigations, not giving concepts to students. In Xu Huan (2019) research same result as well, states that problem-based learning model is a new teaching mode, which puts students' learning in the real situation of problems, encourages students to think positively and adopt cooperative learning to solve problems and share results, so as to achieve learning goals. In preschool education, teachers should adopt problem-based learning model, especially in practical classes, to give students the initiative in learning, assign teaching tasks, improve students' ability to solve practical problems, and then obtain relevant knowledge. In the whole practice teaching, teachers only play the role of an organizer and consultant, so as to fully stimulate the enthusiasm and motivation of students. Through practical lessons, students can really understand the preschool children, master the psychology of preschool children, and finally improve the teaching ability of students.

In condition to this, the research of Liu Xu (2020) get the results: 1) The results show that it is feasible to apply problem-based learning model to the elective course of sports dance in colleges and universities. Problem-based learning model can optimize sports dance class, better accomplish teaching objectives, change students' previous learning styles, and improve students' learning ability, sports learning interest and movement skills. 2) The application of problem-based learning model in the optional course of sports dance in colleges and universities can improve students' interest in sports learning and arouse their learning enthusiasm. 3) Problem-based learning model is applied in the optional sports dance class in

colleges and universities. By changing the classroom teaching mode and centering on problems, group cooperative learning can play a positive role in improving students' ability to analyze, solve problems and cooperate and communicate. 4) The application of problem-based learning model in the optional course of sports dance in colleges and universities can improve the teaching efficiency, facilitate the mastery of technical movements, and play a positive role in the learning of students' movement standard, artistic expression, combination completion and combination arrangement ability. 5) Problem-based learning model is applied in the optional sports dance classes in colleges and universities. The rich teaching means and learning methods meet the different needs of students, and students have a high degree of classroom satisfaction with problem-based learning model.

In condition to the above discussion, Zheng Jianbin (2021), through the research in theory and teaching practice, the researchers believe that the application of problem-based learning model in dance teaching is feasible and effective. Through the analysis of three teaching practice courses, it is found that the change of learning in class is gradually improved, the activity of class is gradually increased, the participation of students is gradually increased, and the enthusiasm is also strengthened. With the deepening of the class, students are willing to share and cooperate with other students, and their interest in learning dance has gradually increased. In the class, the enthusiasm of each group is very high, each group can basically complete its own task, most of the team members can participate in the cooperation, and the dance results can also show the quality of the movement and the beauty of the dance. The results show that: 1) problem-based learning model can obviously improve the majority of students' interest in learning dance, 2) problem-based learning model effectively changes students' learning motivation and improves students' initiative in learning dance, 3) problem-based learning model cultivates students' comprehensive ability, 4) problem-based learning model improves the professional quality of dance teachers, 5) it enriches the practical teaching cases of problem-based learning model in dance course.

Beyond these, Zhou Mingjuan (2021) discuss that as an important part of preschool education, dance course plays an important role in the cultivation of

children's physical and mental health. Problem-based learning model advocates that by creating real problem situations, students can deal with problems in cooperation, learn relevant knowledge and skills, and enhance the ability of independent learning. Integrating problem-based learning model into children's dance courses can create a relaxed and pleasant teaching atmosphere for children, and enable children to firmly grasp dance knowledge and skills in a good teaching situation, which is of great significance to the exercise and improvement of children's abilities in all aspects. When building the preschool dance education curriculum based on problem-based learning model, we must first master the ways of evaluating and appreciating children's dance and understand the evaluation criteria. Secondly, reasonable arrangements should be made for children's singing and dancing performances. Thirdly, we should carry out rhythm teaching courses for children. Finally, children should be organized to master and rehearse children's dance programs. At the same time, dance teachers must understand the way of appreciation and evaluation of children's dance, make a reasonable evaluation of children's dance performance in the capacity, and adjust the dance course based on it.

This research result are also consistent with research Yin Xi (2023). This research uses a variety of research methods to demonstrate the feasibility of problem-based learning model in Tibetan dance teaching in colleges and universities. The research is divided into the following three aspects: First, to sort out and summarize relevant theoretical knowledge, clarify the advantages of problem-based learning model in Tibetan dance teaching in colleges and universities, and lay the foundation for the subsequent teaching practice design. Secondly, the process framework of problem-based learning model in Tibetan dance teaching in colleges and universities is constructed to complete the transition from theory to practice. The practice process includes four steps: teaching preparation, problem setting, teaching implementation and teaching thinking. Finally, the paper analyzes the specific practice and teaching effect of Tibetan dance teaching in colleges and universities under problem-based learning model. Through investigation and testing, it is verified that this mode has a positive impact on improving students' dance

arrangement ability, independent thinking ability, and enabling students to have a deeper understanding of the cultural connotation behind the dance.

2. To compare students' dance ability before and after the implementation of dance training course based on problem-based learning model, found the advantages of this training course is specific objective, improve students' learning interest, enhance students' learning initiative, cultivate students' cooperate ability. The research results show that after the implementation of dance training course based on problem-based learning model, the average score of students' dance ability is higher than before implementation, the research result is same as hypothesis and the difference is statistically significant at the level of .01, indicating that the problem-based learning model can promote the improvement of students' dance ability.

The conclusions of this study are consistent with research Lv Qing (2022), Lv Qing designed the questionnaire from five dimensions: students' interest in biological experiments, students' cognition of educational value, students' learning situation, experimental teaching methods, and evaluation of the current situation of experimental teaching, and found that students lacked the ability to analyze problems, cooperate, and express and communicate. The research result proves that: 1) the application of problem-based learning model to biology experiment teaching in senior high school has a certain promotion effect on the development of students' ability and quality; 2) problem-based learning model can promote the cultivation of students' core literacy in biology, especially the cultivation of scientific inquiry and scientific thinking.

In condition to this, Zhang Jiaojiao (2022) states that problem-based learning model has a great influence on the theoretical score and skill score of students' aerobic learning ($P < .05$). Problem-based learning model can greatly improve aerobic performance. Compared with traditional teaching methods, problem-based learning model is more effective in improving students' interest and reducing negative emotions. Problem-based learning model makes students' learning attitude much higher than traditional teaching method.

In the research of research on the Application effect of PBL teaching Mode in the optional course of sports dance in colleges and universities from Liu Xu (2020), the experimental group, the content of combination arrangement is rich, the number

of repetitions of movements is less, the novelty of movements and the cohesion of movements are better. The experimental group was given the opportunity to learn others' movements and correct their own movements through video watching, collection of relevant information and group cooperative learning. First, they watched the videos before and after class. Students could carefully taste and learn the details of each dance movement in the videos and cohesion techniques by repeatedly watching the videos. Secondly, through group learning, they can discuss and study the choreography of dance movements with each other, which plays the role of teamwork and can improve students' choreography ability in a short time. Therefore, the experimental group has better performance in choreography of dance movements than the control group.

Besides all above, Zulyusri (2019) states that based on Classroom Action Research (CAR) conducted in class XII MIA 3 Padang 1. State High School Padang City Academic Year 2017/2018 on the odd semester it can be concluded that the use of problem based learning model in the subject matter of genetic material in class XII MIA 3 SMA Negeri 1 Padang can increase student learning activities. Students as a whole get an acquisition score of 518 with a percentage based on 60% category with good categories. Whereas, in the second cycle students as a whole experienced an increase with the acquisition s core of 654 with a percentage based on 76% category with a very good success category which means that there was an increase in student activity from cycle I to cycle II by 16%.

This result is in accordance with the opinion of Sudjana (1996 6: 93) which states the advantages of problem-based learning models, namely students get practical experience, learning activities are more attractive so that teaching materials are not boring and are understood and understood by students, students can learn from various sources, social interaction between participant is more developed, students learn to do analysis and synthesis simultaneously and familiarize students to think logically and systematically in problem solving.

Recommendations

1. Recommendations for the application of research results

1.1 In the teaching process, due to the different difficulty of learning content in each class and the different foundation of students, the learning content needs to be adjusted in time according to the actual situation.

1.2 The questions proposed by the teacher should be designed according to the actual situation of the students to ensure that the students are clear about the content of the questions.

1.3 According to the actual teaching situation, teachers should design diversified evaluation methods.

2. Recommendations for the future research

2.1 The research of problem-based learning model in dance teaching is a long-term research activity, and the improvement of students' dance ability requires a lot of time and long-term monitoring. In this study, only three courses were offered for Tibetan dance, and certain positive effects were achieved in the short term. However, the obvious differences of students as a whole should be observed. Problem-based learning model should be applied to a long-term dance course.

