An Investigation of Secondary Pre-Service Music Teachers' Pedagogical Content Knowledge and Teacher’s Self-Efficacy through Peer Mentoring: A Case Study of the Graduate School of Music Education in South Korea

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Abstract
The purpose of this study is to examine PCK and self-efficacy of the pre-service teachers enrolled in the graduate school of music education through peer mentoring. In this study, 37 pre-service teachers participated in preparing teaching guides and demonstrating classes for 16 weeks. The survey, interview and self-reflection journal were used to analyze the components of PCK and teachers’ self-efficacy. As a result of analyzing the survey result, the interview and self-reflection journal, it was found that the pre-service teachers acquired diverse knowledge, prepared teaching guides and confidently demonstrated classes through mentoring. Such result implicates that the pre-service teachers must be provided with diverse opportunities to participate in researching and developing practical class demonstrations and teaching methods such as the school field.

Introduction
The purpose of education for pre-service teachers is to educate such pre-service teachers so that they can apply their knowledge acquired through the college of education or the graduate school of education to the actual school field. Such education for pre-service teachers requires the pedagogical content knowledge in cultural, specialized areas and emphasizes the capacity in diverse fields (Sahin et al., 2013). However, the course for training teachers has been educating such pre-service teachers for decades based on the same context without changing its system to cope with the change of time (Park, 2008).

Such education for pre-service teachers emphasizes to educate pre-service teachers so that they can apply the learned theory to the actual school field. Many colleges of education or graduate schools of education conduct education based on the theories (Bleicher & Lindgren, 2005), and enhances PCK of pre-service teachers through educational practices and educational activities (Jang, 2011). With regards to the enhancement of PCK, Rusznyak and Walton(2011) emphasized the important of the lesson planning guidelines in the process of teachers’ educational activities.

Peer mentoring is another matter considered important in enhancing PCK. Mentoring is a process for purposely organizing a team consisting of members with more experiences and skills and members with less experiences and skills in order to enhance and develop a certain capacity in accordance to the agreed goal (Murray, 2002). Peer mentoring is a mutual sharing of conversations among teachers on their students and classes. The teachers or pre-service teachers with more experiences serve as the mentors. The mentees(teachers) are not only provided with how to build attitude and character as teachers but are also provided with how to teach in the actual field of education through the advice or counsel provided by the experienced mentors(teachers).

The subject of music pedagogy runs classes consisting of content delivery and practical practice (singing/instrumental music). The department of music education proposes the teaching method in the class demonstration process through providing pre-service teachers with an understanding on class expertise which reflects the characteristics of the practice-based classes. However, such pre-service teachers in Korea are experiencing difficulties in systematically constructing classes relating to the music subject and running classes by balancing theories and activities within that process (Yun, 2014). It is necessary for the school music teachers to construct their class plan in accordance to the curriculums. Such class plan is an important factor that allows the learners to acquire musical knowledge and musical skills, and it contributes to the effective construction management of music classes. Accordingly, pre-service music teachers must acquire knowledge on how to prepare a systematic class plan and be educated on music pedagogy relating to the music
In addition to PCK, teachers’ self-efficacy is another factor influential on the capacity of teachers. Such teacher’s self-efficacy is part of the self-efficacy serving as the expectancy that their belief and behavior based on their confidence that they are able to successfully run classes will have a positive influence on the academic achievement of learners (Gibson & Dembo, 1984; Riggs & Enochs, 1990).

The specific study problems are as follows.
Initially, is PCK among pre-service teachers enhanced through peer mentoring?
Secondly, is teachers’ self-efficacy of pre-service teachers enhanced through peer mentoring?

**Research Methodology**

**Participants and Research period**

This study is a case study conducted by the author while teaching the <music education of instructional materials and teaching methods for music> class at the graduate school of music education. The <music education of instructional materials and teaching methods for music> is an essential class to be taken by the students enrolled in the graduate school of music education to complete the course for acquiring the teacher’s license. As for the survey, 37 students (male students: 8, female students 29) out of 39 students participated in the pre-post-class surveys, and the group interview and self-reflection journal were additionally conducted to collect the specific data. 10 students who volunteered participated in the group interview conducted during the final class. The interview lasted for approximately 120 minutes based on the semi-structured questions prepared by the author.

**Instruments**

The PCK Instrument in Science Teaching for Elementary School Teachers by Park, S. H.(2003) based on SPTOK(Student Perceptions of Teacher’s Knowledge by Tuna(2000) was suitably adjusted to the secondary pre-service music teachers to be used as a tool for measuring PCK in this study.

