
Scalable Computing: Practice and Experience, ISSN 1895-1767, http://www.scpe.org
© 2024 SCPE. Volume 25, Issues 6, pp. 5286–5294, DOI 10.12694/scpe.v25i6.3222

EVALUATION OF ATHLETE PHYSICAL FITNESS BASED ON DEEP LEARNING

YOUYANG LV*

Abstract. In order to promote deep learning in physical education for students, guided by the concept of deep learning, the author integrates the concept of deep learning into flipped classrooms. The author proposes a flipped classroom design and classroom implementation process for promoting deep learning, and conducts a semester long experimental research based on basketball courses, continuously optimizing the design during this period.Through the analysis of various parameters appearing in the operation, the test results are satisfactory. The study found that students in three classes were physically trained by using the classroom teaching method of "deep learning". The classroom teaching mode based on deep learning achieved the best teaching results in the first stage. One habit that inspires real emotion in children is their pace: running in different directions. Classroom teaching based on deep learning can make students understand the importance of cross-movement. Thus, after experiment, there was no significant difference between the flipped classes and the traditional class teaching method in the cross run compared to before experiment. The effectiveness of flipped classroom design for promoting deep learning has been verified, achieving a promoting effect on students' deep learning. The flipped classroom designed by this research institute can effectively promote learners to achieve deep learning, specifically manifested as: The physical fitness level of students has improved, the level of cognitive structure has improved, and students are more able to learn independently. The goal of deep learning for students has been achieved.

Key words: Deep learning, Athlete physical fitness, Evaluation, Flipped Classroom

1. Introduction. At present, the quality of physical education teaching in many universities is worrying. On the one hand, the traditional concept of "valuing literature over martial arts" has deeply influenced us to this day. Both parents and children deeply believe that reading is the only way out in life [1]. On the other hand, teachers lack a sense of responsibility, without planning or organizing teaching. This leads to some students, after many years of physical education, ultimately unable to develop their own unique skills. Therefore, educators should continuously improve their own quality, theoretical level, and educational research ability, make good use of classroom time, and organize students to learn and practice diligently, so that students can truly learn sports techniques and exercise methods, increase their interest in sports, and enhance their physical and mental health.

At present, the state of college students is that on the one hand, their attitudes towards physical education classes are polarized. Some students love physical education classes very much, while others strongly reject them; On the other hand, the physical education learning ability of students needs to be improved [2,3]. In this trend, physical education learning ability becomes particularly important, as it not only reflects the speed of students learning skills, but also reflects changes in their thinking abilities. Deep learning aims to cultivate learners with unique insights and the ability to solve practical problems. From a technical perspective, immersive technology promotes effective learning with its advantages of low cost, high learning effectiveness, and repetitive experience. Wearable devices are gradually being applied in teaching courses due to their portability, user focus, intelligent interaction, augmented reality, and other characteristics. Mobile internet technology is combined with learning in different forms, artificial intelligence and big data technology provide technical and theoretical support for adaptive learning systems.

Educational practice research is aimed at helping students grow and develop better. In school, students not only need to learn knowledge, but also need to enhance the core competencies of physical education that are needed to adapt to our new era society. As young teachers of the new era, we should inject fresh blood into physical education teaching, use new teaching methods and means to comprehensively enhance students' core sports literacy, and enable students to play their main role in solving complex practical problems, truly

* School of Physical Education, Guizhou Normal University, Guiyang, Guizhou , 550025, China (13752719851@139.com)

improving their thinking ability, and providing some reference for physical education teaching reform.