2.2 Due to the limitations of my research time, energy and conditions, this study was only conducted in a short dance training course. In the future, it can be tried to be further applied to different courses or different disciplines. At the same time, more in-depth research can be conducted by increasing the study time and study sample size.

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Appendixes

Appendix A

List of Specialists and Letters of Specialists Invitation for IOC Verification

Appendix A

List of Specialists and Letters of Specialists Invitation for IOC Verification

Name of Experts	Position/Office
1. Saifon Songsiengchai	Assistant professor Doctor, Faculty of Humanities and Social Sciences, Bansomdejchaopraya Rajabhat University
2. Ronnakrit Phetkliang	Lecturer, Faculty of Humanities and Social Sciences, Bansomdejchaopraya Rajabhat University
3. Yang Haiping	Lecturer, Faculty of Education, Lijiang Teacher College

Ref.No. MHESI 0643.14/853

Bansomdejchaopraya
Rajabhat University
1061 Itsaraparb Hirunrujee
Thonburi Bangkok 10600

11 August 2023

RE: Invitation to validate research instrument

Dear Assistant Professor Dr.Saifon Songsiengchai

Miss Chen Hailing is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. She is undertaking research entitled "The Development of Dance Training Course Based on Problem-based Learning Method to Improve Dance Ability of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Miss Chen Hailing at 738487339@qq.com

Thank you for considering our request.

Sincerely,

Nainapas I.

(Dr.Nainapas Injoungjirakit)
Vice Dean, For Dean of the Graduate School

Bansomdejchaopraya Rajabhat University
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Bansomdejchaopraya
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Thonburi Bangkok 10600

11 August 2023

RE: Invitation to validate research instrument

Dear Mr.Ronnakrit Phetkliang

Miss Chen Hailing is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. She is undertaking research entitled "The Development of Dance Training Course Based on Problem-based Learning Method to Improve Dance Ability of Undergraduate Students"

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Thonburi Bangkok 10600

11 August 2023

RE: Invitation to validate research instrument

Dear Miss Yang Haiping

Miss Chen Hailing is a graduate student in Master of Education Program in Curriculum and Instruction of Bansomdejchaopraya Rajabhat University. She is undertaking research entitled "The Development of Dance Training Course Based on Problem-based Learning Method to Improve Dance Ability of Undergraduate Students"

The thesis adversity committee has considered that you are an expert in this topic. Your recommendations would be useful for further improvement of this research instrument.

We respectfully request your assistance in validating a research instrument that is attached to this message. We would be grateful for any help you can provide in this matter. We would like to express our sincere appreciation for your time and expertise. If you have any questions or concerns, please do not hesitate to contact Miss Chen Hailing at 738487339@qq.com

Thank you for considering our request.

Sincerely,

Nainapas I

(Dr.Nainapas Injoungjirakit)
Vice Dean, For Dean of the Graduate School

Appendix B

Research Instruments

The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students

Training course activity plan

Content	Time	Problem-based learning model	Teaching Approach	Measurement and Evaluation
Pre-test	1 hour			Selected the type of questionnaire tool for checking dance ability of students before leaning about the 3 topic modules

Content	Time	Problem-based learning model	Teaching Approach	Measurement and Evaluation
1. Basic knowledge of culture and dance	4 hours	1) Problem design. 2) Set up situation. 3) Group work (analyze the problem and solve the problem). 4) Presentation and discussion. 5) Evaluation and summary.	1) Problem design. According to the curriculum activity plan and teaching objectives of dance training courses, the teaching content is determined, the problems are designed according to the dance content of the class, and the students are required to find relevant literature and videos about the problems in the teaching process, and carefully search and practice.	Selected the type of formative tool for checking ability of students after leaning about “Basic culture and dance of Tibetan”

Content	Time	Problem-based learning model	Teaching Approach	Measurement and Evaluation
2. The movement of dance	4 hours	1) Problem design. 2) Set up situation. 3) Group work (analyze the problem and solve the problem). 4) Presentation and discussion. 5) Evaluation and summary.	2) Set up situation. Teachers decide the teaching content before class, design situations, and guide students to think and explore the problems actively, help students to find problems during learning, and learn to analyze these problems, find out the causes of these problems and solve these problems in time, and finally improve students' ability of active inquiry and learning.	Selected the type of formative tool for checking ability of students after leaning about "The movement of Tibetan dance"

Content	Time	Problem-based learning model	Teaching Approach	Measurement and Evaluation
3. Create the dance segments	4 hours	1) Problem design. 2) Set up situation. 3) Group work (analyze the problem and solve the problem). 4) Presentation and discussion. 5) Evaluation and summary.	3) Group work (analyze the problem and solve the problem). Group member search and collect information, study, discuss together to solve the problems. 4) Presentation and discussion. Groups share their problems result with other groups, improve their thinking skill and also improve their confidence to show themselves. 5) Evaluation and summary. Evaluation include group evaluate each other and evaluate themselves, then teacher summarize and comment and guide to help students get progress.	Selected the type of formative tool for checking ability of students after leaning about “Create the dance segments of Tibetan”

Content	Time	Problem-based learning model	Teaching Approach	Measurement and Evaluation
Post-test	1 hour			Selected the type of evaluation criteria for checking dance ability of students before leaning about the 3 topic modules

Definition of Module for training course based on problem-based learning model

Module 1: Basic knowledge of culture and dance 4 hours

1. Basic knowledge of culture about Tibetan.

The Tibetan is one of the 56 nationalities in China. In China, it is mainly distributed in Tibet Autonomous Region, Qinghai Province and western Sichuan Province, Diqing Yunnan, Gansu Gannan and other regions. In addition, there are Tibetan people in India, Bhutan, the United States, Canada, Europe, Australia and other regions. Lhasa is a sacred place in the hearts of the Tibetan people. At present, the world's population of Tibetan is about 7.5 million, about 7 million in China (2016), and the Tibetan population is conservatively estimated at more than 10 million. With wisdom and hard work, the Tibetan people have created a rich national culture on the Qinghai-Tibet Plateau, where natural conditions are difficult. They have left a rich cultural heritage in the fields of music, dance, literature and art, architecture, painting and medicine.

2. Basic knowledge of dance about Tibetan.

Tibetan is a part of their culture, mainly folk self-entertainment dance. Later, simple upper limb movements, in-situ rotation and formation transformation were added, which became the singing and dancing form. The characteristics of Tibetan dance are: rich content, wide range of themes, the Tibetan dance is diverse and original, many Tibetan dances are also used in religious festivals in the sacrificial activities.

Module 2: The movement of dance 4 hours

Dance movement of Tibetan

1.1 Characteristics of Tibetan dance

Tibetan nationality dance contains the nearly 5000 years of cultural development, has a unique personality and charm, the first Tibetan dance body coordination and unified, in the process of dance performance, every part of the body can get unified coordination and use, including knees, feet, waist, shoulder,

hands, arms, head, eyes to participate in the dance performance, Tibetan dance form is not vague or illusory, from the actual, its remains, is the Tibetan dancer form, dance aesthetic value trend.

1.2 Classification of Tibetan dance

Tibetan dance is divided into two categories: self-entertainment dance and national dance and folk dance. These two types of dance have their own rich and unique cultural connotations, and the specific dance styles and forms are also different. Entertainment activities are an important form of communication among the public. Tibetan dance is a relatively formal dance performed in large-scale entertainment activities. Tibetan and folk self-entertainment dance is a dance form that mainly focuses on self-entertainment and meets its own aesthetic value needs.

Module 3: Create the dance segments 4 hours

Music “maji’ami”

The general lyric of “maji’ama” in Chinese: On the top of the east hill, the white moon rose. The young girl's face came back to my heart. The young girl's face came back to my heart. If they never meet, people will not fall in love. If you do not know each other, how can be by the acacia boil fry. If you do not know each other, how can you be affected by the acacia boil fry. The song is adapted by composer Zhang Qianyi who s two poems by Cangyang Gyatso.

In terms of the overall connotation, Cangyang Gyatso’s poem is actually mainly written about his deep yearning for a better life. The song seems to be a love song on the surface, but it is essentially a “Taoist song”. Through a variety of rhetorical devices to be a metaphor for their own devotion to Buddhism.

