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Experimental research into the application of feedback method in teaching of basketball

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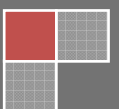
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ABSTRACT

In teaching of basketball skills, teachers use the principles and methods of modern sports control theory to maximize the control over the teaching of basketball skills so as to improve the teaching quality and meet the requirements of the overall teaching goals. According to the results of the experiment of applying the feedback teaching method in teaching of basketball, the basketball examination performance of the students from the experimental group is better than that of the control group with significant difference between the two groups in terms of their technical evaluation performance. Conclusion: the teaching using the feedback teaching method is more effective than routine teaching, and the feedback teaching is feasible in basketball classes and is worth promoting.

KEYWORDS

Teaching of basketball; Feedback method; Teaching; Experiment.



INTRODUCTION

The feedback method is a teaching method that is established by using the system theory, information theory, and the control theory^[1]. Feedback teaching method is a comprehensive teaching method applied in a harmonious and cooperative environment, in which the teachers guide the students to study systematically aiming at applying the knowledge and developing abilities and improvement of the teaching quality in classroom and highlighting the timeliness of information exchange and information feedback between teachers and students^[2]. It advocates the diversification of information transmission in modern sports teaching, and requests students to study following “exploration-remembering-creating”.

Sport teaching is an information transmission process of teaching by using the feedback method. By using this method, we can learn about the students' knowledge and skill grasped during study, and adjust the teaching methods and improve the teaching quality specifically so that the teaching means tend to be more scientific. The feedback method in teaching of basketball skills is defined an indispensable teaching method as follows: to equip students and teachers with basketball knowledge and various information on skills and technique, constantly find and solve problems in exchange of information between teachers and students; promote the improvement of the quality of basketball teaching^[3]. In this paper, the feedback teaching model is designed in combination with the features of basketball teaching to discuss the feasibility and effect of the feedback teaching method in teaching of basketball.

SUBJECTS AND METHOD

Subjects

Class 1 (19 persons) and Class 2 (21 persons) of Grade 2012 from Jilin Sports University with basketball as their special optional basketball courses. Students from both classes are male students, and one of the classes is fixed as a control group at random and a teaching experiment for one semester is carried out on the group.

Content of the experiment

To study how to dribble the basketball during moving, pass and catch the basketball in front of the chest with both hands during moving, and the skills of underhand pitch under equal conditions (teachers, student base, content of teaching, schedule of teaching, objective of teaching, hours and venue).

Method of experimentation

The experiment group: the teachers explain and demonstrate the difficulty and key points of the movements involving skills; such institutive teaching means as watching the basketball teaching videos are used, and students are given 2-3 minutes to think independently to stimulate the students' initiative and creativity; teachers give instructions and correct students' wrong movements, put forward the requirements for movement quality involving skills by means of excitation mechanism based on the problems fed back by the students during exercises in regard to action, postures, expressions and emotions. The control group: After the teachers give an explanation and demonstration, the students do exercises following the method arranged by the teachers, and just one instruction is given during exercises, and then control teaching without feedback is carried out.

The skill evaluation results of dribbling the basketball during moving, passing and catching the basketball in front of the chest with both hands during moving, and underhand pitch are statistically treated.

RESULT AND DISSCUSS

Results of experimentation

Comparison results of skill evaluation performance between the experiment class and the control class

TABLE 1 : Comparison of skill evaluation performance of linear dribbling between the experiment class and the control class ($\bar{x} \pm sd$)

Group	Sample	Before the experiment	After the experiment	Difference
Experiment class	19	59.23±12.15	77.35±15.59	18.12
Control class	21	58.93±13.96	70.30±16.01**	11.37

Note: **Highly significant difference between the control class and the experiment class after the experiment $p < 0.01$

TABLE 2 : Comparison of skill evaluation performance of passing and catching the basketball in front of the chest with both hands during movement between the experiment class and the control class ($\bar{x} \pm sd$)

Group	Sample	Before the experiment	After the experiment	Difference
Experiment class	19	59.65±13.61	79.62±16.27	19.97
Control class	21	60.12±12.06	71.86±18.59**	11.74

Note: **Highly significant difference between the control class and the experiment class after the experiment $p < 0.01$
TABLE 3 : Comparison of skill evaluation performance of underhand pitch during movement between the experiment class and the control class ($\bar{x} \pm sd$)

Group	Sample	Before the experiment	After the experiment	Difference
Experiment class	19	58.67 \pm 13.68	75.29 \pm 16.67	16.62
Control class	21	58.32 \pm 11.02	71.31 \pm 15.83*	12.99

Note: **Significant difference between the control class and the experiment class after the experiment $p < 0.05$

Seen from TABLES 1, 2 and 3, there is significant difference in the three skill evaluation performances between the experiment class and the contrast class after the experiment. The average difference of the experiment class's three skill evaluation performances before and after the experiment is 18.12 points, 19.97 points and 16.62 points respectively, and those of the control class are 11.37, 11.74 and 12.99, respectively. It can be clearly seen that the performances of the two classes before and after the experiment have been significantly improved with significant difference. It means that the teaching effect of the experiment class is more significant than that of the control class.