Using the in-depth learning assessment model based on SOLO theory, analyze the changes of students' classroom comprehension to evaluate the effectiveness of classroom teaching.In- depth study initially has two meanings. The first layer is in the field of computer science. The construction and research of human brain neural networks have led to the exploration of deep learning strategies. It combines the finite element method and finally forms an abstract finite element model to find the distribution characteristics of the data for the representation.Another layer of meaning lies in the field of education. This concept is proposed based on the definition of shallow learning, which is classified according to Bloom's cognitive goals: memory, understanding, application, analysis, evaluation, and creation. Shallow learning includes the first two parts, while deep learning includes the last four parts. The so-called shallow learning refers to the learning form that is influenced by external factors and uses simple memory, repeated practice, and reinforcement memory to learn new knowledge. Shallow learning is when students can only develop shallow understanding within a limited time, resulting in teaching activities that become superficial, superficial, and performative. Deep learning is the exploration of a certain content or viewpoint, emphasizing critical understanding. What students learn can go beyond surface knowledge and achieve a deeper understanding of the knowledge. Compared to that, shallow learning is more about the mechanical accumulation of knowledge, and lacks emotional resonance among learners; Deep learning advocates learners to view learning materials with a critical and skeptical attitude, approach problems with a questioning and analytical attitude, establish connections between various viewpoints, and deepen their understanding of complex concepts. The author takes the flipped classroom teaching model based on deep learning, flipped classroom teaching model, and traditional classroom teaching model as the research objects in basketball teaching, focusing on the five physical qualities of students and their deep learning abilities [4].

2. Methods. The author focuses on the five physical qualities of students and their deep learning abilities in basketball teaching under three different teaching modes: flipped classroom teaching mode based on deep learning, flipped classroom teaching mode, and traditional classroom teaching mode.

2.1. Questionnaire survey method.

(1) Design of questionnaire. After soliciting opinions and suggestions from relevant experts multiple times, the questionnaire items were modified, added or deleted multiple times, and a survey questionnaire on students' deep learning ability was designed to ensure that all items can accurately express the research content, forming the final survey questionnaire. The completed questionnaire takes students from a university in A city, A province as a sample and conducts a survey. Through the distribution, collection, and organization of the questionnaire, the current situation of students' deep learning ability in physical education classrooms is understood, providing reference data for the author's research [5].

(2) Reliability and validity testing of the questionnaire. The Cronbach coefficient is a commonly used reliability evaluation tool. According to SPSS testing, the Cronbach coefficient value of the deep learning ability questionnaire is 0.916, indicating that the questions in the questionnaire have high internal consistency.

2.2. Teaching Experiment Method . After analyzing the situation of students' study and the characteristics of physical education, the physical education course reform teaching design system based on deep study was established. and the physical education course reform was designed. Experiment 1 used the classroom teaching model as the in- depth study, Experiment 2 used the classroom teaching model, and the traditional teaching model was used to control the classroom[6].

(1) Experimental hypothesis. The flipped classroom teaching model based on deep learning can better improve students' physical fitness and enhance their deep learning ability.

(2) Experimental subjects. A Normal University 2020 (undergraduate) students in the optional course of college sports basketball, including 32 students in Experiment 1 class, 30 students in Experiment 2 class, and 32 students in the control class.

(3) Experimental time and location. Experimental period: August 2021 to December 2022, with a total of 32 class hours and 16 week hours. Location: A Normal University West District Basketball Court.

(4) Teaching experiment process. Create an experiment class using Learningapp, where students can download instructional videos, materials, do tasks, and then log in to the classroom. Download videos and files