Training course activity plan based on problem-based learning model

Module 1 Basic knowledge of culture and dance 4 Hours

Content

Basic knowledge of Tibetan culture and Tibetan dance

Time in training

Percentage of knowledge/practice: 50% : 50%

Knowledge: 2 hours

Practice: 2 hours

Trainer

Knowledge part: Chen Hailing

Practice part: Li Huiqing

Objectives of learning

1. Students know the basic culture knowledge of Tibetan, such as history, population, lifestyle, festival, dress culture, etiquette culture, art culture, science and technology, faith culture and so on.

2. Students know the basic dance knowledge of Tibetan, such as style, classification, characteristic, posture, rhythm and so on.

Concept

1. Basic knowledge of Tibetan culture.

The Tibetan is one of the 56 nationalities in China. In China, it is mainly distributed in Tibet Autonomous Region, Qinghai Province and western Sichuan Province, Diqing Yunnan, Gansu Gannan and other regions. In addition, there are Tibetan people in India, Bhutan, the United States, Canada, Europe, Australia and other regions. Lhasa is a sacred place in the hearts of the Tibetan people. At present, the world's population of Tibetan is about 7.5 million, about 7 million in China

(2016), and the Tibetan population is conservatively estimated at more than 10 million. With wisdom and hard work, the Tibetan people have created a rich national culture on the Qinghai-Tibet Plateau, where natural conditions are difficult. They have left a rich cultural heritage in the fields of music, dance, literature and art, architecture, painting and medicine.

2. Basic knowledge of Tibetan dance.

Tibetan dance is a part of their culture, mainly folk self-entertainment dance. Later, simple upper limb movements, in-situ rotation and formation transformation were added, which became the singing and dancing form. The characteristics of Tibetan dance are: rich content, wide range of themes, the Tibetan dance is diverse and original, many Tibetan dances are also used in religious festivals in the sacrificial activities.

Training course activity

Problem-based learning include 5 steps as follow:

1. Problem design.
2. Set up situation.
3. Group work (analyze the problem and solve the problem).
4. Presentation and discussion.
5. Evaluation and summary.

Step 1 Problem design

According to the teaching objectives and students' actual situation, teacher design four questions before class.

1.1 Where are the Tibetan areas mainly distributed? What are the characteristics of the geographical environment in Tibetan areas?

1.2 What are the cultural characteristics of the Tibetan people?

1.3 What are the basic characteristics of Tibetan dance?

1.4 What are the basic postures of Tibetan dance?

Step 2 Set up situation

The teacher prepare videos and pictures related to Tibetan culture and Tibetan dance in advance, and present the video and picture to students in class, so that the students can experience this feeling and have a basic understanding of Tibetan culture.

Teacher ask students divide into 5 groups, each group with 6 students, and question 1 for Group 1: Where are the Tibetan areas mainly distributed? What are the characteristics of the geographical environment in Tibetan areas? Question 2 for Group 2: What are the cultural characteristics of the Tibetan people? Question 3 for Group 3: What are the basic characteristics of Tibetan dance? Question 4 for Group 4 and 5: What are the basic postures of Tibetan dance?

Step 3 Group work (analyze the problem and solve the problem)

3.1 The students divided into 5 group, each group with 6 students and students choose their own group leader.

3.2 The group leader manage other group member discuss about their question. According to the videos and pictures they watch at the beginning of the class, each group try to search more information about their task with their mobile phone or laptop to answer the following questions:

3.2.1 Where are the Tibetan areas mainly distributed? What are the characteristics of the geographical environment in Tibetan areas?

3.2.2 What are the cultural characteristics of the Tibetan people?

3.2.3 What are the basic characteristics of Tibetan dance?

3.2.4 What are the basic postures of Tibetan dance?

Step 4 Presentation and discussion

4.1 First group choose 1 student to present about the Tibetan areas mainly distributed and the characteristics of the geographical environment in Tibetan areas.

4.2 Group 2 choose 1 student to present about the cultural characteristics of the Tibetan people. Such as dress, language, festival, art and so on.

4.3 Group 3 choose 2 students to present about the basic characteristics of

Tibetan dance. One male student present the dance for man, one female student present the dance for women.

4.4 Group 4 choose 1 student to present about the basic postures of Tibetan dance.

4.5 Group 5 choose 1 student to present about the basic postures of Tibetan dance as well.

Step 5 Evaluation and summary

5.1 The teacher give positive comment for all the group, encourage them to explore more next time.

5.2 Teacher follow the topic of group 3 to explain more about the basic characteristics of Tibetan dance and present to students.

5.3 Teacher follow the topic of group 4 and 5 to extend the knowledge about basic postures of Tibetan dance and present to students.

5.4 Teacher ask students give advice to others.

5.5 Teachers evaluate and summarize today's teaching content.

Instructional Media

Online teaching video

Measurement and Evaluation

1. Students' self-evaluation form
2. Group mutual evaluation form
3. Teacher evaluation form

Students' self-evaluation form

Evaluation Items	Score and criterion		
	3 (YES)	2 (NOT SURE)	1 (NO)
1. Be clear about the questions and content of the lesson			
2. Seriously and actively participate in the discussion of the problem			
3. Actively think about the problems and think about ways to solve the problems			
4. Actively collect learning pictures and videos			
5. Actively cooperate with group members			
6. Clearly express opinions and make useful Suggestions in group work			
7. Cooperate, communicate, practice well with group members			
8. Active sharing learning process experience			
9. Show the dance movement completely			
10. Summarize experience to guide other members practice			

Group mutual evaluation form

Evaluation Items	Score and criterion		
	3 (YES)	2 (NOT SURE)	1 (NO)
1. Be clear about the questions and content of the lesson			
2. Seriously and actively participate in the discussion of the problem			
3. Actively think about the problems and think about ways to solve the problems			
4. Actively collect learning pictures and videos			
5. Actively cooperate with group members			
6. Clearly express opinions and make useful Suggestions in group work			
7. Cooperate, communicate, practice well with group members			
8. Active sharing learning process experience			
9. Show the dance movement completely			
10. Summarize experience to guide other members practice			

Teacher evaluation form

Evaluation Items	Score and criterion		
	3 (Excellent)	2 (Good)	1 (Normal)
1. The problem is accurate and reasonable			
2. Creating a situational can inspire students to think			
3. Students improve confidence			
4. Students improve ability to solve problems			
5. Students actively discuss the problems and the classroom atmosphere is active			
6. Students are willing to present			
7. Students show their opinions clearly			
8. Enough time for group work			
9. Good group work			
10. Good dance movement			

Module 2 The movement of dance **4 Hours**

Content

The movement of Tibetan dance

Time in training

Percentage of knowledge/practice: 25% : 75%

Knowledge: 1 hours

Practice: 3 hours

Trainer

Knowledge part: Chen Hailing

Practice part: Li Huiqing

Objectives of learning

1. Students know the movement of Tibetan dance.
2. Students can dance the Tibetan dance.

Concept

1. Dance movement

Dance posture refers to static movement or static modeling after movement. Dance footwork refers to the movement of the center of gravity or step position based on the feet. Dance technique refers to a certain degree of difficulty in the technical movement.

2. Dance movement of Tibetan

2.1 Characteristics of Tibetan dance

Tibetan dance contains the nearly 5000 years of cultural development, has a unique personality and charm, the first Tibetan dance body coordination and unified, in the process of dance performance, every part of the body can get unified coordination and use, including knees, feet, waist, shoulder, hands, arms, head, eyes

to participate in the dance performance, Tibetan dance form is not vague or illusory, from the actual, its remains, is the Tibetan dancer form, dance aesthetic value trend.

2.2 Classification of Tibetan dance

Tibetan dance is divided into two categories: self-entertainment dance and folk dance. These two types of dance have their own rich and unique cultural connotations, and the specific dance styles and forms are also different. Entertainment activities are an important form of communication among the public. Tibetan dance is a relatively formal dance performed in large-scale entertainment activities. Tibetan and folk self-entertainment dance is a dance form that mainly focuses on self-entertainment and meets its own aesthetic value needs.

Training course activity

Problem-based learning include 5 steps as follow:

1. Problem design.
2. Set up situation.
3. Group work (analyze the problem and solve the problem).
4. Presentation and discussion.
5. Evaluation and summary.

Step 1 Problem design

According to the teaching objectives and students' actual situation, design two questions.

1.1 What kinds of Tibetan dances are divided into? What are their characteristics?

1.2 What are the characteristics of Tibetan customs? What are the basic requirements for dragging step?

1.3 The point step comes from what kind of lifestyle? What is the basic requirement of point step?

Step 2 Set up situation

The teacher prepare videos and pictures related to Tibetan dance in

advance, and present the video and picture to students in class, so that the students can experience this feeling and have a better understanding of Tibetan dance.

