

Analysis of Factors Influencing Students' Mastery of Technology in Billiards Teaching

Dongbing Liu

Military Sports Ministry, Heilongjiang Bayi Agricultural University (HLAU), Daqing, Heilongjiang, 163319, China.

Abstract

It is an unprecedented attempt to add billiards into the physical education teaching project of the school, but billiards teaching is also of great significance to students. First of all, billiards can achieve the function of activating tendons and relaxing collaterals, strengthening the body and strengthening the body. At the same time, it is of great help to cultivate students' concentration and appearance. In order to better carry out billiards teaching, this paper will analyze various factors that influence students' mastery of technology in the teaching process, and find out the means to quickly improve students' technical proficiency.

Keywords

Billiards teaching; Master technology; Factor analysis.

1. Research Objects and Methods

1.1. Research Objects

In terms of research objects, all the students involved in the experiment in this paper were school students, and the grade and age were controlled in the range of plus or minus 0.5 years old, a total of 100 person-times, and the proportion of males and females was 45:55, respectively.

1.2. Research Methods

True reliability, in order to ensure that research study in the process of the shot process of all the students for the video, later have professional teachers to repeatedly watched the video statistics, as well as the related literature reading, and work out three experimental teaching project are: linear ball, bounce the ball, contraction, each shot means a total of five times, some of the mistakes in statistics to find out the factors influencing the students grasp the technology and analysed.

2. Result Statistics and Analysis

2.1. Statistics and Analysis of Linear Ball Results

In billiard ball movement, the straight ball is one of the most basic techniques, but other techniques can also be seen as an extension of the straight ball technology. As the simplest technology, if students have learning difficulties, it will have a great impact on students' confidence. In order to make sure that the cue ball is in line with the cue ball and the bag, three points should be formed between the cue ball and the ball bag in order to make sure that the cue ball is in line with the bag by hitting the cue ball in a straight direction[1]. In the process of straight-line ball teaching, the most common mistakes are body position error, hitting point error, wrist and elbow position error and club-head pointing error respectively. The chart below shows the specific number of errors in 5 shots.

Hit the ball number	Body position error	mistiming	Wrist elbow error	Pole head pointing wrong
1	17	34	46	70
2	5	35	41	65
3	5	34	31	44
4	5	27	36	45
5	3	21	32	33

Through the shot result analysis shows that when conducting straight shot at, the attention of the students tend to be caused by the excessive attention to take action and its not standard, a body position when the body stance has not standard, the possibility of all subsequent action there is an error will increase naturally.

Among the errors in the subsequent hitting points, the most correct hitting point of the straight ball is the center point of the cue ball, but in the actual hitting process, some students ignore this point. When hitting the ball, they hit the offset point of the cue ball, so that the cue ball will rotate in the process of movement[2].

Finally, a relatively large part of the students' problems do not come from the aiming and positioning steps of the ball, but from the exertion stage. After repeatedly watching the video of students hitting the ball, it was found that the influence was caused by the mistake of elbow wrist. It was precisely because of the excessive force of elbow wrist that the cue ball had too much force and changed the track.

2.2. Statistics and Analysis of Rebound Ball Results

Bounce ball, as a technique often used in billiards competition, is also an essential teaching item in billiards teaching. Only through the teaching of rebound ball can students really feel the happiness of billiard ball movement. Whether the rebound ball can be successful or not is closely related to the calculation of Angle, the control of hitting force and the reasonable application of the bar method. In the calculation of Angle, the factors to be calculated include incidence Angle, normal line and reflection Angle. As one of the influencing factors, some boys can't control the strength, which leads to the deformation of wrist movement and the wrong Angle of the shot, which leads to the failure of the shot. To the result of statistics, the rebound is also 5 shots experiment was carried out, and linear ball, bounce the ball experiment 5 shots of the first two respectively for the first two cue ball and the ball position for normal ipsilateral, after twice hitting cue ball and the ball is found in the opposite side, and in the last shot, you need to use the means of setting lever to focus the chromosphere, the chart below will show 5 shots of the specific number of errors occur[3].