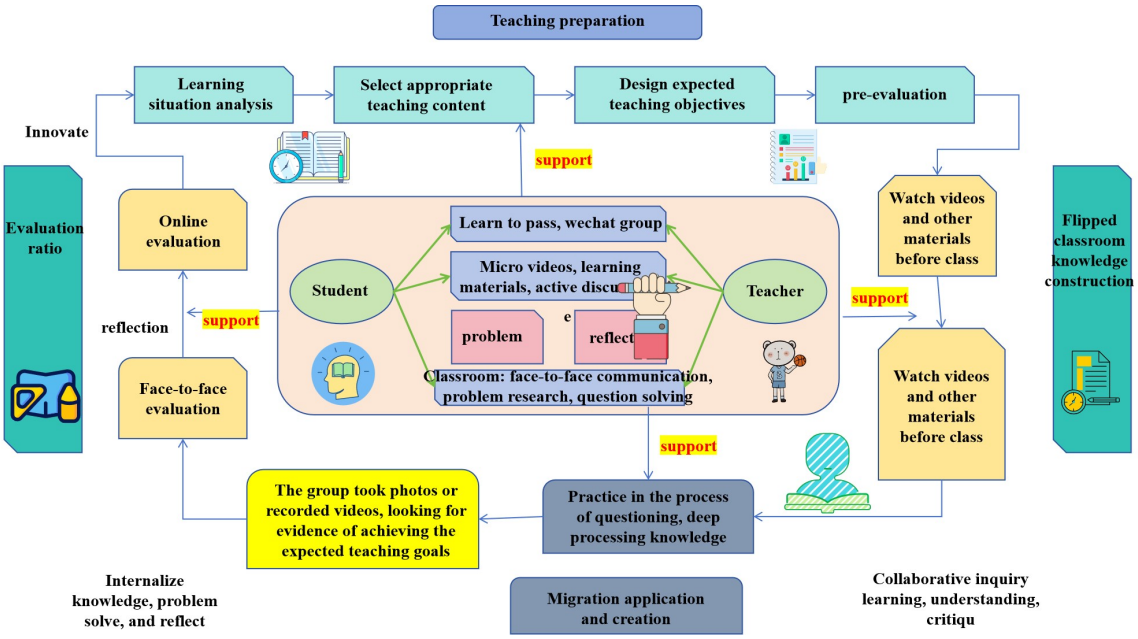

Fig. 2.1: Flipped classroom teaching mode based on deep learning

about basketball on the Internet, and use mobile phones, computers and other software to edit and edit the content to learn.

2.3. Experiment 1 Class Deep Learning Flipped Classroom Teaching Mode. *Before class:* Divide students into small groups based on their actual situation and set expected teaching dates for them. During the discussion, teachers use various kinds of "questions" and follow the principle of inquiry as teaching, allowing students to communicate online.During this period, the group leader collects and organizes key questions within the group, and focuses on explaining them in class. By questioning students in this way, it triggers their thinking and deepens their ability to learn independently, understand, and engage in deep learning. In class: After class, the sports committee will gather in a team, and the teacher will use the "Learning App" to publish check-in. Students will sign in. Teachers and students interact, and the teacher will announce the teaching content and objectives of this course and organize the interns. and Before class, teachers can check students' self-study by asking them to finish some questions or to ask questions about teaching. Our group of people raised issues and questions were discovered by their own group, and the teacher provided clear and concise advice on the issues of student cohesion.At the end of the course, the teacher prepares the students to practice or play games to help improve their physical fitness, such as running back, sitting, playing fast, etc., so as to improve their physical fitness. After exercise, relax and arrange some activities. Students and teachers will conclude classes together, assess whether the teaching objectives have been met according to the class situation, and improve the teaching prospects of the next class by making suggestions. Then, the class will be announced.

After class: The teacher thinks about the students and gives them a job opener (the job opener has no correct answer). For the assignment, students need to engage in independent and in-depth thinking, process newly learned knowledge, and combine it with the existing knowledge structure.

Through the above process, the author designed a flipped classroom process framework to promote deep learning, as shown in the figure. This framework presents the main teaching and learning activities of the flipped classroom before, during, and after class, aiming to gradually guide students to ultimately acquire higher-order thinking abilities. Figure 1 shows a flipped classroom teaching model based on deep learning.

2.4. The flipped classroom teaching method of Experiment 2. According to the teaching method, teaching videos (3-5 minute short films), pictures, PPT documents and textbooks are sent to the learning platform. Students are free to download what they learn and ask questions in the process, with the teacher giving answers.Some questions require students to have group conversations and let them engage in online communication.During this time, the group leader will collect and organize key questions within the group, and focus on explaining them in class.