Teacher ask students divide into 5 groups, each group with 6 students, and question 1 for Group 1 and 2: What kinds of Tibetan dances are divided into? What are their characteristics? Question 2 for Group 3 and 4: What are the characteristics of Tibetan customs? What are the basic requirements for dragging step? Question 3 for Group 5: The point steps comes from what kind of lifestyle? What is the basic requirement of point steps?

Step 3 Group work (analyze the problem and solve the problem)

3.1 The students divided into 5 group, each group with 6 students and students choose their own group leader.

3.2 The group leader manage other group member discuss about their question. According to the videos and pictures they watch at the beginning of the class, each group try to search more information about their task with their mobile phone or laptop to answer the following questions:

3.2.1 What kinds of Tibetan dances are divided into? What are their characteristics?

3.2.2 What are the characteristics of Tibetan customs? What are the basic requirements for dragging step?

3.2.3 The point step comes from what kind of lifestyle? What is the basic requirement of point step?

Step 4 Presentation and discussion

4.1 6 students from Group 1 present about the different kinds of Tibetan dances.

4.2 6 students from Group 1 present about the different kinds of Tibetan dances as well.

4.3 Group 3 choose 2 students, 1 student present about the characteristics of Tibetan customs. Another 1 student explain about the dragging step and present about the movement of dragging step.

4.4 Group 4 choose 2 students, 1 student present about the characteristics of Tibetan customs. Another 2 students explain about the dragging step and present about the movement of dragging step.

4.5 Group 5 choose 2 students, 1 student explain about point step comes from what kind of lifestyle. Another 1 students present about the movement of point step.

Step 5 Evaluation and summary

5.1 The teacher give positive comment for all the group, encourage students to present next time.

5.2 Teacher follow the topic of group 1 and 2 to explain more about “What kinds of Tibetan dances are divided into? What are their characteristics” to students.

5.3 Teacher follow the topic of group 3 and 4 to extend the knowledge about Tibetan customs. And present the basic requirements for dragging step to students.

5.4 Teacher follow the topic of group 5 to explain the knowledge about point step. And present the point step to students.

5.5 Teacher ask students give advice to others.

5.6 Teachers evaluate and summarize today's teaching content.

Instructional Media

Online teaching video

Measurement and Evaluation

1. Students’ self-evaluation form
2. Group mutual evaluation form
3. Teacher evaluation form

Students' self-evaluation form

Evaluation Items	Score and criterion		
	3 (YES)	2 (NOT SURE)	1 (NO)
1. Be clear about the questions and content of the lesson			
2. Seriously and actively participate in the discussion of the problem			
3. Actively think about the problems and think about ways to solve the problems			
4. Actively collect learning pictures and videos			
5. Actively cooperate with group members			
6. Clearly express opinions and make useful Suggestions in group work			
7. Cooperate, communicate, practice well with group members			
8. Active sharing learning process experience			
9. Show the dance movement completely			
10. Summarize experience to guide other members practice			

Group mutual evaluation form

Evaluation Items	Score and criterion		
	3 (YES)	2 (NOT SURE)	1 (NO)
1. Be clear about the questions and content of the lesson			
2. Seriously and actively participate in the discussion of the problem			
3. Actively think about the problems and think about ways to solve the problems			
4. Actively collect learning pictures and videos			
5. Actively cooperate with group members			
6. Clearly express opinions and make useful Suggestions in group work			
7. Cooperate, communicate, practice well with group members			
8. Active sharing learning process experience			
9. Show the dance movement completely			
10. Summarize experience to guide other members practice			

Teacher evaluation form

Evaluation Items	Score and criterion		
	3 (Excellent)	2 (Good)	1 (Normal)
1. The problem is accurate and reasonable			
2. Creating a situational can inspire students to think			
3. Students improve confidence			
4. Students improve ability to solve problems			
5. Students actively discuss the problems and the classroom atmosphere is active			
6. Students are willing to present			
7. Students show their opinions clearly			
8. Enough time for group work			
9. Good group work			
10. Good dance movement			

Module 3 Create the dance segments **4 Hours**

Content

Create the Tibetan dance segments

Objectives of learning

1. Students know the music “ maji’ami ”, and understand the rhythm characteristics of music. Discuss and analyze the themes and expressed feelings of the music by group.

2. Students create a complete dance wiht the music “maji’ami”.

Time in training

Percentage of knowledge/practice: 25% : 75%

Knowledge: 1 hours

Practice: 3 hours

Trainer

Knowledge part: Chen Hailing

Practice part: Li Huiqing

Concept

1. Music “maji’ami”

The general lyric of “maji’ama” in Chinese: On the top of the east hill, the white moon rose. The young girl's face came back to my heart. The young girl's face came back to my heart. If they never meet, people will not fall in love. If you do not know each other, how can be by the acacia boil fry. If you do not know each other, how can you be affected by the acacia boil fry. The song is adapted by composer Zhang Qianyi who s two poems by Cangyang Gyatso.

In terms of the overall connotation, Cangyang Gyatso's poem is actually mainly written about his deep yearning for a better life. The song seems to be a love song on the surface, but it is essentially a "Taoist song". Through a variety of

rhetorical devices to be a metaphor for their own devotion to Buddhism.

Training course activity

Problem-based learning include 5 steps as follow:

1. Problem design.
2. Set up situation.
3. Group work (analyze the problem and solve the problem).
4. Presentation and discussion.
5. Evaluation and summary.

Step 1 Problem design

According to the teaching objectives and students' actual situation, design two questions.

1.1 What are the choreography principles of the comprehensive dance movements?

1.2 What does the combination of actions want to express?

1.3 What is the theme of the music “maji’ama”? What kind of feelings it wants to express?

1.4 How to create dance segments with the music “maji’ama”?

Step 2 Set up situation

2.1 Before class, teacher always play the music “maji ’ami”, so that the students can hear it as soon as they walk into the classroom, and then find a dance video for the students to watch, making the students feel as if they are in the dance situation. After watching it, let the students talk about the feeling of the dance, as well as the evaluation of the integrity and uniformity of the movements.

2.2 Students share the feeling after watching the video (movement, formation).

2.3 Teacher ask students divide into 5 groups, each group with 6 students. Ask students to discuss about the questions as follows: 1) What are the choreography principles of the comprehensive dance movements? 2) What does the combination

of actions want to express? 3) What is the theme of the music “maji’ama”? What kind of feelings it wants to express? 4) How to create dance with the music “maji’ama”?

Step 3 Group work (analyze the problem and solve the problem)

3.1 The students divided into 5 group, each group with 6 students and students choose their own group leader.

3.2 The group leader manage other group member discuss about their question. According to the videos and pictures they watch at the beginning of the class, each group try to search more information about their task with their mobile phone or laptop to answer the following questions:

3.2.1 What are the choreography principles of the comprehensive dance movements?

3.2.2 What does the combination of actions want to express?

3.2.3 What is the theme of the music “maji’ama”? What kind of feelings it wants to express?

3.2.4 How to create dance with the music “maji’ama”?

Step 4 Presentation and discussion

4.1 Each group choose 1 student to explain about “What are the choreography principles of the comprehensive dance movements?”

4.2 Each group choose 1 student to explain about “What does the combination of actions want to express?”

4.3 Each group choose 1 student to explain about “What is the theme of the music “maji’ama”? What kind of feelings it wants to express?”

4.4 Each group present the dance segments with music “maji’ama” with all members.

Step 5 Evaluation and summary

5.1 The teacher give positive comment for all the group, encourage students to present next time.

5.2 Teacher extend the knowledge about “What are the choreography principles of the comprehensive dance movements?” to students.

5.3 Teacher explain more about “What does the combination of actions want to express?” to students.

5.4 Teacher extend the knowledge about “What is the theme of the music “maji’ama”? What kind of feelings it wants to express?” to students.