STEBI(Science Teaching Efficacy Beliefs Instrument) developed by Riggs and Enochs(1990) was adjusted based on the translation, adjustment by Jo, Hyung Sook(1998) to be used as a tool for measuring teachers’ self-efficacy in this study.

As for the interview tool, the interview questions semi-structured in accordance to the study problem consisted of questions related to pedagogical content knowledge included in the <music education of instructional materials and teaching methods for music> class and questions on teachers’ self-efficacy. As for the self-reflection journal, all 39 students were divided into mentors and mentees to analyze the contents.

**Explanation of <music education of instructional materials and teaching methods for music>**

The educational goal of the <music education of instructional materials and teaching methods for music> class is to educate pre-service music teachers so that they can apply various educational theories and teaching methods acquired throughout the teaching training courses to the field of education. It is to allow them to acquire expertise and qualifications as teachers through preparing teaching guides, demonstrating classes, analyzing textbooks and developing teaching materials throughout the 16 weeks of class period. Such pre-service teachers are provided with an opportunity to acquire knowledge on teaching-learning and experience actual tasks performed by in-service teachers. While the learners were studying and learning the subjects and curriculums included in the class, they were provided with an opportunity to acquire PCK through their continuous team activities and feedbacks provided by the instructor on music subject matters.

**Data analysis**

The interview data and self-reflection journal contents were analyzed by categorizing and arranging them into the main topics and deducting the conclusion. The interview data were all recorded and integrated into MP3. The integrated contents were carefully read several times prior to setting the coding category. The initial coding was conducted according to the coding category, and the contents were categorized into the related topics to develop a common topic in the second coding. Then the contents of the developed topics were summarized to interpret the important contents. The developed topics and data were used to describe the results.
Result

As a result, it was confirmed that PCK and teachers' self-efficacy among pre-service teachers enrolled in the graduate school of education were enhanced through the use of mentoring. A number of measures were proposed to enhance PCK among teachers through the use of peer mentoring and such measures include a study on pre-service teachers’ perception of technological pedagogical content knowledge and ICT course experience through ICT assessment(Koh et al. 2013), a study on pre-service teachers’ PCK displayed in classes requiring analysis/evidence-based thinking from students(Monte-Sano, 2011) and an analytical study on relationship among educational use of internet, pre-service teachers’ technological PCK and teachers’ self-efficacy(Sahin et al., 2013). This study in comparison to studies described above is different from the preexisting discussion in that the mentoring based on pre-service teachers with no experience instead of in-service teachers is effective as well. In fact, there are not many opportunities for pre-service teachers to effectively learn PCK and teachers’ self-efficacy. In addition, since PCK and teachers’ self-efficacy are mutually related, it seems that the progress in a certain field is related to the progress in another field (Horzum, 2013; Park, 2008; Sahin et al., 2013).

In this study, PCK and teachers’ self-efficacy among pre-service teachers indicated a positive change through the mentoring conducted in the <music education of instructional materials and teaching methods for music> class. As a result of examining changes in PCK and teachers’ self-efficacy based on 7 different knowledge-based areas, a significant change was indicated in all 7 areas. In addition, it was confirmed that the learners displayed changes through the interview and self-reflection journal. Pre-service teachers analyzed and examined themselves as instructors as they acquired diverse teaching methods through developing teaching guides and reviewing classes demonstrated by other pre-service teachers. It was confirmed that such pre-service teachers enhanced their self-efficacy and gained confidence in preparing for and running classes through interacting with other pre-service teachers as mentors and mentees.

Conclusion

Music teachers must be able to run balanced classes as an expert specializing in educational theories and practices. Such music teachers are required to perform as educationalists with musical knowledges, practical skills, abundant experiences and educational thinking. The classes effectively run by such prepared teachers contribute to enhancing the learning ability of the learners. The pre-service music teacher who received the preexisting practice-based education must come up with diverse methods for running their classes in order to continuously enhance their PCK and teachers’ self-efficacy. It is necessary to provide an environment where such pre-service teachers can escape from the lecture-based classes to sufficiently acquire teaching experiences as actual teachers through preparing diverse teaching guides and demonstrating classes. Teachers are the main agents of classes. The quality of classes varies depending on how teachers run their classes. Pre-service teachers are able to expand their knowledge base required for their own teaching activities by cultivating and examining their own PCK through classes demonstrated by other pre-service teachers. Accordingly, it is necessary to view such PCK from comprehensive and diverse perspectives through various subject-related activities. Such pre-service teachers will be able to cultivate their expertise as music teachers and enhance teachers’ self-efficacy through diverse case studies.

Reference

Murray, M. (2002). Beyond the Myths and Magic of Mentoring: How to Facilitate an Effective Mentoring Process,