In class: First, after the class bell rings, the sports team assembled the group. The teacher used the learning application to check later, and the students entered to use the notices received by their telephone. The teacher prepares the students to take part in the preparatory activities (including general and special activities related to volleyball skills), and then examines the students' self-study, expecting them to finish some tests or explain some comments about the teaching. Then each group sends representatives to explain the new content, other students evaluate it, and the teacher provides guidance. Then, the teacher needs to provide a unified summary, succinctly explain and demonstrate the key and difficult technical actions. In response to the questions raised by students, teachers should provide complete and detailed explanations and demonstrations of technical actions, and provide detailed explanations of key and difficult knowledge points. Then the students study in groups. Students use their phones to take photos or record videos with each other, in order to discover and correct mistakes, forming a good learning atmosphere of mutual assistance and learning. After the course, the teacher prepares the students to do exercises or activities which are beneficial to the improvement of their physique, such as turning, sitting, playing fast, etc., so as to improve their physique. After that, the teacher set the students to participate in the relaxation activities. After graduation, the students and the teachers summarized the course together and announced the end of the class.

After class: Learners independently carry out consolidation exercises to reinforce the knowledge they have learned, and then reflect and summarize the learning content and process to improve the effectiveness of their subsequent physical education course learning. Compared to the traditional classroom teaching mode of the control class: First, after the bell rings for class, the sports committee gathers in the team and reports the attendance situation to the teacher. After greeting each other, the teacher announced the teaching content and objectives of this lesson and arranged interns. Subsequently, organize students to carry out preparatory activities. The teacher provided a detailed explanation and demonstration of the teaching content for this lesson. Students listen attentively, study diligently, imitate the teacher for practice, and then practice together with their peers. During student practice, teachers need to provide tour guidance to understand their understanding and mastery of technical movements, point out errors and correct them on the spot, and provide students with reasonable suggestions. After the students practice separately, the teacher gathers them together and emphasizes the common problems that arise among the students. Then the students identify their own mistakes and correct them based on the problems pointed out by the teacher, in order to consolidate and strengthen their actions. Finally, at the end of the class, the teacher organizes students to practice in small groups and then allows them to relax. Then the teacher summarizes and evaluates the lesson, assigns homework, and announces the end of the class.

2.5. Mathematical Statistics. Classify and statistically analyze the relevant data of the experiment and the relevant questions in the collected valid questionnaires. Process various data using statistical theory and input them into a computer for data analysis using Microsoft Office 2016 and SPSS 17.0.

2.6. Teaching design strategies towards deep learning.

(1) The principles and design features of inquiry based teaching. The principle of inquiry based teaching is: Firstly, in order to guide students through inquiry, making their learning path clearer. Teachers should provide appropriate and timely guidance during the teaching process, allowing students to review and check previous knowledge points, thereby breaking through comprehension barriers and quickly solving problems. Secondly, concretize questioning to make students' thinking more complete. In physical education teaching, teachers can supplement and explain their own questions appropriately, making the problems more specific and allowing students to have a clearer understanding of the problems. Teachers should be able to publish their research questions to other sports activities or disciplines according to their study and content. This teaching method can guide students' thinking into deep learning, which is conducive to the development of their different thinking modes.

The characteristic of inquiry based teaching design: inquiry is to ask a certain question again after a question, relentlessly pursuing it, sometimes changing perspectives and proposing new questions, guiding students to think, abstract, and summarize, which is a form of deep learning. Through research, it has been found that the research on deep learning in the national education system is still relatively weak, and there are not many types of excellent courses, open courses, etc. carried out nationwide. In the new era, exploratory learning is advocated. For the teaching of technical or tactical essentials in new teaching, exploratory learning activities can be set up, through self-directed learning, flipping during class, and reflection after class, students are encouraged to engage in deep learning. The entire learning process cultivates their creativity, divergent thinking, and flexibility.

