

A Study of Application of Microteaching to Badminton as an Elective Course in Universities

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Abstract. The purpose of the study is to discuss, with those who are also interested in this field of research, the application of microteaching to badminton as an elective course in colleges and universities and solve the problems existing in the traditional way of badminton teaching. The subjects are the students in badminton elective course Class 1 and Class 2 of the year 2007 in Jinggangshan University. Such methods as literature, test, comparison, and mathematical statistics were used for empirical study of students' skill, teaching ability, and theoretical knowledge learning result. After experiment there was a growth of 14.93 points ($P < 0.01$) in the marks for the ability and skill of the students in the experimental group, their teaching ability marks growth is 26.87 points ($P < 0.001$), and their theoretical knowledge marks growth is 34.56 ($P < 0.001$). Our conclusion is: Microteaching can significantly improve students' skill, teaching ability, and theoretical knowledge learning results; traditional teaching approaches can bring slight improvement on the skill, teaching ability, and theoretical knowledge learning result of the students majoring in physical culture, and traditional teaching needs constant improvement; microteaching must be student-led, and we should, with the help of multimedia aids, constantly develop students' intelligence so as to achieve improvement on students' skills; microteaching, as a significant approach to development of students' teaching ability and skill, has opened up a new field for combination of teaching theories and practice and for development of students' basic teaching ability.

Keywords: microteaching; colleges and universities; badminton

1. Introduction

Microteaching was first proposed by Stanford University in the U.S.A. in 1963.^[3] It is a highly practical modern supplementary teaching approach in which students, in a environment with such multimedia equipment as cameras and projectors, take turns to play the role of teacher. Microteaching enables us to apply theories and teaching methods in books to specific sections of teaching, and this kind of process starts from specific details and practical steps and is fulfilled through the trainees' own practice. Microteaching can decompose and simplify complex classroom teaching, transplant the experimental approach in the field of science into the field of teaching and create a workable, easy-to duplicate, and easy-to- observe teaching and learning environment so that students can constantly improve and adjust their own learning process and achieve the purpose of improvement through training. Microteaching is a gradual process. Step-by-step achievement of shaping and improvement of behaviour through design for the entire process is in line with psychological laws of human behaviour. Use of microteaching helps to deepen the reform of classroom teaching and improve the quality of classroom teaching. Therefore, the use of microteaching will certainly accelerate the achievement of modernization of educational concepts, teaching contents, teaching methods and means and consequently accelerate the process of modernization in education. We, the authors, with the purpose of introducing the approach of Microteaching into badminton teaching in colleges and universities, present the topic here for discussion with those who are also interested in this field of study.

2. Subjects and Methods

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2.1. Subjects

The subjects are the students in badminton as elective course Class 1 and Class 2 of the year 2007 in Jinggangshan University. The 33 students in Class 1 serve as the experimental group (referred to as Group A hereafter) for whom microteaching was used, and the 32 in Class 2, as the control group (referred to as Group B hereafter) for whom traditional teaching method was used.

2.2. Research Methods

2.2.1. Literature Method

We used materials and information concerning microteaching from China Knowledge Network and Baidu. We also used a lot of relevant materials such as essays, monographs, books, etc. available in the library of Jinggangshan University.

2.2.2. Test Method

For the first 32 class hours (in the first 8 weeks) traditional teaching methods were used for both Group A and Group B, and for the next 32 class hours (in the second 8 weeks) microteaching was used for Group A and traditional teaching methods were used for Group B. A test was had by the students in both groups on their badminton skills, teaching ability, and theoretical knowledge about badminton at the end of the 8th week and the 16th week respectively.

2.2.3. Comparative Method

(1) Pre-experiment comparison between Group A and Group B; (2) Pre-experiment and Post-experiment comparison between Group A and Group B; (3) Pre-experiment and post-experiment comparison of Group A; (4) Pre-experiment and post-experiment comparison of Group B.

2.2.4. Mathematical Statistics Method

Computer statistical software SPSS 13.0 was used for statistical analysis of all data.

2.3. Main Contents of the Study

2.3.1. Badminton Skill Results

The skill of the students in both groups was tested with the same technology and standard before and after the experiment respectively. The skills that were tested are forehand high clear service and forehand high clear hit, 50 points each, out of 100 points.

