

## CHAPTER IV

### DISCUSSION



This research study aims at the development of a teaching model based on metacognition with the main objective of improving music improvisation ability. The study has adopted the pretest-posttest control group design. The experimental group receives metacognitive training plus exercise training whereas the control group receives only exercise training which is regarded as a conventional teaching way.

The hypotheses of this research study are :

1. The music improvisation performance scores gained at the end of the training session and at 4 weeks after finishing the treatment session are higher than that before the treatment session for the experimental group.

2. The music improvisation performance scores of the experimental group are higher than those of the control group both at the end of the treatment session and at 4 weeks after finishing the treatment session.

#### Hypothesis 1

The results from the study in the experimental group, tested at .05 level of significance, using one-way analysis of variance with repeated measure, showed that the means of music improvisation performance scores gained at the end of the treatment session (posttest 1) and at 4 weeks after finishing the treatment session (posttest 2) were higher than that gained before the treatment session (pretest). Also, the mean gained of posttest 2 was higher than that of posttest 1. The improvement in music improvisation being found should be due to the effectiveness of the developed teaching model based on metacognition.

This developed teaching model included 3 instructional techniques : (1) informed training, (2) teacher modelling, and (3) group practising. The learners were induced and trained to be aware and to regulate their own cognitive activities.

In the informed training, the learners were informed about the significance and the usefulness of metacognitive training. A person should be taught the value of doing something not only how to do it. As Brown (1978) pointed out that one reason for a child not maintaining a newly acquired behavior was that he may be unaware of its value. That is to say, he may not appreciate that the behavior could improve performance (Brown, 1978 : cited by Nickerson, Perkins, & Smith, 1985). The study of Paris, Newman, and McVey (1982) indicated that informed training led to increased recall and increased metacognition over the strategies.

As for teacher modelling, it was used for expressing thinking processes in analyzing the piece. The teacher served as music improvisation performing expert. In group practising, the learners practised the strategies used in analyzing the piece (question-generating, clarifying, and summarizing) by discussing among the entire class, along with teacher's encouragement and guidance. Teacher modelling and group practising used social interaction to promote thinking. They acted as facilitators for making thought processes explicit and as mediators of cognitive change. Class anticipation made thinking public. Resnick (1987) hinted that to promote thinking skills in social setting might have a profound effect on the learner because it encouraged a disposition for critical thought such that talking about thinking became an acceptable form of social discourse (Resnick, 1987 : cited by McGuinness, 1990).

In teacher modelling, the learners were given the strategies, tactics, and knowledge of the expert performer. These would lead the learners to realize the way in analyzing the piece more clearly and systematically. During group practising, the learners were encouraged and guided to think explicitly. They could then see how their thinking in analyzing the piece matched those of their peers, and misunderstandings could be resolved by listening to others or through explicit feedback from teacher. Weiss (1983) showed that teachers who served as verbal models (telling their students what to do, making sure they listened, and providing feedback) increased the skills of young elementary school children at completing motor tasks. If learners are encouraged to externalize thought process, or if they are exposed to better patterns of thinking through direct verbal explanations, discussions, or modelling by expert thinkers, they will eventually internalize the new thought patterns and become better thinkers (McGuinness, 1990).

The learners were also instructed to monitor, to judge, and to reward themselves. First, they set one's target score for their improvisation performance. Then after the performance, they received the achieved score from the teacher. They had to judge their target score with the achieved one, and finally rewarded themselves. Goal setting enlists evaluation self-reactions that mobilize efforts toward attainment (Bandura, 1986). For the self-monitoring, the learners observed and recorded the achieved music improvisation score on the feedback form. This feedback information would enable the learners to know their music improvisation ability, and it also gave the baseline score for the learners to set their next target score that would be more close to their music improvisation ability (Bandura, 1986). Using self-comparison, one's previous score was continuously used as a reference against which ongoing performance score was judged. This provided a benefit of personal challenge and successful experiences for

self-development (Bandura, 1986). Also, when people made self-satisfaction or tangible gratifications conditional upon certain accomplishments, they motivated themselves to expend the effort needed to attain the requisite performance. Both the anticipated satisfactions of desirable accomplishments and the dissatisfactions with insufficient ones provided incentives for actions that increased the likelihood of performance attainments (Bandura, 1986). The study of Morgan (1985) illustrated that students who set specific, short-term objectives for each study unit and monitored their progress toward the objectives outperformed ones who simply monitored study time.

This study used positive self-statements as self-incentive. The learners wrote positive statements to themselves when their achieved score was higher or equal to the target score, but they did not do any negative self-reaction if their achieved score was lower than the target one. The reasons were they could arouse disruptive thoughts and affections which would result in diverting attention from the task and reducing interest in it. Moreover, selectively focussing on one's deficiencies could detract from any perceived efficacy derived from performance improvements gained by negative self-inducement (Bandura, 1986).

In examining the means of music improvisation performance score gained at the end of the treatment session (posttest 1) and at 4 weeks after finishing the treatment session (posttest 2), it was found that the mean gained of posttest 2 was higher than that of posttest 1. This indicated that the learners in the experimental group still continued their improvement in music improvisation ability after the treatment session had been concluded. This might have come from the sustainment of the treatment effect. The feedback information which gave the learners knowledge of results might also have an effect on improvement of music improvisation ability. It

would enable the learners to correct unappropriate elements leading to appropriate performance outcome. As Sloboda (1987) commented that the learners would learn only successful procedure and would discard any procedure which would lead to repeated failure if they have received feedback.

