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## Experimental research into the application of the method of education by images in the teaching of basic skills of playing football

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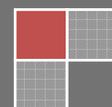
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### ABSTRACT

**Purpose:** to properly reform the routine teaching of football by following the modern teaching thinking and the teaching rules of football skills and tactics in combination with the method of physical education by images; a new teaching model is designed by referring to the advantages of the method of education by image, and the model is applied in teaching of the football skills and tactics to carry out an experiment for one semester. According to the experiment **Results:** this method may help the students to pick up the skills to play football, improve the teaching quality and accelerate the teaching process. **Conclusion:** by using the method of education by image in the teaching of football, and students may grasp the correct movement skills better and it may improve students' abilities to reasonably use the skilled movements.

### KEYWORDS

Teaching of football; Basic skills; Method of education by image; Experiment.



## INTRODUCTION

Doing exercises by image is defined as follows: various movements appear in the practitioners' brains consciously in the form of images, and to arouse their immediate feelings<sup>[1]</sup>. Psychologists think that it is a course of processing the information in the brain to study theories, and to study the movement skills may be understood as the following: the stimulation course; the course of control by the central nervous system; the movement course. The three courses are closely associated with each other. The method of doing exercises by images may help to make the kinesthetic imagery clear, accelerate the learning of the movement concepts, accelerate the formation and improvement of the movement skill, and improve the movement quality and performance.

Football is one of the important content in P.E. teaching of students majoring in P.E. of universities, and the skill and tactics of football have the characteristics of diversity and complexity and so on.<sup>[2]</sup> In this paper, we try to break through the prior conventional teaching methods, apply the method of education by image and the routine teaching method harmoniously in the teaching of football according to the characteristics of the skills and tactics of football and their general rules in combination with the advantages of the method of education by image, and also carry out experiments and researches. We enhance the images of the skilled movements just established by using people's organs such as hearing sense, sense of sight and movements so that the students may have a clear and correct concept of the skilled movements to accelerate the formation of the skilled movements of playing football and improve the movements, aiming at exploring the best methods for teaching the football skills in universities.

## SUBJECTS AND METHOD

### Subjects

16 students from the optional special football class majoring in sports exercises of Grade 2012 of the P.E. School of Changchun Normal University are used as subjects in the experiment. The subjects are divided into two groups at random: the control group of 8 students and the experiment group of 8 students.

### Design of the experiment

#### Before the experiment

Before the experiment starts, the sportsmen selected (subjects in the experiment) are tested in terms of five representative quantitative indices that exert great influence on the basic quality of the bodies and the football performance. The test results prove no significant difference through T-test. (Refer to TABLES 1 and 2 for the results)

**TABLE 1 : Comparison of body quality between the experiment group and the control group ( $\bar{x} \pm sd$ )**

	Height (cm)	Weight (kg)	50meters (s)	Shot (m)	1000meters (s)
Experiment group	174.3 $\pm$ 3.9	69.5 $\pm$ 6.6	7.8 $\pm$ 0.6	8.5 $\pm$ 2.9	246 $\pm$ 17
Control group	173.8 $\pm$ 4.1	67.9 $\pm$ 5.8	7.9 $\pm$ 0.2	8.4 $\pm$ 5.6	245 $\pm$ 21

**TABLE 2 : The basic information on the skill and competition tests of the experiment group and the control group before the experiment ( $\bar{x} \pm sd$ )**

Test items	Ball juggling (20 points)	Ball dribbling (20points)	Passing balls by the inner side of the feet (20 points)	Shooting (20 points)	Competition (20 points)
Experiment group	12.39 $\pm$ 2.86	11.41 $\pm$ 2.55	12.49 $\pm$ 2.62	11.16 $\pm$ 2.93	10.26 $\pm$ 3.69
Control group	13.16 $\pm$ 2.67	11.22 $\pm$ 2.01	12.53 $\pm$ 2.19	11.90 $\pm$ 3.26	10.79 $\pm$ 2.88

### Stimulation

(1) Teaching experiments are carried on the experiment group and the control group by using the method of teaching by images and the routine teaching methods under equal conditions (for instance, venue, instruments and content and so on) respectively for one semester.