(2) Principles and features of reverse teaching design. The principle of reverse engineering teaching: 1. the principle of reverse engineering Starting from the needs of the students, it is the best choice to carry out sports teaching service quality education, and it is also necessary to cultivate and improve the students' personality. 2. His teaching is mainly focused on research as a subject. 3.

Different sports projects have different characteristics, and even different techniques and teaching forms in the same project have different effects, through summary, it is found that "reverse teaching" has appeared in the form of "teaching methods" in previous research on physical education teaching, but has not formed its fixed "mode". Perhaps because different sports have different characteristics, the same teaching model assumptions cannot be used when teaching different sports. This issue can be further explored as an extension. In this study, based on previous research findings and the characteristics of basketball, "reverse teaching" is defined as: understanding the basic situation of students, designing expected teaching goals that students can achieve, breaking the traditional teaching approach of simple to complex and easy to difficult without compromising completeness, and directly starting from the most important aspect of teaching as the entry point, then search for evidence in the classroom that students can achieve teaching objectives, and finally reflect at the end of the class.

(3) Other strategies to promote deep learning. Deep learning is the process of students participating in learning activities independently, constantly reflecting, exercising their thinking, and achieving creative learning. In physical education teaching activities, teachers should allow students to fully experience their true thinking state, achieve autonomous understanding of knowledge, actively think about problems, establish connections with learned knowledge, and answer suitable answers. The strategies to promote deep learning include inquiry based teaching, reverse teaching, and collaborative inquiry learning, among others.

2.7. Design of flipped classroom teaching process for college sports basketball elective course based on deep learning.

(1) Pre class self understanding and initial formation of understanding. The teaching of university courses cannot be limited to the transmission of knowledge in the classroom. It is necessary to change the traditional situation where teachers teach unilaterally and students learn unilaterally in the classroom [7]. Firstly, openness can promote students to have a deep understanding, mutual correlation, and clear and actionable expected teaching objectives; Second, in order to expand the depth and breadth of learning, we must choose those engaging learning materials that occupy the center of the topic. This feature of the curriculum is more likely to be expressed in the way of "problems",due to the particularity of physical education, the order of teaching content can be adjusted from easy to difficult in the past to difficult to easy, enabling students to actively think on the basis of problems and achieve the goal of deep learning; Finally, design questions for students, release specific learning tasks, guide the orderly development of pre class learning activities, and make full preparations for making full use of face-to-face teaching time for classroom learning.

(2) Sharing understanding in class and correcting cognitive biases. The so-called cognitive bias refers to the errors that occur when people form impressions of others in the process of mutual contact and interaction. Social cognition is the foundation of people's social behavior, so if there is cognitive bias, people's behavior will also make mistakes. In schools, the communication between physical education teachers and students is also influenced by the laws of social cognition.Subsequently, the teacher will answer questions and clarify doubts based on the actual situation, and practice skills after completing theoretical knowledge learning.

(3) After class reflection and understanding, training of metacognitive abilities. When students encounter conflicts between new and old cognition during the learning process, they will actively reflect, which can help

Table 3.1: Comparison and Analysis of Physical Fitness of Students in the Experimental Class and the Control Class before and after the Experiment (1)

index	group	Before the experiment	After the experiment	T	P
		Mean ± standard deviation	Mean ± standard deviation		
50 meters	Experiment Class 1	72.88±8.03	80.06±6.11	-8.888	0
	Experiment Class 2	74.37±9.39	78.70±6.53	-4.378	0
	Control class	73.72±8.79	74.13±8.51	-1.099	0.282
Sit ups/pull ups	Experiment Class 1	75.06±6.78	82.22±7.79	-7.275	0
	Experiment Class 2	74.23±7.97	79.33±8.52	4.349	0
	Control class	74.06±6.54	75.40±7.31	-2. 02	0.053
800 1000 meters	Experiment Class 1	71.78±7.54	80.78±7.12	-9.622	0
	Experiment Class 2	75.10±8.17	78.83±5.48	-4.777	0
	Control class	73.81±7.84	74.22±6.93	-1.223	0.232