5.5 Teacher comment on the dance segments for different group.

5.6 Teacher ask students give advice to others.

5.7 Teachers evaluate and summarize today's teaching content.

Instructional Media

Online teaching video

Measurement and Evaluation

1. Students’ self-evaluation form
2. Group mutual evaluation form
3. Teacher evaluation form

Evaluation standard

1. Attend 80% of the class time and cannot be absent more than 20%.
2. The total score must not be lower than 80.

Students' self-evaluation form

Evaluation Items	Score and criterion		
	3 (YES)	2 (NOT SURE)	1 (NO)
1. Be clear about the questions and content of the lesson			
2. Seriously and actively participate in the discussion of the problem			
3. Actively think about the problems and think about ways to solve the problems			
4. Actively collect learning pictures and videos			
5. Actively cooperate with group members			
6. Clearly express opinions and make useful Suggestions in group work			
7. Cooperate, communicate, practice well with group members			
8. Active sharing learning process experience			
9. Show the dance movement completely			
10. Summarize experience to guide other members practice			

Group mutual evaluation form

Evaluation Items	Score and criterion		
	3 (YES)	2 (NOT SURE)	1 (NO)
1. Be clear about the questions and content of the lesson			
2. Seriously and actively participate in the discussion of the problem			
3. Actively think about the problems and think about ways to solve the problems			
4. Actively collect learning pictures and videos			
5. Actively cooperate with group members			
6. Clearly express opinions and make useful Suggestions in group work			
7. Cooperate, communicate, practice well with group members			
8. Active sharing learning process experience			
9. Show the dance movement completely			
10. Summarize experience to guide other members practice			

Teacher evaluation form

Evaluation Items	Score and criterion		
	3 (Excellent)	2 (Good)	1 (Normal)
1. The problem is accurate and reasonable			
2. Creating a situational can inspire students to think			
3. Students improve confidence			
4. Students improve ability to solve problems			
5. Students actively discuss the problems and the classroom atmosphere is active			
6. Students are willing to present			
7. Students show their opinions clearly			
8. Enough time for group work			
9. Good group work			
10. Good dance movement			

Dance ability assessment form

Evaluation Items	Score and criterion		
	3	2	1
1. Dance terms	Always able to explain or demonstrate dance terms	Mostly able to explain or demonstrate dance terms	Sometimes able to explain or demonstrate dance terms
2. Postures/ step/direction	Knows all new postures and steps, accurately performs all dance steps with ease	Knows most new postures and steps,accurately performs most dance steps, struggles at times	Knows some new postures and steps, accurately performs some dance steps, struggles often
3. Body coordination	Hands and feet movement ordinate naturally, flexible, bend, shake	Complete hands and feet movement and ordinate normally, flexible, bend	Complete hands and feet movement but not ordinate naturally, flexible
4. Musicality and rhythm	Shows excellent sense of rhythm and phrasing	Shows good sense of rhythm and phrasing	Occasionally dances off beat, sometimes unaware of music
5. Artistic express	Exhibits captivating and expressive performances, conveying emotions, themes, or stories effectively through dance.	Shows normal artistic expression, effectively expressing emotions or conveying themes with some minor inconsistencies.	Struggles to convey emotions or lacks artistic expression, resulting in a less engaging performance.

Evaluation Items	Score and criterion		
	3	2	1
6. Technical proficiency	Show excellent dance techniques, executing movements with precise form, alignment, and control	Show good technical skills, displaying proficiency in fundamental dance techniques with occasional minor errors.	Show normal technical skills, displaying proficiency in fundamental dance techniques with some minor errors.
7. Dance create ability	Develops a dance sequence that is creative, complete and displays lots of effort and practice.	Develops a dance sequence that is creative, complete and displays lots of effort and practice.	Develops a dance sequence that is not very creative, incomplete and displays little effort and practice.
8. Group work	Works very well with their group all of the time. 1.contributes lots of ideas 2.contributes suggestions for modification 3.listens to others displays patience 4.motivates other group members	Works very well with their group most of the time. 1.contributes some ideas 2.listens to others most of the time / when agrees with what was being said 3.displays impatience at one time 4.displays frustration with others at times	Works very well with their group some of the time. 1.contributes few ideas 2.listens to others sometimes 3.displays impatience more than once 4.requires teacher assistance to refocus and remain in group

Evaluation Items	Score and criterion		
	3	2	1
9. Self evaluation	Can proactively evaluate and reflect on learning, evaluate the effectiveness of self-learning, complete pre assessment test questions, and receive full marks.	Can self-evaluate and summarize learning, evaluate the effectiveness of self-learning, and complete pre assessment test questions.	Lack of awareness of self-evaluation and summarization, failure to complete pre assessment test questions.
10. Peer evaluation	Can actively participate in group evaluations, be able to evaluate others, and humbly accept others' evaluations.	Participate in group evaluations and be able to evaluate others.	Not actively participating in group evaluations and unwilling to evaluate others.

Evaluate quality standards

Score Range	Quality Level
27-30	Strong
23-26	Relatively strong
18-22	General
14-17	Relatively weak
10-13	Weak

Assessment form for the validity of training course plans

Research Title : The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students

Research Objectives :

1. To develop dance training course based on problem-based learning model to improve dance ability of undergraduate students.
2. To compare students' dance ability before and after the implementation of training course based on problem-based learning model.

Assessor: ..... Position:.....

Workplace:.....

Directions: Please assess the congruence between components of training course plans and applications of appropriateness and instructional model by putting √ in the box according to the following criteria.

The rating is +1. There is an opinion that "Corresponds to the definition."
The rating is 0. There is an opinion that "Not sure it corresponds to definition."
The rating is -1. There is an opinion that "Inconsistent with definition."

No.	Items	Assessment Results			Remarks
		+1	0	-1	
1	Content				
2	Objective of Learning				
3	Concept				
4	Training Course Activity				
5	Instructional Media				
6	Measurement and				

	Evaluation				

Suggestions:

.....

.....

Sign.....Assessor

(.....)

Assessment form for the validity of dance ability

Assessment form

Research Title: The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students

Research Objectives :

1. To develop dance training course based on problem-based learning model to improve dance ability of undergraduate students.
2. To compare students' dance ability before and after the implementation of training course based on problem-based learning model.

Assessor: ..... Position:.....

Workplace:.....

Directions: Please assess the congruence between components of self-directed learning ability and applications of appropriateness by putting √ in the box according to the following criteria.

The rating is +1. There is an opinion that "Corresponds to the definition."
The rating is 0. There is an opinion that "Not sure it corresponds to definition."
The rating is -1. There is an opinion that "Inconsistent with definition."

Evaluation Content	Assessment Results			Remarks
	+1	0	-1	
1. Dance terms				
2. Postures/step/direction				
3. Body coordination				
4. Musicality and rhythm				
5. Artistic express				

6. Technical proficiency				
7. Dance create ability				
8. Group work				
9. Self evaluation				
10. Peer evaluation				

Suggestions:

.....

.....

Sign.....Assessor

(.....)

Appendix C

The Results of the Quality Analysis of Research Instruments

Analysis of training course plans consistency index (IOC) based on problem-based learning model by experts

No.	Items	expert			Total	IOC value	conclusion
		1	2	3			
1	Content	+1	+1	+1	3	1.00	suitable for use
2	Objective of Learning	+1	+1	+1	3	1.00	suitable for use
3	Concept	+1	+1	+1	3	1.00	suitable for use
4	Training Course Activity	+1	+1	+1	3	1.00	suitable for use
5	Instructional Media	+1	+1	+1	3	1.00	suitable for use
6	Measurement and Evaluation	+1	+1	+1	3	1.00	suitable for use

Analysis of dance ability assessment form consistency index (IOC) by experts

Evaluation Content	expert			Total	IOC value	conclusion
	1	2	3			
1. Dance terms	+1	+1	+1	3	1.00	suitable for use
2. Postures/step/direction	+1	+1	+1	3	1.00	suitable for use
3. Body coordination	+1	+1	+1	3	1.00	suitable for use
4. Musicality and rhythm	+1	+1	+1	3	1.00	suitable for use
5. Artistic express	+1	+1	+1	3	1.00	suitable for use
6. Technical proficiency	+1	+1	+1	3	1.00	suitable for use
7. Dance create ability	+1	+1	+1	3	1.00	suitable for use
8. Group work	+1	+1	+1	3	1.00	suitable for use
9. Self evaluation	+1	+1	+1	3	1.00	suitable for use
10. Peer evaluation	+1	+1	+1	3	1.00	suitable for use

Appendix D

Certificate of English

BANSOMDEJCHAOPRAYA
RAJABHAT UNIVERSITY

This is to certify that

Miss Hailing Chen

Achieved BSRU English Proficiency Test (BSRU-TEP) level

C2

Given on 26th October 2020

(Assistant Professor Dr Kulsirin Aphiratvoradej)