(2) Before classes, images showing the skilled movement course or schematic drawings showing tactics are prepared based on the content to be taught and are distributed to the students from the experiment group, are explained and demonstrated to the students so that the teachers' correct images or the skilled movements in the images or video reoccur in the students' brains by virtue of the imagination to initially establish clear movement images and basic movement concepts in their brains.

(3) While the students do exercises according to image, teachers shall guide the students in concise and clear languages, and at the same time ask the students to remember the same languages, and to have a prompt of and reinforce the

corresponding movement images by virtue of the same languages. For instance the language for making a place kick by the front of the back of the foot: approaching → Support → swinging back → shooting the ball → following through. The students will imagine according to the language and repeat the image of the exercises again and again

(4) After the image exercises are done many times, the students are asked to do exercises with their bodies. The students are asked to convert the information obtained from hearing and seeing into physical exercise information to gradually improve students' abilities to control kinesthetic senses and muscle feelings to form the linkage of cognition-movement. At this moment, teachers shall guide the students to experience the muscle feelings consciously, and do kinesthetic exercises based on image, and gradually improve the correctness of the skilled movements and develop great feelings of the bodies about the movements.<sup>[3]</sup>

(5) Every time when the students do exercises based on image, the teachers shall arouse the students to pick up the experience of kinesthetic exercises while they succeed in physical exercises and duplicate the images for reinforcement, and do exercises by image so that the movements may be more vivid, true and experience the same by bodies.

(6) Every time before and after the students do physical exercises, they shall do image exercises 1-2 times; while new movements are practiced, the procedures for teaching by image are as follows in order to help the students to form complete movement images and initially grasp the movements: observing the demonstration, listening to the explanation → Image exercises ↔ body exercises; at this moment, the teachers shall play a role in guiding, and give prompt to and induce the students to duplicate the normalized movements and the tactics combination in concise languages. When the movements are reviewed and reinforced, the procedures of teaching by image are as follows: Image exercises ↔ Body exercises → Image exercises of key movements ↔ improving the movements in body exercises. At this moment, students shall do exercises independently, besides asking the students to duplicate the key points and the images of the movements, primarily the timing, the time and space for the movements and the feelings about the movements, the teachers shall give feedback immediately according to the students' movement effects.

(7) Teachers shall arrange students' image exercises after class, and arrange the students to do image exercises for 3-5 minutes before going to bed and after getting up

(8) After completion of the semester, the double-bind method is used for testing the experiment group and the control group in respect of the comprehensive application of the basic skills, the basic theories, and basic tactics of football.

## RESULT AND DISCUSS

### Research results

The basic skill performance and the basic teamwork performance of the experiment group are higher than those of the control group with very significant difference ( $P < 0.05$  or  $P < 0.01$ ); the experiment group have won all of the six competitions in teaching. (Refer to TABLES 3 and 4)

TABLE 3 : Contrast and analysis of testing data of the experiment group and the control group ( $\bar{x} \pm sd$ )

Test items	Ball juggling (20 points)	Ball dribbling (20points)	Passing balls by The inner side of the feet (20 points)	Shooting (20 points)	Competition (20 points)
Experiment group	18.39 $\pm$ 1.15	17.32 $\pm$ 2.63	17.6 $\pm$ 2.56	17.05 $\pm$ 2.95	7.26 $\pm$ 1.67
Control group	14.56 $\pm$ 2.31**	14.89 $\pm$ 2.99*	14.03 $\pm$ 2.77**	14.46 $\pm$ 2.81**	13.52 $\pm$ 2.79**

Note: \*Means comparison between the experiment group and the control group  $P < 0.05$  ; \*\* comparison between the experiment group and the control group  $P < 0.01$

TABLE 4 : Evaluation performance comparison table of basic teamwork of attack between the experiment group and the control group (10 points)( $\bar{x} \pm sd$ )

Items of test	Experiment group	Control group
Teamwork of two passing one	7.89 $\pm$ 0.85	6.85 $\pm$ 0.11**
Teamwork of attacking on the side	7.77 $\pm$ 0.69	7.16 $\pm$ 0.36**
Teamwork of attacking in the middle	7.50 $\pm$ 0.53	7.03 $\pm$ 0.29*