Table 3.2: Comparison and Analysis of Physical Fitness of Students in the Experimental Class and the Control Class before and after the Experiment (2)

index	group	Before the experiment	After the experiment	T	P
		Mean ± standard deviation	Mean ± standard deviation		
sit-and–reach	Experiment Class 1	72.71±7.08	79.19±8.49	-10.74	0
	Experiment Class 2	72.87±8.9	77.43±7.39	-4.747	0
	Control class	73.75±7.64	74.06±6.47	-0.54	0.594
Crossover running	Experiment Class 1	72.41±9.08	78.91±8.26	-9.464	0
	Experiment Class 2	75.63±8.58	75.80±7.71	-0.314	0.757
	Control class	73.59±8.03	74.06±7.48	-1.161	0.256

them become more open and willing to change their original cognition. Reflection after class is very important, it is a summary of learning activities before, during, and after class. On the one hand, students reflect on the thinking process of understanding a concept or problem through group learning activities, thereby achieving the goal of self-awareness. On the other hand, we should integrate classroom and learning resources, reflect on the new gains and other more beneficial information generated by teacher-student interaction, in order to achieve better teaching results.

3. Results and Analysis.

3.1. Comparative analysis of physical fitness between experimental and control class students before and after the experiment . Different types of physical activity before and after the experiment were evaluated by means of experiment and physical examination. On the basis of trial 1, Trial 2 and control group, the movements of the two groups were evaluated. Specific results are listed in Table 3.1, Table 3.2, and Figure 3.1 [8].

The results showed that the P value was less than 0.05 in 50 meters, sitting position, 800/1000 meters, turning and cross-country driving. In other words, in 1 and 1, the subjects showed significant differences in all five personality traits, and their average scores improved significantly.Students in Experiment 1 are able to do strenuous exercise in the last part of each level and have a clear understanding of the effects of exercise. They are able to prepare well before testing, so the overall health of Test 1 is best. Therefore, there are significant differences in physical exercise before and after the experiment of 50 meters, 10 meters, supine, 800/1000 meters, and bending forward. The average score is good, but there is no significant difference in cross-

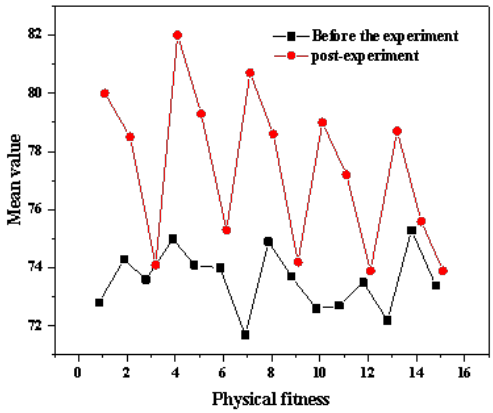

Fig. 3.1: Comparison and Analysis of Physical Fitness of Students in the Experimental Class and the Control Class before and after the Experiment

sectional work. The reason is that some students do not understand the law of the intersection and are prone to mistakes, resulting in a decline in the average number of students in the class. The P-values of each factor were significantly higher than 0.05 for 50 meters, sitting position, pulling, 800 meters, turning and intersection, respectively. The reason is that some students almost have no time to exercise except exercise for one time in the physical education class. In addition, students are not ready for games and exams, which makes some students not reach their best grades. Finally, there was no significant difference in five physical exercises before and after.

3.2. Comparative analysis of deep learning abilities between experimental and control class students before and after the experiment. Through experiment, conduct in-depth research on each class of students before and after experiment, and assess whether there are significant differences in the depth of study among students in Experiment 1, Experiment 2, and the control class before and after experiment. The specific results are shown in Table 3.3 and Figure 3.2.