2.3.2. Teaching Ability

Before and after experiment both groups were assessed in teaching ability. The assessment was done by three professional teachers and marks were given according to the microteaching ability evaluation criteria^[2] (1. amiable manner and relaxing classroom atmosphere; 2. upright standing posture that is natural and graceful; 3. proper amount of walking movement that is appropriate in speed and frequency; 4. rational use of gestures and with no unnecessary action; 5. appropriate changes in tone and rhythm that make the teacher language expressive of emotion). The total of marks was 100 points, and the mean was taken.

2.3.3. Examinations in Badminton Theoretical Knowledge

Before and after experiment both groups were given a close-book examination at the same time in theoretical knowledge, and the examination questions were randomly taken from the examination question bank. The total of marks was 100 points.

2.4. Experimental Setting

2.4.1. Micro-classroom

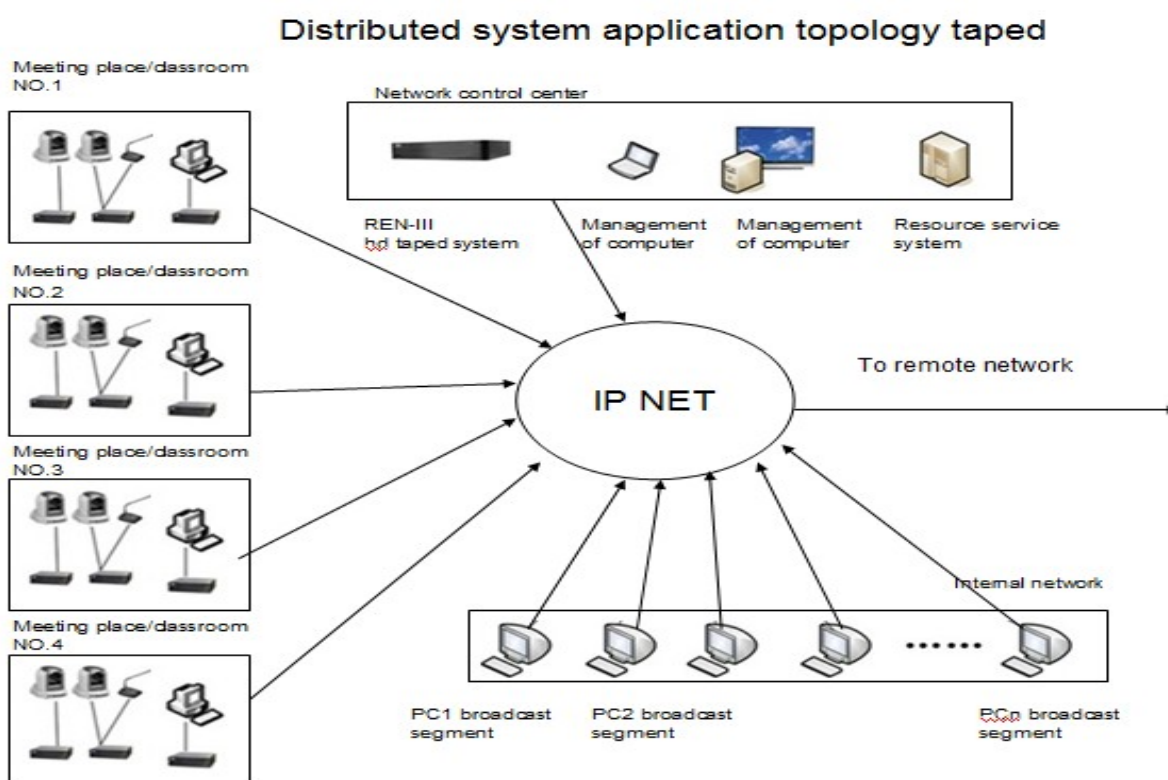


Fig. 1:Topological figure of application of distributed record and play system.

2.4.2. Pre-experiment Preparation

Get the teaching plan ready before the microteaching. Before the start of students' microteaching the teacher demonstrated for the students the whole process of microteaching so that students had a preliminary experience of microteaching method and consequently had less psychological pressure and nervousness that beginners usually have. Through this students could become clear about the function of microteaching in training students' psychology, skill, knowledge, talking and deportment, ability to organize teaching, etc. Multimedia equipment such as cameras and video players should be prepared.

2.4.3. Organizational Form for Experiment

We put the students into groups of 5 or 6. Then each student took turns to have a 10-minute microteaching of the content assigned by the teacher.