Hit the ball number	Angle calculation error	Hit the ball too hard	Use the error bar method
1	78	30	7
2	64	20	2
3	62	34	6
4	60	25	5
5	57	36	14

Through the analysis of the hitting results, it can be seen that the most common mistake made by students when they hit the rebound ball is that the movement direction of the colored ball is wrong due to the wrong Angle calculation, so that the colored ball cannot enter the bag according to the predetermined route.

At the same time, in terms of batting force, excessive batting force is also a common problem. Although the difficulty set for each shot is different and the batting method is different, the statistical results of the above chart show that a considerable number of students will overexert themselves in each shot.

Finally, in the wrong use of the pool method, although there are fewer errors in the use of the pool method in the five shots, the use of the pool method is a kind of common sense error of students billiards, in order to really do a good job in billiards, the use of the error of the pool method should be completely eliminated[4].

2.3. Statistics and Analysis of Shrinkage Results

Shrinking the ball is a technique that needs to be used for special operation in billiards competition and can be used as an advanced training method in billiards teaching. Through the teaching of ball shrinking, students can learn the real billiards technology, which is very helpful to improve their concentration and body coordination ability. There are many factors that can affect the process of shrinking the ball, including the speed of the cue, the strength of the cue, the strength of the grip and whether the cue is level with the table. The slow speed of the cue ball will cause the rotation of the white ball due to its large mass, so it cannot produce the effect of shrinking the ball after hitting the colored ball. There are many students who worry about the strength of the cue ball, because they are not strong enough to have the effect of shrinking the ball. One time, you hit the base of the cue ball with a lot of strength, which will not achieve the goal of shrinking the ball but also cause the irregular jump of the cue ball. In terms of grip force, the ball will be hit slowly due to the excessive grip force, resulting in the slow ball speed and the inability to shrink the ball. Finally, whether the club and the table are horizontal or not, some students will raise the end of the club to hit the ball again in order to pursue greater strength. Although such a method will hit the ball with greater strength, it is also easy to form the effect of tying the ball. In order to make statistics on it, five shots were made in the teaching of ball shrinking and the number of demerits was recorded. The chart below shows the number of errors in the five shots.

Hit the ball number	Slow exit speed	Power is too large	Strong grip	Not level with the table
1	54	21	27	18
2	46	34	25	16
3	45	36	36	25
4	80	24	44	14
5	70	27	43	27

Through the analysis of the hitting results, it can be seen that the most common mistake made by students in the process of ball-shrinking teaching is that the driving speed is slow, and the driving speed will cause the cue ball can't get enough force and produce the driving effect.

At the same time, in terms of the hitting force, the problems are more obvious in the ball shrinking. Because the ball shrinking needs to control the force within a certain range, its force control should be more accurate to the education straight ball and rebound ball. According to

the figure, 30% of students will have excessive strength in 5 shots. Finally, in terms of the level of golf clubs, shrinking golf clubs is a habit that students should develop. However, according to the statistics in the chart, some students have neglected the importance of shrinking golf clubs, which is also a factor that should be paid attention to in the teaching of shrinking golf clubs.

3. Improving Teaching Level of Billiards

In order to improve the teaching level of billiards, firstly, students can be taught by means of multimedia assisted teaching. Teachers can use PPT and other teaching hardware to help students understand what should be paid attention to when hitting balls. We can also make use of the advanced Internet technology to establish group chat with students so as to ensure that students can consult timely when they have problems. Finally, students' learning results can be tested by in-class tests, and problems can be corrected in time.

4. Endnotes

Through the discussion of this paper, the influence factors of billiards teaching on students' mastery of technology are summarized and analyzed in the form of experiments, and the corresponding measures to improve students' level are put forward, in the hope of contributing to the popularization of billiards movement in Chinese schools.

Acknowledgements

Fund program:

1. Heilongjiang Bayi Agricultural University Talents Supporting Program (RRCPY201818).
2. Heilongjiang province philosophy and social sciences planning supporting co-construction projects(18TYE558).

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