In experiment 1 and experiment 2, the deep learning performance of the control class students before and after the experiment was tested by t test. According to the analysis results, the pre-test, single-stage setting, multi-stage setting, setting equilibrium and the degree of abstraction were all less than 0.05, indicating that there were significant differences between the two groups before and after the test. Through six months of study, through reverse teaching design and deep learning strategies such as questioning, students have more understanding of basketball, but also deepen their understanding of basketball knowledge, and promote their higher level of thinking. The final experiment showed that the students' cognitive ability improved in experiment 1 [9-10]. The P-values of Search 2 of the first sample level, single sample point, and multi-sample level are all less than 0.05, while the P-values of sample sample lead level and abstract level after all are more than 0. 05. This shows that there are differences among the pre-test level, single point model, and multi-level model of the students in Experiment 2, and there is no significant difference between the continuous model of the consecutive model and the abstract model level. The reason why after practicing flip course without in-depth study, students may have their own idea of grasping skills and ideas, but they still can't combine their present study with previous study and can't express themselves in their own language.As a result, students do not receive higher levels of education. The P values of the front and point levels of the model are < 0.05, while the P-values of multilayer model, sequence model and the next level model are all <0.05.This means that there is a significant difference between the students' management of the abstract continuity at three levels before and after the experiment at the model level before and one model point, while there is no significant

Table 3.3: Comparison and Analysis of Physical Fitness of Students in the Experimental Class and the Control Class before and after the Experiment (2)

index	group	Before the experiment	After the experiment	T	P
		Mean ± standard deviation	Mean ± standard deviation		
Front structure level	Experiment Class 1	12.25±1.58	8.75±1.4	8.128	0
	Experiment Class 2	12.27±1.77	9.60±1.53	7.478	0
	Control class	12.41±1.63	9.81±1.52	6.815	0
Single point structure level	Experiment Class 1	11.41±1.33	8.84±0.93	11.917	0
	Experiment Class 2	12.03±1.72	10.00±1.12	6.507	0
	Control class	11.81±1.52	10.56±1.12	3.899	0
Multi point structure level	Experiment Class 1	9.84±1.26	11.19±1.34	-6.295	0
	Experiment Class 2	10.20±1.11	10.90±1.14	-4.027	0
	Control class	9.88±1.14	10.16±1.09	-1.51	0.142
Parallel structure level	Experiment Class 1	8.59±1.2	11.22±1.3	-9.159	0
	Experiment Class 2	9.30±1.16	9.60±1.05	-1.202	0.241
	Control class	9.06±1.49	9.44±0.92	-1.418	0.168
Expand the level of abstract structure	Experiment Class 1	9.44±1.12	13.91±1.13	-16.592	0
	Experiment Class 2	9.57±1.02	10.00±1.03	-1.607	0.12
	Control class	8.94±1.12	9.34±1.14	-1.367	0.183

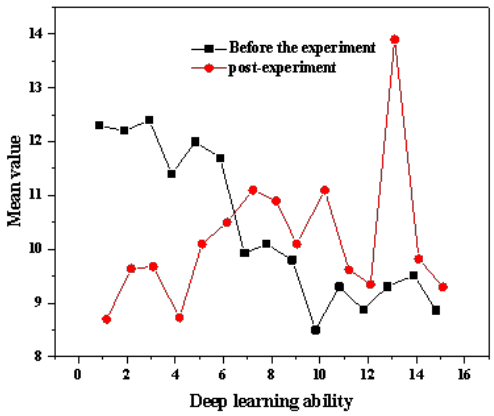

Fig. 3.2: Comparative analysis of deep learning abilities between experimental and control class students before and after the experiment

difference between the different model levels and the corresponding model levels. The Committee notes with appreciation, among other things, the efforts of the State party to ensure full commitment to the implementation of the Convention on Privileges and Immunities, as most students have a better understanding of the subject matter after receiving regular education.Therefore, traditional teaching can't let students take part in deep learning.

