

A Case Study on the Application of Microteaching Method in Improving Speech Ability: A Case Series

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Abstract—In order to investigate whether microteaching can help students improve their speech ability, this study used microteaching to conduct an experimental intervention on three subjects. The results showed that the scores of the three subjects in the cognitive and operational posttest of speech were improved compared with those in the pretest. Among them, the scores of A in the cognitive and operational test were improved by 54 and 50 points respectively, B by 56 and 32 points respectively, and C by 86 and 65 points respectively. This result shows that microteaching has a positive effect on the improvement of students' speech ability.

Keywords—microteaching; speech ability; application; case study

I. INTRODUCTION

Microteaching is a system of controlled practice that makes it possible to focus on specific teaching behaviors and to practice teaching under controlled conditions [1]. It is precisely because microteaching provides a controlled teaching environment and a wide range of feedback that it is so popular in the teaching field. Currently, there are two kinds of speech teaching modes. One is large-class teaching, which requires a lot of time, with broad teaching objectives and insignificant teaching effects. The second is one-to-one tutoring. Although this teaching method is targeted and has good teaching effects, it cannot meet the needs of batch cultivation. On the other hand, micro-teaching combines the "small steps" principle in B. F. Skinner's teaching thoughts and the classification theory of teaching objectives of B. S. Bloom, and provides a lot of feedback, which has the advantages of high efficiency and convenience [2]. At the same time, many researchers have conducted cross-object application research on the teaching characteristics of micro-teaching and achieved good application results [3]. Therefore, whether micro-teaching can be applied to the teaching practice of speech teaching, which also requires a lot of feedback, this study puts forward the corresponding experimental hypothesis: a. in the cognitive

dimension of speech, the posttest performance of the subjects improved compared with the pretest performance; b. In the operational dimension of the speech, the posttest performance of the subjects improved compared with the pretest performance.

II. METHOD

A. Participants

A is a junior student of Jiangxi University of Traditional Chinese Medicine, male, 21 years old, majoring in marketing. He had the experience of speech contest in his freshman year, and got the fifth place. He was interested in speech and did not know about microteaching before taking part in the experiment.

B is a senior student of Jiangxi University of Traditional Chinese Medicine, female, 22 years old, majoring in music therapy. She had no experience in speech contest, but she was an activity host. She was not interested in speech and did not know about microteaching before taking part in the experiment.

C is a first-year graduate student of Jiangxi University of Traditional Chinese Medicine. She is 23 years old and studies translation of traditional Chinese medicine. She has never participated in a speech contest and has a strong interest in speech. Before taking part in the experiment, she did not know about microteaching.

B. Setting

Three participants and two lab assistants with extensive speaking experience will conduct experiments in a simulated microteaching laboratory. The lighting and recording equipment of the simulated microteaching laboratory were stable. After the subjects signed the informed consent form, the experiment was conducted under the guidance of teachers who were familiar with the microteaching process and had rich speaking experience.

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C. Measurement and Procedure

The experiment was carried out in three stages. During the whole experiment stage, the subjects are required to learn according to the requirements of the instructor, and they are not allowed to learn speech technology in other ways.

The first stage (pretest stage) consists of two steps:

a. One week before the formal start of the experiment, the subjects were required to prepare a recitation speech entitled "the power behind smiles", which must be original and lasts 4-6 minutes. A week later, the speech was delivered in a simulated micro-classroom. After the speech, the judges will grade the speech into three dimensions: speech writing, presentation technology and assistive technology, each dimension of 100 points, a total of 300 points. In order to make the evaluation sources diverse and objective, the evaluation methods of self-evaluation, group member evaluation and instructor evaluation (self-evaluation accounts for 20% of the total score, group member evaluation accounts for 20%, instructor evaluation accounts for 60%) were adopted. Before the evaluation, the subjects were told to be as objective and fair as possible and the scoring was conducted by anonymous means.

b. After the completion of the speech, three subjects were tested by self-designed test to investigate the cognition of the speech skills of the subjects. The test is a closed test and has three dimensions: speech writing, presentation technology and assistive technology. 100 points per dimension, 300 points total. The test item comes from Lucas, S. E. *The Art of Public Speaking*- McGraw-Hill Education, 12th edition [4]. In order to ensure the reliability of the test, the test compilers tested the difficulty and differentiation degree of the test items, and eliminated the test items with P below 0.3 and D below 0.6. In order to ensure the test validity, test writers selected 30 subjects to test the content validity of the test with the retest method, and carried out *t* test with SPSS 20.0. The results showed that the score of the latter test was significantly higher than that of the previous test, so the test had good content validity.