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Appendix E

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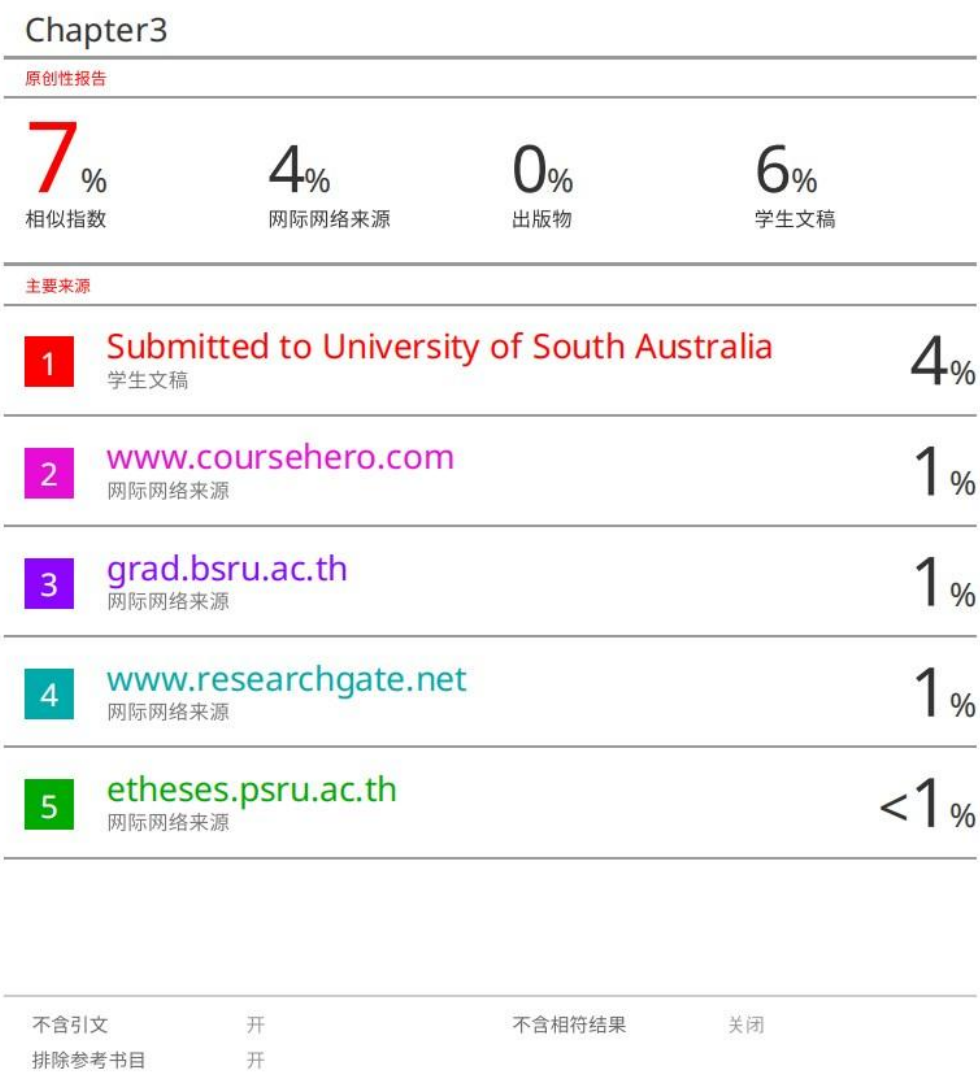

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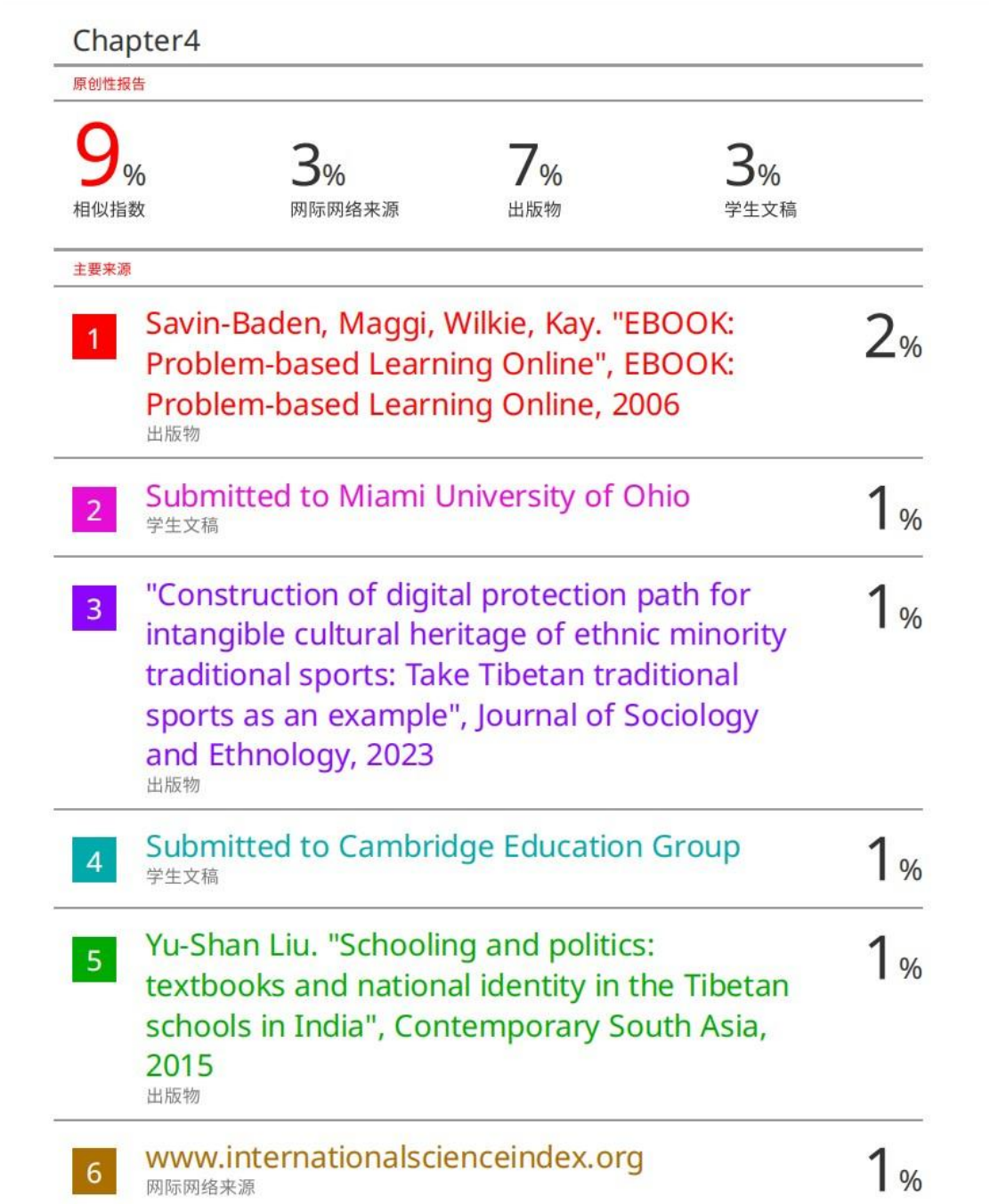

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3 October 2023

Title: Paper Acceptance

Dear Chen Hailing

On behalf of the Organizing Committee and Peer Review Committee, we are pleased that your paper titled,

"THE DEVELOPMENT OF DANCE TRAINING COURSE BASED ON PROBLEM-BASED LEARNING MODEL TO IMPROVE DANCE ABILITY OF UNDERGRADUATE STUDENTS"

submitted for presentation at the 18th National and the 8th International Sripatum University Conference (SPUCON2023) on Research and Innovations to Sustainable Development, held on 27 October 2023, is formally accepted for inclusion in the conference program.

The conference program is shaping up to reflect a wonderful event. We hope that you will be able to fully participate in the conference and take advantages of all the benefits that this conference offer participants and attendees. Besides, your presented paper will be published in the on-line proceedings which will be available at http://spucon.spu.ac.th

We are looking forward to meeting you.

