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Use of ICT for Training in Simultaneous Singing and Piano Playing and The Improvements it Achieves

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Abstract: As a way to exploit Information and Communication Technology (ICT) in the provision of training in simultaneous singing and piano playing, we introduced a method of requiring students to view e-learning material and to submit videos of their performance. In this paper, we evaluate how this method improves students' performance skills, based on the length of time the students spent in viewing the e-learning material, the reports submitted by the students, the videos of the students' performance taken in the course of their regular practice, and the results of their mid-term and final performance exams. It is shown that (1) the combination of the viewing of the e-learning material and the submission of performance videos, which are both non-face-to-face training, encourages the students to undertake self-training and can considerably improve their performance skills, and that (2) it is necessary to provide face-to-face training for certain skills that cannot be improved through non-face-to-face training.

Keywords: blended learning, e-Learning, University education, assurance of lecture, skill transfer

Introduction

There have been many practice-based studies on the advantages and disadvantages of group lessons as a means of teaching a musical performance skill. Yi and Takeshi[1] reported on the status of group piano lessons given in teacher training colleges in China. They undertook a questionnaire survey with 169 students in teacher training colleges in China, and found that students preferred individual lessons to group lessons in learning piano playing. The reasons given were that (1) individual lessons provide detailed instructions, and (2) students can learn a wider variety of subjects more efficiently. Studies in Japan have been inconclusive about the advantages of group lessons. Furukawa et al. [2] recognized the advantages of group lessons but indicated that ultimately it was necessary to rely on individual lessons. Nakagawa[3] suggested that group lessons have positive effects on students. The above studies indicate that is it difficult to entirely eliminate some form of group lessons for the teaching of simultaneous singing and piano playing. The authors have considered that it may be possible to make group lessons as effective as individual lessons in improving students' skills by combining them with other methods or by modifying the way they are given.

In this paper, we report on a training method in which students not only took group lessons (hereafter referred to as "face-to-face" training) but also were required to view e-learning

material and to submit videos of their performance. We study the effects of the e-learning material by examining how the students' performance and perception changed after viewing the e-learning material. In addition, we indicate the limitations of non-face-to-face training and the need to combine such training with face-to-face training in what we call "blended" training.

1. Practice environment

We applied our method to the course "Music for Children I" (which was given in the first semester of the second year of study) at the Faculty of Developmental Education in K. Women's College. The course took place from April to July, 2009, and 105 students took the course. Students recorded their performance in videos using a recording device called KS20 (Yokoyama et. al.,[4]), which was installed in the performance practice room, and identified their recording by means of a bar code. If a student had recorded a performance of more than one song, he/she selected the one that they thought was the best, and submitted the bar code of the selected video.

The e-learning material consists of four parts: (1) model performance of simultaneous singing and piano playing, (2) model performance of singing, (3) musical scores with annotations, and (4) FAQs for better singing. The length of time for which each student viewed the e-learning material was recorded as part of his/her learning activity log. In this paper, we analyze the performance videos and reports submitted before and after the viewing of the e-learning material by the top 15 students ranked in terms of the length of viewing time.

2. Analysis and Discussion

We summarizes changes that occurred in the case of the 15 students after viewing the e-learning material. Two students achieved a remarkable improvement, and 9 showed some improvement while the remaining 4 made little improvement. Generally, students made more improvement in singing than in piano playing.

The characteristics of the two students who made a remarkable improvement are as follows. Student H was a beginner in the piano. Although she mastered almost everything she could learn from the e-learning material, she seemed to be lost about how to practice in the future. Student K was an advanced learner of the piano. The reports submitted by the students indicate that those students who viewed the e-learning material for a long time became aware of many important points and were anxious to learn. In their reports, the 15 students whose reports were analyzed identified 17 points that they found useful in the e-learning material.

Table 1 shows the changes in scores from the mid-term exam to the final exam. Students could be classified into three groups: a group that did not view the e-learning material, a group that viewed the material for up to 30 minutes, and a group that viewed the material for more than 30 minutes. Considering the fact that there was no significant difference in the average score in the mid-term exam between the three groups, that almost all students submitted videos of their performance at least once, i.e., they had the opportunity to review their own performance by watching their videos, and that there was a pronounced difference between the three groups in the average score and the standard deviation, σ, it can be concluded that it was useful for students to view the e-learning material before they submitted their second performance videos. While including the viewing of the e-learning material in the training of simultaneous singing and piano playing helped students improve many skills, there were certain skills that could not be improved just by viewing the

Table 1. Relationship between the results of the mid-term and final exams and the length of time of viewing the e-learning material

		Length of time spent viewing the e-learning material		
		0	Up to 30 min	More than 30 min
Number of students		34	53	18
Mid-exam results	Average	72.26	73.08	73.78
	σ	6.21	4.20	7.32
Final exam results	Average	70.32	74.85	75.39
	σ	18.56	4.07	5.76
Percentage of those whose score went up or down	Up	53%	68%	67%
	Down	29%	21%	28%

e-learning material. Improvement in these skills can be better achieved through direct advice given during face-to-face lessons.

4. Conclusions

In this paper, we introduced a method of requiring students to view e-learning material and to submit videos of their performance. In this paper, we evaluate how this method improves students' performance skills, based on the length of time the students spent in viewing the e-learning material, the reports submitted by the students, the videos of the students' performance taken in the course of their regular practice, and the results of their mid-term and final performance exams. It is shown that (1) the combination of the viewing of the e-learning material and the submission of performance videos, which are both non-face-to-face training, encourages the students to undertake self-training and can considerably improve their performance skills, and that (2) it is necessary to provide face-to-face training for certain skills that cannot be improved through non-face-to-face training.

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