2.4.4. Evaluation of Experiment Feedback

Students, together with the teacher, repeatedly watched the live picture recording, gave mutual appraisal, and the teacher made a summarization. Let students take turns to act as teacher and student alternately so that every student could have a taste of working as a teacher and have a test to see whether, after a period of study and with full preparation, they had grasped the basic skills at badminton and whether they were able to handle practical operation with ease. In addition, each student had a chance to listen to other students' appraisal about his / her teaching as well as a chance to watch and appraise others' teaching. As a result, all students could get enlightenment from each other.

3. Analysis of Experimental Results

3.1. Analysis of the Comparative Difference between Group A and Group B in Skill, Teaching Ability, and Theoretical Knowledge before Experiment

After the first 8 weeks' traditional teaching of physical culture students in Group A and Group B have the same progress in achievement. Table 2 shows that the marks for the skill of the students in Group A before the experiment averaged 68.59 out of 100 points, and that of the students in Group B averaged 68.84 points with a slight difference of 0.25 points in favour of Group B. The two groups' t test $P > 0.05$, which shows there was no significant difference between the two sets of data; the marks for the teaching ability of the students in Group A before experiment averaged 55.36 points, and that of the students in Group B

averaged 56.01 points with Group B better than Group A by 0.65 points. The two groups' t test $P > 0.05$, which shows there was no significant difference between the two sets of data. The marks for the theoretical knowledge of the students in Group A before the experiment averaged 48.56 points, and that of the students in Group B averaged 47.97 points with Group A better than Group B by 0.59 points. The two sets of data's t test $P > 0.05$, indicating that there was no significant difference between the two groups.

Table 2: Comparison between Group A and Group B in Skill, Teaching Ability, and Theoretical Knowledge Marks before Experiment ($X \pm s$)

Group	N	Performance Skill	Teaching Ability	Theoretical Knowledge
		Results / points	Results / points	Results / points
A	33	68.59 \pm 13.74	55.36 \pm 18.79	48.56 \pm 17.73
B	32	68.84 \pm 13.96	56.01 \pm 19.01	47.97 \pm 18.03
P		$P > 0.05$	$P > 0.05$	$P > 0.05$

3.2. Analysis of the Comparative Difference between Group A and Group B in Skill, Teaching Ability, and Theoretical Knowledge after Experiment

After the second 8 weeks' teaching experiment (microteaching was used for Group A and traditional teaching for Group B) students in the two groups had achieved improvement of different levels. Table 3 shows that the marks for the skill of the students in Group A after experiment averaged 83.52 points, and that of the students in Group B averaged 70.23 points with Group A better than Group B by 13.19 points. The two groups' t test $P < 0.01$, which indicates a significant difference between the two sets of data. This shows that through microteaching, students can clearly see their own movements and try to improve themselves in the light of correct integrated movement skills, and hence the continuous improvement in their movement skills and the achievement of good marks in skill; the marks for the teaching ability of the students in Group A after experiment averaged 82.23 points, and that of the students in Group B averaged 58.55 points with Group A better than Group B by 23.68 points. The two t test $P < 0.01$, indicating a very noticeable difference between the two sets of data, which shows that through microteaching students could be composed at the platform and conduct teaching articulately and skillfully, so they succeeded in continual improvement in their teaching ability and achieved fairly good marks in teaching ability; the marks for the theoretical knowledge of the students in Group A after experiment averaged 83.12 points and that of the students in Group B averaged 57.23 points with Group A better than Group B by 25.89 points, the two t test $P < 0.01$, indicating a very noticeable difference between the two sets of data, which shows that microteaching could motivate students to grasp theoretical knowledge about badminton and improve their self-learning ability, and this greatly improves the theoretical level of students and ensures students achievement of very good marks in theoretical knowledge.