The second stage (micro-teaching practice stage) is divided into 5 steps (all steps except step c are performed at an interval of 12-24 hours after the completion of the previous step):

a. Learn relevant knowledge and determine training objectives. Before the implementation of micro-teaching, we should learn what is micro-teaching, speech writing (logic, content richness, appeal or persuasion), presentation technology (opening, ending, argument, example, refutation, humor, encouragement, voice, action and expression, interaction), assistive technology (personal image, PPT or other visual display, sound effect, emergency handling) and other related content. After completing the knowledge learning, the instructor explained the specific training objectives, requirements and matters needing attention of this micro-teaching to the subjects. The duration of this phase was 90 minutes, with 10 minutes of rest to relieve fatigue.

b. Watch the speech demonstration film, analyze and discuss. In order to enhance the participants' image perception of the trained skills, standardized speech demonstration film was provided. The film from Ron Gutman's the hidden power

of smiling, 7 minutes and 26 seconds duration, video from Ted speech. In the process of watching the demonstration film, in the process of watching the demonstration film, the instructor will give necessary tips and guidance according to the actual situation, so as to improve the ability of the participants to observe, so that they can better absorb and digest the speech experience of others. Considering the cross-culture, Chinese subtitles are added to the demonstration film, and teachers will give explanations where there are differences in cultural expression. After watching the demonstration film, the participants were organized to have a class discussion, analyze the success and problems of the demonstration speech, and discuss how to design the speech if I give the speech. Participants in the experiment communicate with each other to prepare for the next stage of speech design. The duration of this phase was 90 minutes, with 10 minutes of rest to relieve fatigue.

c. Design Speech. At the end of the previous stage, the subjects were required to redesign the "power behind smiles" keynote speech, design the speech according to the purpose, content, object and conditions of the speech, write a detailed speech and prepare the required visual display. When writing a speech, participants should also indicate the time allocation of the speech, the possible audience response and other unexpected situations. This stage lasts for 7 days and is completed by the participants themselves in the classroom or dormitory.

d. Role play, evaluation and feedback. Participants take turns as speakers to present the speech prepared in the previous stage, lasting 4-6 minutes. Two other subjects and two lab assistants acted as listeners to create an atmosphere. After the speech is finished, the instructor gives the speaker 2 minutes to explain his speech design. The presentation time of each subject was limited to 6-8 minutes. The whole process will be recorded by the camera system.

After the three subjects' presentations, the instructor organized the participants to show the recorded video, which was watched by the instructor and the participants together. Firstly, the participants conduct self-analysis to check whether the practice process has reached the goal set by them, whether they have mastered the speech skills they have trained, and point out the areas for improvement. Then the instructor and other members of the group will conduct a collective review of the speech process of the subject to find out the shortcomings. The instructor will demonstrate the problem that the subject needs to improve when necessary, or let the subject observe the demonstration video again, so that the subject can further improve the shortcomings of his speech. The duration of this phase was 90 minutes, with 10 minutes of rest to relieve fatigue.

e. Modify the speech design and represent the speech. After the evaluation and feedback, the instructor asked the participants to modify the speech design, make and record speech again, so as to promote the mastery of various skills and the internalization of skills. The duration of this phase was 90 minutes, with 10 minutes of rest to relieve fatigue.

The third stage (posttest stage) consists of two steps:

a. After the micro-teaching stage, the subjects were required to prepare a recitation speech on "the value behind

honesty" for one week, which must be original and lasts 4-6 minutes. A week later, the participants gave a lecture in a simulated microteaching laboratory. After the speech, the evaluation method is the same as the pretest.

b. Three subjects were tested again by self-designed test to investigate their cognition of speech skills.

III. RESULTS

A. The top panel of fig.1 depicts the progress of A's score

In the pretest stage, A scored 215 points in the cognitive test, including 75, 76 and 64 points in speech writing, presentation technology and assistive technology. The total score of the operation test is 186 points, among which the scores of speech writing, presentation technology and assistive technology are 68, 67 and 51 points respectively. According to the scoring records, there was an improper use of modifiers in the speech of A in the pretest, and the case was cited once. The speech was not convincing and the logical relationship was not close. In the whole process of the speech, the speaker basically stood at the same place, except for the instructions PPT, no other gestures, voice and intonation performance is reasonable, and interaction with the audience once. Start and end well. The subjects' personal dress and decoration were close to the theme of the speech, and the PPT was mainly made by text, lacking animation and sound effects that fit the content of the speech. During the whole speech, the audience had no response other than courtesy response.

In the posttest stage, A scored 269 points in the cognitive test, including 88 points for speech writing, 92 points for presentation technology and 89 points for assistive technology. The total score of the operation test is 236 points, among which the scores of speech writing, presentation technology and assistive technology dimensions are 74, 83 and 79 respectively. According to the scoring rules, compared with the pretest, A's speech wording was correct, data or cases were cited three times, and the speech logic relations were improved. During the whole speech, the speaker moved close to the audience, showed gestures to explain the data, and interacted with the audience twice. The opening and ending of the speaker were reasonable, and the PPT production added animation and sound effects that fit the content of the speech, and the audience responded to the speech three times.