Sincerely yours,

Y. Sulein

(Assoc. Prof. Subin Yurarach, Ph.D.)
Chairman of Peer Review Committee
SPUCON2023

Contact:
Center for Research Support and Education Quality Assurance, Sripatum University
2410/2 Phaholyothin Rd. Senanicom, Chatuchak, Bangkok 10900
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This is to certify that

Chen Hailing, Phenporn Thongkamsuk, Jittawisut Wimuttipanya

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on 27th October 2023

Dr. Rutchaneeporn Pookayaporn Phukkamarn
President
Sripatum University, Thailand

SPUCON2023-EN-036

The 18th National and The 8th International Sripatum University Conference (SPUCON2023)

THE DEVELOPMENT OF DANCE TRAINING COURSE BASED ON PROBLEM-BASED LEARNING MODEL TO IMPROVE DANCE ABILITY OF UNDERGRADUATE STUDENTS

Chen Hailing

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Assoc.Prof.Dr.Jittawisut Wimuttipanya

Faculty of Education, Bansomdejchaopraya Rajabhat University, Thailand

E-mail: Jittawisut21@gmail.com

ABSTRACT

The purposes of this research were 1) to development of dance training course based on problem-based learning model to improve dance ability of undergraduate students and 2) to compare students' dance ability before and after the implementation base on problem-based learning model. The sample group included 30 third-year students from preschool education major of university, in the first semester of the academic year 2023, those who obtained through cluster random sampling. The research instruments included 1) dance training course activity plans based on the problem-based learning model and 2) dancing ability assessment form. Data were statistically analyzed by average, standard deviation, and t-test of dependant sample.

The results were found that:

1) Developing dance training course based on problem-based learning model for undergraduate students, the course include: module 1 basic knowledge of culture and dance, module 2 the movement of dance, module 3 create the dance segments, 12 hours in total. And measure students' dance ability before and after course, it was found that students' dance ability has been improved.

2) Using dance training course based on problem-based learning model, the dance ability of students after class is significantly higher than before class, with statistical significance at the level 0.01.

KEYWORDS: Training course, Problem-based learning model, Dance ability

1. Introduction

Dance originates from the labor practice of human survival and development and the needs of other kinds of life practice. Combined with poetry and music, it is one of the earliest art forms in human history. In the primitive society, people live in groups, dance is the simulation of teaching labor skills, practicing fighting skills, physical exercise, seeking spouses, witchcraft, religious sacrifice and other activities. It is an important means to exchange emotions, thoughts and vent their inner emotions.

As a teaching model, problem-based learning model was proposed by Howard Barrows, an American neurology professor, in the 1950s. Zheng Jianbin (2021) concluded that: Howard Barrows integrated clinical medical problems into classroom teaching. Although students recite a lot of theoretical knowledge due to the complex clinical medical symptoms, there are still many problems in practical operation. The disconnection between theory and practice is very common. Let students have a better grasp of medical methods. Stentoft (2019) explored that problem-based learning model programs can increase student engagement and motivation and help students develop competencies related to medical research. Wang Tao (2019) put forward that problem-based learning model is a new teaching model, it will be the student in a chaos, the structure of the bad situation, make students become the master of the situation, starting from the problems in real life to provide teaching materials, stimulate students to think, to explore, to learn the knowledge required to solve this problem, the final step by step to solve the problem. As an effort to improve classroom learning activities, The model of problem-based learning model by Zulyusri (2019) takes genetic material as the research object and is divided into two cycles. Each cycle consists of four phases: planning, implementation, observation and reflection. The tool used in this study was the students' observation sheets, as a form of reflection for each cycle, and the results showed that the learning activities of the students who applied the problem-based learning model model were divided into better categories.

Compared problem-based learning model with traditional teaching models, problem-based learning model focuses on students and makes students become the main body of learning, which changes the teacher's dominant position in class and makes learning based on questions. Different from the traditional teaching mode, it emphasizes student-centered and problem-centered design and development. Learners solve problems in specific situations together through group discussion, acquire methods and abilities to solve problems, and acquire the ability to independently explore and acquire knowledge. In daily teaching activities, problem-based learning model has a disadvantage, that is, the content of the course is less than the traditional course, and students focus on solving problems, so students cannot acquire a lot of basic knowledge from classroom learning. When used to develop a training course for students, the courses based on problem-based learning model has several important benefits: 1) develops critical thinking skills, 2) increases student engagement, 3) enhances knowledge retention, 4) fosters collaboration and 5) prepares students for the workplace.

In the researcher design the development of dance training course based on problem-based learning model to improve the dance ability of undergraduate students, by implementing the problem-based learning

model, the average scores of dance ability before class for 30 students in third-year of preschool education major in university is 14.47 points, 24.07 points after class, and the difference in before and after average scores is 9.6 points, indicating that the scores after class are higher than before class. All of the students already have in the previous semesters learning the basis of professional course, have the basic professional abilities, so this dance training courses will help students to solve problems in the specific situation, improving students' dance ability, improve students' learning interest, enhance students' learning initiative, cultivate students' comprehensive ability, leading to better learning outcomes.

2. Research Objective

1. To development of dance training course based on problem-based learning model to improve dance ability of undergraduate students.
2. To compare students' dance ability before and after the implementation base on problem-based learning model.

3. Literature Review

3.1 Problem-based learning model

Burrows (1980), the founder of problem-based learning model, regarded problem-based leaning model as a model of learning in the process, believing that learners should learn in the process of understanding and solving problems, and the learning process should be controlled by themselves. The way to acquire knowledge is to solve problems and integrate knowledge by themselves. Bridges (1992) argue that problem-based learning model is a student-centered approach to solving real problems by framing lectures with problems as the beginning of learning. After entering the 21st century, with the maturity of problem-based learning model, it gradually penetrated into more fields and stages. Treadwell (2018) proved through experiments that problem-based learning model played a positive role in physical education, especially in improving students' physical literacy. Hmelosilver (2004) proposed in the article that problem-based learning model means that teachers first determine learning objectives, then set problems, and finally students solve problems in group cooperation, so as to improve students' understanding and learning skills. Lv (2022) Problem-based leaning model is a teaching model that puts learning in a complex and exploratory problem situation, takes students as the main body of the class and learns the biological knowledge behind the problem by making students solve problems, so as to cultivate learners' multiple abilities in the process of solving problems.

3.2 Training course based on problem-based learning model

A structured program that focuses on active learning and problem-solving through the use of real-world problems or scenarios. In this model, learners are presented with a complex problem or challenge and are encouraged to work collaboratively to develop a solution. The training course is designed to promote critical thinking, problem-solving, and collaboration skills among the learners. The instructor acts as a facilitator,

guiding the learners through the problem-solving process and providing support and feedback as needed. The training course based on problem-based learning model typically includes the following steps:

Step 1: Problem design: according to the curriculum activity plan and teaching objectives of dance training courses, the teaching content is determined, the problems are designed according to the dance content of the class, and the students are required to find relevant literature and videos about the problems in the teaching process, and carefully search and practice.

Step 2: Set up situation: teachers decide the teaching content before class, design situations, and guide students to think and explore the problems actively, help students to find problems during learning, and learn to analyze these problems, find out the causes of these problems and solve these problems in time, and finally improve students' ability of active inquiry and learning.

Step 3: Group Work (analyze the problem and solve the problem): group member search and collect information, study, discuss together to solve the problems.

Step 4: Presentation and communication: groups share their problems result with other groups, improve their thinking skill and also improve their confidence to show themselves.

Step 5: Evaluation and summary: evaluation include group evaluate each other and evaluate themselves, then teacher summarize and comment and guide to help students get progress.

Training courses based on the problem-based learning model can be adapted to a variety of subjects and can be delivered in a variety of formats, including classroom-based learning, online learning, or a combination of both. They are particularly effective for developing critical thinking, problem-solving, and collaboration skills, and can be used in a wide range of professional development settings.

3.3 Dance ability

Zheng Xuan (2020) announced dance is an art form, a way of education, and a way of conveying ideas. For students majoring in preschool education, dance ability is an important part of preschool education. Good dance ability can help students to correctly understand the world, feel the beauty of life, appreciate the beauty of dance, stimulate the artistic quality of students, and improve the comprehensive quality of students is of great help. Huang Rong (2020) said dance mainly reflects the life, thoughts, emotions and attitudes of preschool children, so there is a very significant difference between it and adult dance.

3.4 Research Framework

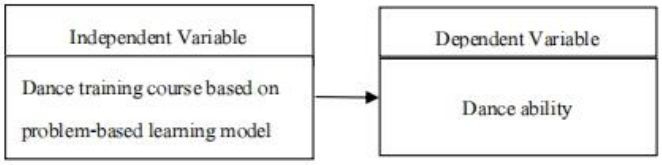

Figure 1 Research Framework

3.5 Research Hypotheses

After the training course based on problem-based learning model, the students' dance ability has been improved obviously.