Comparison results of the three standard-reaching performances between the experiment class and the control class

Seen from TABLES 4, 5 and 6, the three standard-reaching performances of the experiment class are significantly improved after the experiment teaching with the increments of 22.53 points, 23.78 points and 19.56 points. Through the testing, the difference is very significant ($P < 0.01$ or $P < 0.05$); the increments of the three standard-reaching performances of the control class also significant; however, seen from increments of the performances of the experiment class and the control class (difference between that before the experiment and after the experiment) and the t-testing values, the three performances of the two classes are all significantly different. It means that the effect of applying the feedback method to basketball skill teaching is more significant than that of applying the conventional teaching means.

TABLE 4 : Standard-reaching performances of linear dribbling the basketball between the experiment class and the control class

Group	Sample	Before the experiment	After the experiment	Difference
Experiment class	19	56.13 \pm 12.02	78.66 \pm 15.21	22.53
Control class	21	56.96 \pm 13.68	70.92 \pm 17.22 **	13.96

Note: ** Highly significant difference between the control class and the experiment class after the experiment $p < 0.01$

TABLE 5 : Comparison of Standard-reaching performances of passing and catching the basketball in front of the chest with both hands during moving between the control class and the experiment class

Group	Sample	Before the experiment	After the experiment	Difference
Experiment class	19	55.59 \pm 13.12	79.37 \pm 17.89	23.78
Control class	21	54.06 \pm 14.46	72.07 \pm 16.97**	18.01

Note: ** Highly significant difference between the control class and the experiment class after the experiment $p < 0.01$

TABLE 6 : Comparison of standard-reaching performances of underhand pitch during moving between the experiment class and the control class

Group	Sample	Before the experiment	After the experiment	Difference
Experiment class	19	55.73 \pm 12.68	75.29 \pm 19.61	19.56
Control class	21	56.11 \pm 11.28	71.31 \pm 15.83*	15.20

Note: ** Highly significant difference between the control class and the experiment class after the experiment $p < 0.05$

Seen from the statistic results in the TABLE above, the skill evaluation performances and the standard-reaching performances of the two classes in regard to the three indices measured are significant in difference ($P < 0.05$ or $P < 0.05$), and the skill evaluation performance and the standard-reaching performances of the experiment class are better than those of the control group. It means that the feedback method used for teaching skills of basketball may arouse people's enthusiasm and may help to find errors and use proper correction methods to significantly improve the teaching effects.

Analysis and discussion

The effect of the feedback method applied in teaching skills of basketball is better than that of the routine method and the feedback method may generate significant experiment effect.

Seen from the angle of the control theory, in teaching of sports, teachers and students are the two constituents of the teaching system, which is a closed information system. The relationship between teachers and students is controlling-controlled relationship, and the relationship of information input and output, and what is exchanged between the students and teachers is information, and only in this way, the teaching task may be successfully completed. In teaching, teachers input the knowledge and skill about basketball to the students through interpretation, demonstration, showing pictures and others according to the teaching plans and schedules. However, the students receive the information output by the teachers through observation, listening, remembering, thinking analysis and practice. Teachers learn about and correct their teaching effects immediately and accurately during teaching so that students may be aware of, improve and enhance in order to improve the teaching quality.

The application of the feedback method to the teaching of basketball skills is summarized into the two aspects: the first is the extent of understanding the concepts of basketball movements involving skills and technique, and the ability to grasp and apply the technique and skills of basketball^[4]; the second is the goals of, attitudes toward, interest in learning basketball, and teachers' teaching level and feedback and so on.

The feedback methods that teachers generally use in teaching of basketball skills include the following: positive feedback method: the increment of influence of input of system elements on the output in feedback. That is to say, the course of outputting skill information by the teachers is the course of inputting skill information to the students. The teaching effect is affected by the following: the teachers' abilities to explain and demonstrate and the appropriateness and the pertinence of teaching means during teaching, students' sight, hearing, feeling, thinking analysis and ability to do exercises repeatedly and so on.^[5] Negative feedback method: decrement of the influence of the input system on the output system. The teaching course is controlled by using difference, and this feedback method is often used in sports teaching. Teachers need to use such teaching means as observation, asking questions, skill evaluation, reaching standards and so on to learn about students' understanding of the movements, and the problems with their grasping and application of the skills, immediately improve the teaching method, eliminate the factors of interference. In regard to the negative feedback method, information is passed through languages, in particular at the detailed stage of grasping the skills, the function of languages shall be enhanced. So the teachers shall be able to express in accurate and concise languages. Self-feedback method: students compare, improve and enhance the movement skills purposefully and specifically through reading materials about basketball, watching basketball matches and doing exercises after classes to constantly improve enhance and improve the skills. The choice of the methods mainly depends on the students' interests in and conscientiousness of basketball.

CONCLUSIONS

Feedback method is one of the important methods for teaching basketball. As long as the teachers carefully study and correctly use the method, the teachers' role in guiding and students' main role will be fully played, and students' thinking abilities will be developed, and their enthusiasm and creativity will be aroused to accelerate the pickup of sports skills; teachers may control the whole course of basketball teaching well to improve the quality of basketball teaching.

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