B. The middle panel of fig.1 depicts the progress of B's score

B's total score on the cognitive test is 216, among which the scores of speech writing, presentation technology and assistive technology are 70, 75 and 71 respectively. The total score of operation pretest is 219 points, among which the score of speech writing, presentation technology and assistive technology dimensions is 64, 83 and 72 points respectively. There were two improper use of words in A's speech, and the speech was cited once. The speech was not convincing. During the whole speech, the speaker can move easily and interact with the audience once without rigid gestures and expressions. Pronunciation and intonation, the opening and ending performance is reasonable. The subject's personal dress and decoration are close to the speech theme, and the auxiliary

video is reasonable. The audience will respond once during the whole speech except for the ritual response.

In the posttest stage, B scored 272 points in the cognitive test, including 89 points for speech writing, 91 points for presentation technology and 92 points for assistive technology. The total score of the operation test is 251, among which the scores of speech writing, presentation technology and assistive technology are 84, 87 and 80 respectively. Compared with the pretest, the speech of the participants was fluent in logic, with appropriate words, data cited once and case cited once. The speaker can use more gestures and expressions throughout the speech. In addition to the courtesy response, the audience applauded three times.

C. The bottom panel of fig.1 depicts the progress of C's score

C scored 184 points in the cognitive pretest, including 68, 57 and 59 points in speech writing, presentation technology and assistive technology. The total score of operational pretest is 141, among which the scores of speech writing, presentation technology and assistive technology are 54, 49 and 38 respectively. C had logic problems in the speech of pretest, and cited cases twice. Throughout the presentation the speaker basically stood in place, without gestures. There were two inappropriate intonation expressions, one pause and no interaction. The speaker began and ended well. The subjects' personal dress and decoration were close to the theme of the speech, but ignored the auxiliary display of hearing. During the whole speech, the audience had no response other than courtesy response.

C scored 270 points in the cognitive posttest, among which the scores of speech writing, presentation technology and assistive technology were 87, 93 and 90 respectively. The total score of posttest is 206 points, among which the scores of speech writing, presentation technology and assistive technology are 76, 70 and 60 points respectively. Compared with the pretest, C's speech appeared one-word misnomer, cited data or cases for three times, and improved the logical relationship of speech. Throughout the presentation, the presenter moved closer to the audience and interacted with the audience once, and gestures to interpret the data appeared, but the expressions and gestures were stiff. There was one place where the pronunciation and intonation were unreasonable, which showed that the subject was excessively nervous. The opening and ending of the speaker are more reasonable. PPT presentation was added in assistive technology, but the color and size of the text were not convenient for the audience to watch, and the audience showed no obvious response except for ritual response.