Note: \*Means comparison between the experiment group and the control group  $P < 0.05$  ; \*\* means the comparison between the experiment group and the control group  $P < 0.01$

## Analysis of results

### Doing exercises by image is helpful for the students to establish correct movement image

The standard for evaluating the experimental teaching is based on the correctness of students' grasping and applying and their familiarity with the skilled movements learnt according to the requirements of our football syllabus. Upon completion of the teaching experiment, the statistic results of the five skill test performances of football are as follows: all of the performances of the experiment group are higher than those of the control group with significant difference ( $P < 0.05$  or  $P < 0.01$ ), it means that under equal conditions, the teaching method of the experiment group is better than the conventional teaching model. Some P.E. teachers cause the demonstrations of some movements difficult to complete or defective due to the factors of age, age limit for having sports, difference in individuals and others in conventional teaching course. However, the method of doing exercises by images in combination with multimedia may fully demonstrate the skilled movements of high level athletes at various speeds from various angles<sup>[4]</sup>. By using the combination of methods, the key points and difficult points may be highlighted, and it is very helpful for students to grasp new skilled movements. According to the test results, the method of doing exercises by images applied on the experiment group may help to significantly improve the teaching quality and is effective primarily because of its function of accelerating the formation of movement skills.

### The method of doing exercises by images is helpful for the students to be mindful of the whole competition

The method of doing exercises by images exerts direct influence on individuals' basic skills and the middle stages of the competition, and eliminates the following defect and improves students' abilities to use skills, and is helpful for them to be mindful of the whole competition : from grasping skills to partial teamwork, and then competitions in teaching.

In conventional teaching model, as many students are football beginners, it is difficult for them to correctly understand how to apply the skilled movements learnt in partial teamwork and whole teamwork in class due to their limited skills, and it is also very difficult to clearly explain the coaches' true intentions even by using such teaching tools as the sand table. However, by using the method of doing exercises by images in combination of the true examples, some complex teamwork may be vividly demonstrated to the students, and change the complex movements into simple ones to arouse students' interest in learning.

### The method of doing exercises by images may improve students' abilities to learn independently and teach the students according to their aptitudes

By doing exercises by images, the effects of hearing and sight may be improved and the objects may be felt accurately and completely through a series of physiological and psychological processes, such as sight, hearing, remembering, analyzing and thinking. The purpose of doing exercises by images is to provide positive stimulation for establishing correct images for doing exercises by developing students' abilities to carefully observe to obtain accurate images about movements and remember the movements immediately<sup>[6]</sup>. Rich teaching resources with the aid of internet, personalized teaching plans and cases not only support students' independent study by exploration, but also allow each student to create a study environment they desire, and look for what they want to learn, grasp the skills of having sports in a way suitable for them and improve their body quality comprehensively.

### Doing exercises by images may help to promote information feedback

The most important advantage of doing exercises by images is to obtain the information fed back immediately, namely, the great effect of doing exercises by images is directly attributed to the application of information feedback. Students adjust and control their movements mainly by the feedback of the sight, hearing, and the bodies' feelings while learning the skills of having sports<sup>[6]</sup>. Doing exercises by images may fully arouse students' several cognitive elements such as feeling, remembering, thinking and others to actively make use of information feedback to reinforce adjustment and control to coordinate the movements more accurately.

## CONCLUSIONS

1 Doing exercises by images meets students' cognitive characteristics, and is helpful for students to grasp correct skilled movement concepts. The facts prove that the experiment group's basic skills, basic tactics and abilities to do exercises are all higher than those of the control group. It means that at the beginning of learning football, the method of doing exercises by images is an effective way of reforming the method of teaching and improving the teaching effect.

2 Students' self-exercise skills may be effectively improved their confidence may be improved by using the information feedback theories while the method of doing exercises by images, and is very helpful for accelerating the grasping of the learning methods of football skills.

3 The method of doing exercises by images may arouse students' enthusiasm and initiative to learn, and is helpful for the students to understand the key points of skilled movements more deeply and may help to improve students' abilities to reasonably apply skills while developing their abilities of learning independently.

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