4. Conclusion. Using design strategies such as "reverse teaching design" and "inquiry based teaching", combined with pre class self understanding, in class sharing understanding, and post class reflection understanding, students are encouraged to think around inquiry questions, enhance their higher-order thinking abilities,

and achieve the goal of deep learning. Through teaching experiments, one-way ANOVA, multiple comparisons, and paired t-tests were conducted on the data of relevant indicators. The results show that there are significant differences in physical fitness between Experiment 1 and Experiment 2 before and after experiment, with significant differences in four aspects: 50 meters, supine/supine support, 800-1000 meters, and forward bending in sitting. There is no significant difference in horizontal run; There are no differences between the control groups; Experiment 1 shows the difference of the ability to learn deeply; At the levels of sample pretreatment, single point sampling and multiple samples, there were obvious differences in the sample pretreatment level of experiment 2, but there was little difference between the pretreatment level of continuous sample and that of continuous sample. However, there was no significant difference between the control group and the single mode group in the three periods of multi-mode, parallel mode and continuous mode. The traditional classroom teaching method can improve students' exercise ability, volleyball ability, comprehensive ability, and self-study ability, but the teaching method is not significant and can not reach the different level; The most important thing is the classroom teaching model based on deep education. Experiments show that this teaching model can improve students' physical quality, improve their basketball skills and use abilities; and so on. It can improve students' self-study motivation, improve their sense of belonging and level of understanding, and achieve the goal of promoting deep learning.

REFERENCES

[1] Wang, J., Wu, B., Jiang, Y., Yuan, Y., & Leung, M. F. (2022). Research on prediction of physical fitness test results in colleges and universities based on deep learning. Mathematical Problems in Engineering: Theory, Methods and Applications.35(6),46

[2] Wang, H., Zhou, J., Zhuojia, L. I., & Tao, Y. (2023). The development and changes of triple jumpers' balance board combined with special training by deep learning approach. Journal of Mechanics in Medicine and Biology, 23(04),2134.

[3] Fauzi, I., & Armaidi, A. (2023). Curriculum 2013, physical fitness, sma malemputra aceh besar. Sport Pedagogy Journal.879(234),790

[4] Jiao, C. (2022). Recognition of human body feature changes in sports health based on deep learning. Computational and Mathematical Methods in Medicine, 2022(780),78.

[5] Hui, Z., Jing, C., & Taining, W. (2022). Research on simulation analysis of physical training based on deep learning algorithm. Scientific Programming, 2022(46), 1-11.

[6] Xu, Y., Yao, L., Liao, S., Li, Y., Xu, J., & Cheng, F. (2022). Optimal frequency regulation based on characterizing the air conditioning cluster by online deep learning. CSEE Journal of Power and Energy Systems, 8(5), 1373-1387.

[7] Qian, Q., & Sang, Q. (2022). No-reference image quality assessment based on automatic machine learning. ITM Web of Conferences.89(79),24

[8] Islam, S., Kanavati, F., Arain, Z., Costa, O. F. D., Crum, W., & Aboagye, E. O., et al. (2022). Fully automated deep-learning section-based muscle segmentation from ct images for sarcopenia assessment. Clinical Radiology, 77(5), e363-e371.

[9] Qi, K., Chai, H., Wang, Q., & Sun, J. (2022). A dynamic interaction assessment method for disaster management based on extended dematel. Emergency Management Science and Technology, 2(1), 1-10.

[10] Zjavka, L. (2022). Power quality statistical predictions based on differential, deep and probabilistic learning using off-grid and meteo data in 24-hour horizon. International journal of energy research67(8), 46.

Edited by: Hailong Li
Special issue on: Deep Learning in Healthcare
Received: Jan 25, 2024
Accepted: Mar 8, 2024