However, the control group (received only exercise training) also improved in music improvisation ability. The result from the study in the control group, tested at .05 level of significance, showed that the means of music improvisation performance scores gained at the end of the treatment session (posttest 1) and at 4 weeks after finishing the treatment session (posttest 2) were higher than that gained before the treatment session (pretest), but there was no differences between the means gained from posttest 1 and posttest 2. The difference between the experimental group and the control group was only that the mean of music improvisation performance score gained by the former one at posttest 2 was higher than that at posttest 1, whereas, the latter one did not have any difference between the means gained from posttest 1 and posttest 2.

For the control group, the improvement in music improvisation performance might have come from the exposure to the researcher's music improvisation model performance. Improvisation traditionally has necessitated a good ear and also has provided means for developing good listening habits (Baker, 1980). Exposure to a particular type of music over a long period of time results in the recognition of common melodic and rhythmic prototypes that characterized the sound (Dobbins, 1980). When the learners had the opportunity to hear various ideas used in doing improvisation, they would have wider experiences with relevant elements of melody, rhythm, and harmony in a spontaneous and expressive manner which might have affected on their improvement in music improvisation ability.

Apart from having been exposed to music improvisation model performance, the improvement in music improvisation performance could also be due to the playing experiences. Practice is necessary for increasing proficiency in any skill (Klausmeier, 1985). Shuter-Dyson and Gabriel (1981) carried out a detailed and comprehensive review of research on the effects of specific practice and music lessons on musical development. Most of this was explicitly geared towards improving, or accelerating, musical development; and this was typically assessed in terms of scores on standardized ability test. The reviewers concluded that specific coaching could indeed improve specific skills in many cases, but the long-term stability of these improvements was less well established. Thus, the exercise training could facilitate skill performance attainment.

The learners in the control group only imitated music improvisation model performance but they did not receive any feedback informations of their progresses. The learners in the experimental group, however, received the achieved score of their music improvisation performances as feedback information. The improvement in music improvisation performance found at the test after the treatment session (posttest 1) of the control group might be from the fluency in performing music improvisation from imitating the techniques and ideas as used in the model performance. Having no feedback informations, they might not be concerned of appropriate techniques and ideas to be adopted for doing music improvisation of each piece. They probably would not be able to improve on music improvisation performance. These corresponded with the results found in the control group.

### Hypothesis 2

In order to know that the training used in the experimental group (metacognitive training plus exercise training)

was more effective than the one used in the control group (exercise training), the t-independent test was introduced for an evaluation test. The result, tested at .05 level of significance, showed that there was no differences between means of music improvisation performance scores in the experimental group and the control group for the test at the end of the treatment session (posttest 1). But for the test at 4 weeks after finishing the treatment session (posttest 2), a difference occurred in the means of music improvisation scores between these two groups. This meant hypothesis 2 was conformed with the result for the test at 4 weeks after finishing the treatment session (posttest 2) only. However, it was not conformed with the result for the test at the end of the treatment session (posttest 1). These indicated that the exercise training which was regarded as a conventional teaching way for music improvisation used in the control group could be used for training a person to improve his music improvisation ability. But the effect from metacognitive plus exercise training as used in the experimental group tended to be more effective when the training was over.

The improvement of music improvisation performance in the control group found at posttest 1 could be due to the playing experiences and the opportunity in hearing various ideas used by the researcher's model performance. Although the learners in the experimental group had received metacognitive training to enhance their metacognition, the improvement of their music improvisation performance at posttest 1 did not exceed that of the control group. The learners in the control group might also develop metacognitive skill through their repeated attempts over the problem (Anzai & Simon, 1979). The studies of Kuhn and Ho (1980), Labouvie-Vief and Gonda (1976), Kontos (1983), and Kontos and Nicholas (1986) revealed the powerful impact on solitary practice on the development of an individual's strategic approach to task. Solitary practice effect might be as important as specific metacognitive training in problem solving situations.

For the test at posttest 2, it was found that the gained score of the experimental group was higher than that of the control group with a statistical significance. That meant the learners in the experimental group improved more music improvisation ability than that of the control group. This would have been caused by different treatment effects imposed upon the experimental group as well as upon the control group. In the control group, the learners did not receive the informed training and the instruction in monitoring, judging, and rewarding themselves. Neither did they encounter with the thinking processes in analyzing the piece as done in the experimental group. For the training, they sang the melody and then listened to the researcher's music improvisation performance before they performed their improvisation. They learned to do music improvisation through experiences in their own way. In addition, having no feedback information, they would neither realize to learn a successful improvisation nor to discard an unsuccessful one. Therefore, they might tend to use inappropriate elements subsequently. Comparing with the learners in the experimental group, they were systematically trained to be aware of and regulate in their cognitive processes. They were taught to value the things they were doing, trained for thinking processes in analyzing the piece, and instructed to monitor, judge, and reward themselves. They were also provided with feedback information to their music improvisation performance which would lead them to perform more appropriate improvisation. These should induce them to be more conscious in every aspect and attempt of doing music improvisation, and enabled them to continue for their improvement. When subjects are taught how to monitor their own progress, to analyze, and to correct problem areas as they occur; the chances of success of training program in general seem to be improved (Clark & Palm, 1990).



This research study indicates that the developed teaching model based on metacognition seems to be more effective than the conventional teaching method in improving the learner's music improvisation ability. This might be due to its systematic teaching approach. It also gives rise to an affecting factor for the improvement in music improvisation ability. Further studies need to be done. The metacognitive knowledge and skills, thinking processes, the performance skill, improvisation experiences, the duration of training, and also the retention of treatment effects should be determined. However, this research study serves as a model for the design of future research on the role of metacognition in music improvisation as well as of other subjects. It also induces educators to find teaching methods for promoting learners' thinking and achievement.



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