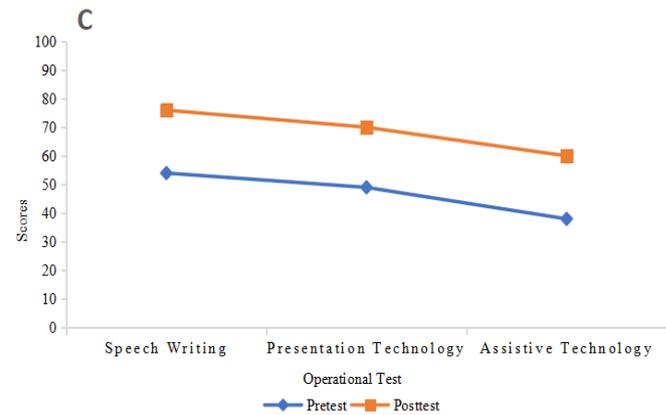
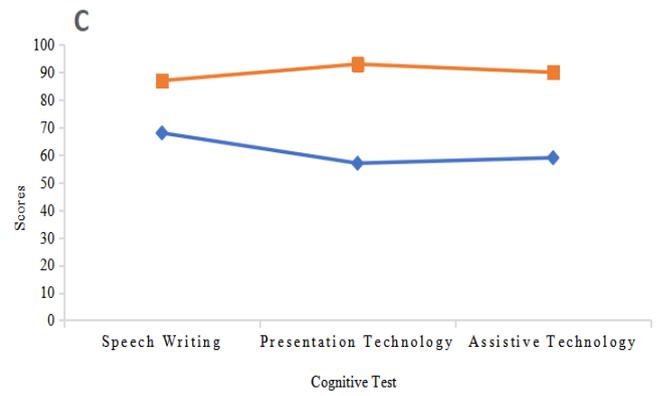
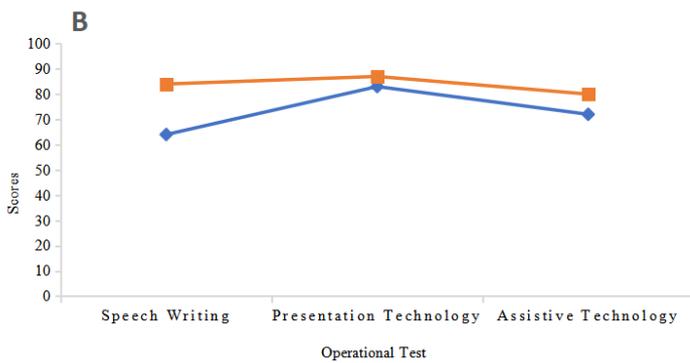
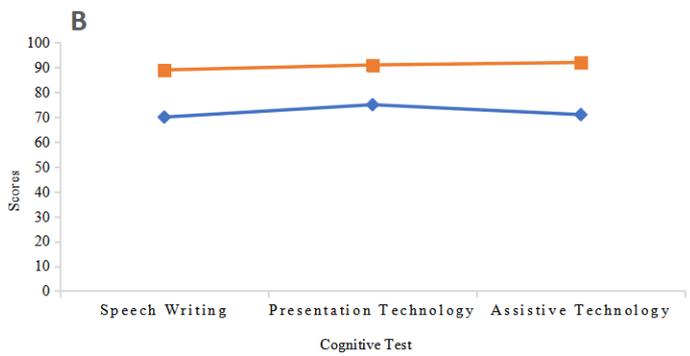
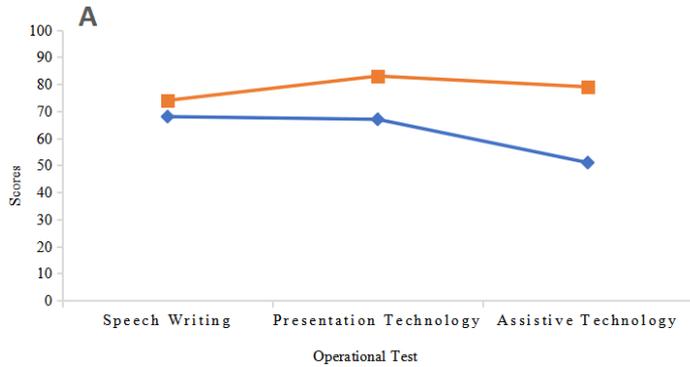
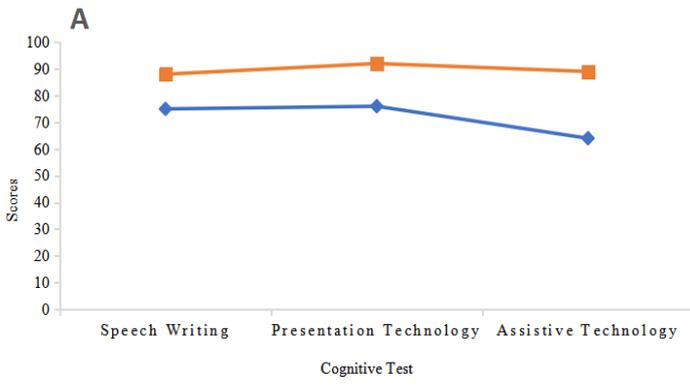


Fig. 1 Specific score data for A (top panel), B (middle panel), and C (bottom panel).

IV. CONCLUSION

The intervention results of the whole case series showed that the performance of the three subjects improved in both cognitive and operational tests compared with the pretest, which reflected the teaching effect of micro-teaching. During the experimental intervention, although the instructor required that the subjects should not learn speech technology in other ways, due to the lack of records, it is unclear whether the subjects strictly comply with the instructor's requirements. In future studies, video recording method can be adopted to record the behaviors of subjects throughout the intervention period to ensure the effectiveness of the intervention [5].

The pretest and posttest data of the three subjects showed that there was a difference in the level of speech skills of individuals before participating in the test, and the improvement of skills in all dimensions after intervention was also different. In future teaching research, individuals can be pretested to form homogeneous groups of individuals with similar skill levels in all dimensions for teaching, which is conducive to shortening teaching time and making micro-teaching more targeted [6]. The total score of the three subjects' cognitive test was higher than that of the operation test at the same stage, and after micro-teaching, the improvement of cognitive performance was generally higher than that of operation performance. This shows that practical operation speech is complex and difficult and requires longer training

time. Future teaching research can increase the training time of operational skills on the basis of this study, so as to achieve better teaching effect.

Finally, from the perspective of the evaluation method of test scores, in order to enhance the authenticity, future research can invite more experimental assistants to participate in the experiment when the subjects give speeches. At the same time, inviting more experts to score can increase the credibility of the results.

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