4. Research Methodology

4.1 Research Design

"The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students" is an experimental study aimed to improve dance ability of undergraduate students by using problem-based learning model. This research is experimental research. One group Pretest - Posttest Design was used with the following experimental design:

Table 1. Experimental design.

Group	Pretest	Experimental	Posttest
R	O_1	X	O_2

The meaning of the symbols used in the experimental design.

R means Random Sampling

X means experimental

O_1 means Pretest

O_2 means Posttest

4.2 Population and Sample

Population: The population of this research was 300 third-year students majoring in preschool education of university, 10 classes in total and 30 students in each class.

Sample: The sample group of this research was 30 students from Class 5, Grade 3 majoring in preschool education in the first semester of the academic year 2023 of university, through the random cluster sampling method.

4.3 Research Instrument

The development of dance training course based on problem-based learning model to improve dance ability of undergraduate students. The research instruments is as follows:

4.3.1 Training course and curriculum activity plans based on problem based learning model

1) Use as a guide for developing through learning objectives, content, guideline for organizing measurement and assessment of curriculum activity.

2) Based on the index analysis the core learning content, set learning objective, learning content, and learning time.

3) Study of concept, theories related to the theory from document, textbook, and related to the research to create a new curriculum activity plan.

4) The researcher formulated 3 curriculum activity plans by using problem-based learning model and selected 3 modules: 1) basic knowledge of culture and dance, 2) the movement of dance, 3) create the dance segments, 12 hours in total.

5) Each curriculum activity plan in detail according to problem-based learning model: content, time, objective, concept, curriculum activity, instructional media, measurement and evaluation.

6) Submit the completed curriculum activity plan to the tutor to check the consistency applicability of the plan, make modifications according to tutor's suggestions.

7) Submit the revised curriculum activity plans to 3 experts.The consistency indicator of each evaluation content is greater than or equal to 0.5 and it's considered suitable for research. The ICO value for each question in this evaluation criteria is 1.00.

4.3.2 Dance Ability Assessment Form

1) This is the assessment form created by the researcher, which is divided into 10 evaluation contents. Analyze the learning content dance ability consistent with the curriculum activity plan.

2) learn theories and methods of dance ability and learn assessment from the literature and relevant research.

3) According to the definition and dimensions of dance ability, referring to previous researchers' dance ability evaluation instruments, the dance ability evaluation standard is designed. The scoring criteria and corresponding score have been established for all 10 evaluation points: 1 point, 2 points, 3 points, and the full score is 30 points in total. Different score represent varying degrees of dance ability. 27-30 points represent is strong, 23-26 points represent relatively strong, 18-22 points represent general, 14-17 points represent relatively weak, 10-13 points represent weak.

4) The consistency indicator of each evaluation content is greater than or equal to 0.5 and it's considered suitable for research. The ICO value for each question in this evaluation criteria is 1.00. Check the reliability of measurement standard using Cronbach's α Coeffient=0.90, which can be used for research.

4.4 Data Collection

1. Invite 3 relevant professional scholars and experts, issue official documents of Bansomdejchaopraya Rajabhat University professional scholars and experts, and provide information on research content and research tools: curriculum activity plans and dance ability evaluation criteria for consideration of the goal alignment index: IOC. Collect IOC inspection data from 3 professional experts.

2. This study is an experimental study which is according to the research tools developed by the researchers, scores were carried out before and after the experiment, and evaluation data were collected.

4.5 Data Analysis

1. Analyzed and verified the effectiveness of the Training course and curriculum activity plans based on problem-based learning model and dance ability assessment form scoring criteria, taking the consistency index as the consideration standard (objective consistency index: IOC). And check the reliability of measurement standard using Cronbach's α Coeffient which can be used for research

2. Analyze basic student information by finding hundreds and percentages, including analyzed musical rhythm skill of students before and after the implementation of the experiment was scored. Using the data obtained from the experiment to analyze the statistical data through the mean value, standard deviation and t-test for dependent samples.

5. Research Findings

By implementing the problem-based learning model, the average scores of dance ability before class for 30 students in third-grade of preschool education major in university is 14.47 points, 24.07 points after class, and the difference in before and after average scores is 9.6 points, indicating that the scores after class are higher than before class.

1) Development training course based on problem-based learning model for undergraduate students, Training courses include: module 1 basic knowledge of culture and dance, module 2 the movement of dance and module 3 create the dance segments, training course in total 12 hours. it was found that students' dance ability has been improved.

2) The researcher analyzed the data and used mean, standard deviation, and t-test dependent to analyze the scores of students' dance ability before and after class. The data analysis results are shown in Table.

Table 2. Comparison of dance ability before and after class by implementing the problem-based learning model

Dance ability	n	Full scores	$\bar{X}$	SD.	t	p
Before class	30	30	14.47	2.70	36.80**	0.00
After class	30	30	24.07	2.75		

** Statistically significant at level 0. 01 ($p < 0.01$)

It can be seen from Table 4.2 that the average score of dance ability of 30 students in third-grade of preschool education major in university after class is higher than the average score before class, indicating that students' dance ability after class is higher than before class. P<. 01 indicates statistical significance at the 0.01 level. By implementing the problem-based learning model on students, their dance ability after class is significantly higher than that before class. This is consistent with the research hypothesis.

6. Discussion

The development of dance training course based on problem-based learning model to improve the dance ability of undergraduate students. Give full play to the principal position of students in the whole learning activity, improve students' learning behavior, including stimulating students' learning awareness, improve students' learning interest, optimizing learning activities, strengthening students' learning evaluation ability, improving interpersonal skills, and promoting the improvement of students' dance ability.

It terms of measurement and evaluation is determined to be an assessment based on actual conditions and to measure according to the learning objectives and in determining the work piece and workload are appropriate in accordance with the learning objective, which is consistent with the research Zheng Jianbin (2021), Through the research in theory and teaching practice, the researchers believe that the application of problem-based learning model in dance teaching is feasible and effective. Through the analysis of three teaching practice courses, it is found that the change of learning in class is gradually improved, the activity of class is gradually increased, the participation of students is gradually increased, and the enthusiasm is also strengthened. With the deepening of the class, students are willing to share and cooperate with other students, and their interest in learning dance has gradually increased. In the class, the enthusiasm of each group is very high, each group can basically complete its own task, most of the team members can participate in the cooperation, and the dance results can also show the quality of the movement and the beauty of the dance. The results show that: 1) Problem-based learning model can obviously improve the majority of students' interest in learning dance, 2) Problem-based learning model effectively changes students' learning motivation and improves students' initiative in learning dance, 3) Problem-based learning model cultivates students' comprehensive ability, 4) Problem-based learning model improves the professional quality of dance teachers, 5) It enriches the practical teaching cases of problem-based learning model in dance course. This study develop a dance training course based on the problem-based learning model with five steps, the advantages of this training course is specific objective, improve students' learning interest, enhance students' learning initiative, cultivate students' cooperate ability. The research results show that after the implementation of dance training course based on problem-based learning model, the average score of students' dance ability is higher than before implementation, and the difference is statistically significant at the level of. 01, indicating that the problem-based learning model can promote the improvement of students' dance ability.

The conclusions of this study are consistent with research Lv Qing (2022), Lv Qing designed the questionnaire from five dimensions: students' interest in biological experiments, students' cognition of educational value, students' learning situation, experimental teaching methods, and evaluation of the current situation of experimental teaching, and found that students lacked the ability to analyze problems, cooperate, and express and communicate. The research result proves that: 1) the application of problem-based learning model to biology experiment teaching in senior high school has a certain promotion effect on the development

of students' ability and quality, 2) problem-based learning model can promote the cultivation of students' core literacy in biology, especially the cultivation of scientific inquiry and scientific thinking.

7. Suggestion

7.1 Suggestions for research utilization

1) In the teaching process, due to the different difficulty of learning content in each class and the different foundation of students, the learning content needs to be adjusted in time according to the actual situation.

2) The questions proposed by the teacher should be designed according to the actual situation of the students to ensure that the students are clear about the content of the questions.

3) According to the actual teaching situation, teachers should design diversified evaluation methods.

7.2 Suggestions for future research

The research of problem-based learning model in dance teaching is a long-term research activity, and the improvement of students' dance ability requires a lot of time and long-term monitoring. In this study, only three courses were offered for Tibetan dance, and certain positive effects were achieved in the short term. However, the obvious differences of students as a whole should be observed. Problem-based learning model should be applied to a long-term dance course.

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