Table 3: Comparison between Group A and Group B in Skill, Teaching Ability, and Theoretical Knowledge Marks after Experiment ($X \pm s$)

Group	N	Performance Skill	Teaching Ability	Theoretical Knowledge
		Results / points	Results / points	Results / points
A	33	83.52 \pm 14.77	82.23 \pm 15.42	83.12 \pm 14.47
B	32	70.23 \pm 17.54	58.55 \pm 17.66	57.23 \pm 17.41
P		$P < 0.01$	$P < 0.01$	$P < 0.01$

3.3. Analysis of the Difference between the Pre-experiment and the Post-experiment Skill, Teaching Ability, and Theoretical Knowledge of the Students in Group A

After the second 8 weeks' teaching experiment students in Group A, for whom microteaching was used, achieved remarkable progress. Table 4 shows: the marks for the skill of the students in Group A before experiment averaged 68.59 points while their marks after the experiment averaged 83.52 points with the post-experiment marks better than the pre-experiment marks by 14.93 points, the two groups' t test $P < 0.01$, indicating a remarkable difference between the two sets of data; the marks for the teaching ability of the students in Group A before the experiment averaged 55.36 points while their marks after the experiment averaged 82.23 points with their post-experiment marks better than their pre-experiment marks by 26.87 points, the two t test $P < 0.01$, indicating a remarkable difference between the two sets of data; the marks for the theoretical knowledge of the students in Group A before the experiment averaged 48.56 points while

their marks after the experiment averaged 83.12 points with the post-experiment marks better than the pre-experiment marks by 34.56 points, the two t test $P < 0.01$, indicating a very noticeable difference between the two sets of data. There is a remarkable difference between the three sets of data, which indicates a great improvement in students' skill, teaching ability, and theoretical knowledge as a result of microteaching. This shows that microteaching, an approach of great importance in the teaching of badminton as an elective course in colleges and universities, is worthy of popularization.

Table 4: Comparison between the Pre-experiment and the Post-experiment Skill, Teaching Ability, and Theoretical Knowledge Marks of the Students in Group A ($X \pm s$)

GroupA	N	Performance Skill	Teaching Ability	Theoretical Knowledge
		Results / points	Results / points	Results / points
Before the experiment	33	68.59±13.74	55.36±18.79	48.56±17.73
After the experiment	33	83.52±14.77	82.23±15.42	83.12±14.47
P		$P < 0.01$	$P < 0.01$	$P < 0.01$

3.4. Analysis of the Difference between the Pre-experiment and the Post-experiment Skill, Teaching Ability, and Theoretical Knowledge of the Students in Group B

After the second 8 weeks' teaching experiment students in Group B, for whom traditional teaching was used failed to achieve ideal progress. Table 5 shows: the marks for the skill of the students in Group B before experiment averaged 68.84 points, and their marks after the experiment averaged 70.23 points with the post-experiment marks better than the pre-experiment marks by 1.39 points, the two groups' t test $P > 0.05$, indicating no significant difference between the two sets of data, which shows that traditional teaching is not ideal and needs adjustment; the marks for the teaching ability of the students in Group B before experiment averaged 56.01 points, and their post-experiment marks averaged 58.55 points with the post-experiment marks better than the pre-experiment marks by only 2.54 points, the two groups' t test $P > 0.05$, indicating no significant difference between the two sets of data, which shows that traditional teaching is no longer suitable for modern teaching and, therefore, needs appropriate changes; the marks for the theoretical knowledge of the students in Group B before experiment averaged 47.97 points and their post-experiment marks averaged 57.23 points with the post-experiment marks better than the pre-experiment marks by 9.26 points, the two groups' t test $P < 0.01$, indicating a significant difference between the two sets of data, but the progress in theoretical knowledge marks was not so significant as that of Group A. In short, traditional teaching needs to be constantly improved so as to be suitable for modern teaching.

Table 5: Comparison between the Pre-experiment and the Post-experiment Skill, Teaching Ability, and Theoretical Knowledge Marks of the Students in Group B ($X \pm s$)

GroupB	N	Performance Skill	Teaching Ability	Theoretical Knowledge
		Results / points	Results / points	Results / points
Before the experiment	32	68.84±13.96	56.01±19.01	47.97±18.03
After the experiment	32	70.23±17.54	58.55±17.66	57.23±17.41
P		$P > 0.05$	$P > 0.05$	$P < 0.01$

4. Conclusion

4.1. Microteaching can greatly improve students' skills, teaching ability, and theoretical knowledge.

4.2. Conventional approaches can bring slight improvement on skills, teaching ability, and theoretical knowledge marks of physical culture majors and traditional teaching needs constant improvement.

4.3. Microteaching must be student-led, and we should, with the help of multimedia aids, continuously develop students' intelligence so as to achieve improvement in various skills and abilities.

4.4. Microteaching, as a remarkably effective approach to development of students' teaching ability and skill, has opened up a new field for combination of teaching theory and teaching practice and for development of students' basic teaching ability.

5. References

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