

The Impact of Music Pedagogy Education on Early Childhood Teachers' Self-Efficacy in Teaching Music: The Study of a Music Teacher Education Program in Hong Kong

Dr. Fanny M. Y. Chung¹⁾

The Chinese University of Hong Kong

Abstract

Previous studies have suggested that teacher education plays a crucial role in developing pedagogical knowledge and enthusiasm in teaching music. Based on Bandura's (1977) self-efficacy framework, this study sought to investigate the impact of music teacher education program on self-perceived confidence and competence of 32 in-service early childhood teachers. Adopting a mixed methods approach, the Music Teaching Self-Efficacy Survey (MTSES) was the main source of quantitative data, whereas focus group interviews elicited the qualitative data. The results showed a significant increase in the participants' self-efficacy after completing a music pedagogy program which had strong emphasis on applied music. Aligning with Bandura's social cognitive theory, each of the four sources of self-efficacy contributed to changes in self-efficacy perception. Mastery experience was the most significant source, as exemplified by prior relevant experiences, peer teaching, and practice in music classrooms. Vicarious experiences included observations of music specialists and peers. Verbal persuasion included feedback and encouragement from the course instructor and peers. Lastly, physiological and affective states included anxiety in musical performance as well as stress and fatigue. The findings of this study may inspire the policymakers and universities for the future development of music teacher education programs in Hong Kong and beyond.

Keywords: self-efficacy, music teachers' competency, music teacher education, early childhood education

Corresponding author, ¹⁾ fannychung@arts.cuhk.edu.hk

Introduction

In Hong Kong, “Arts” was for the first time identified officially as one of the six major learning areas in early childhood education in the education policy in 2006 (Curriculum Development Council). The *Kindergarten Curriculum Guide* (Curriculum Development Council, 2017) published by the Hong Kong Government further stated that music should be included as the daily activity of kindergartens, and play-based learning should be the focus of the early childhood curriculum in which children should learn through play in music and other learning areas. Despite the growing importance of music in early childhood education, the professional education to prepare early childhood teachers to teach music is highly insufficient in Hong Kong and the teachers are largely trained as generalists, therefore resulted in a lack of confidence in teaching music among the teachers (Chan, 2012). In Hong Kong, formal professional teacher training is required for becoming a qualified early childhood teacher, which is offered by Government-accredited teacher training institutions. In this teacher training framework, only approximately 20 hours in total are allocated to music whereas other areas such as language is allocated more than 60 hours (Chan, 2012). Despite the known significance of arts education for young children, little is known about teacher self-efficacy beliefs in relation to arts education in early childhood education (Garvis & Pendergast, 2011). No major study in Hong Kong has investigated the impact of teacher self-efficacy on the overall effectiveness of early childhood teachers involved in music education. This study aimed to examine the impacts of music teacher education on in-service teachers’ self-efficacy in teaching music in the early childhood education setting. The findings of this study may provide an empirical basis for the future development of teacher education programs in early childhood music based on the professional needs of in-service teachers.

Standards of Competency for Music Teachers

Studies have suggested that teachers are one of the most important indicators of whether a classroom exhibits high-or low-quality instruction (Poulter & Cook, 2020). Nevertheless,

there is no commonly identified and globally agreed-upon set of musical competences required for early childhood teachers. Research on teacher competency in early childhood music education is scarce and suggestions in the literature for improving music teacher education are often vague. In the global context, the National Association for the Education of Young Children (2019) suggested that the early childhood teachers should be familiar with a variety of materials and tools in teaching each of the art forms. Sušić's (2018) recent study has revealed some perceived musical competencies by the early childhood teachers in Vienna, they were: music literacy, playing lead instruments, leading creative music activities, singing songs to a melodic instrument, active listening to music, playing Orff instruments, leading games involving singing, crafting children's instruments, and working with gifted children. Kelly (1998) and Leu (2003) have proposed some general competencies that early childhood teachers need to teach music to children. Some of these musical competences for early childhood teachers include music theory, music history, playing musical instruments, singing with accompaniment, selecting appropriate songs, leading singing activities, developing movement activities, and planning creative music activities (*ibid.*). Kelly (1998) believed that early childhood teachers were more comfortable with delivering practical learning experiences in music education for children (e.g. moving, using rhythm instruments, and leading and teaching songs). According to both Leu (2003) and Kelly (1998), practical musical skills are more important and beneficial for children than traditional ones (music history and music theory, for example).

In Hong Kong, despite the growing emphasis on music in early childhood education, the Education Bureau has not documented the musical competencies required for early childhood teachers. The teaching training institutes in Hong Kong largely focused on general musical knowledge and skills, e.g. music theory and basic singing skills (Chan, 2012). Chung (2019) has reported Hong Kong early childhood teachers' perceived competencies for implementing the music curriculum in early childhood education, and it was revealed that the perceived competencies by the early childhood teachers in Hong Kong include not only music competencies, but also various pedagogical skills and personal attributes: (i) love young children, (ii) value the importance of early childhood music education, (iii) be interested in different aspects of music, (iv) be confident in their own musicianship, (v) be willing to improve their knowledge and skills continuously throughout their career development, (vi)

be creative and playful in teaching, (vii) understand children's developmental stages in music, (viii) facilitate an effective and warm learning atmosphere, (ix) be flexible according to children's changing behaviours and needs, and (x) be enthusiastic.

Teacher Self-Efficacy

Using Bandura's (1977, 1986) social cognitive theory, this study adopts a social cognitive theory of motivation as the lens through which the self-perceived efficacy of early childhood teachers was examined. Self-efficacy is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p.3). Research has shown that good self-efficacy beliefs are related to teacher behaviour, e.g. decreased burnout (Brouwers & Tomic, 2000), increased job satisfaction (Caprara, Barbaranelli, Borgogni, & Steca, 2003), and use of creative curriculum resources and innovative strategies in teaching (Wertheim & Leyser, 2002).

Little research has investigated the role of self-efficacy in teaching music among the in-service early childhood teachers. Garvis and Pendergast (2010) examined perceived competence in each of the five arts strands (dance, drama, media, visual arts, and music) in Australia as compared with perceived competence in math and English. The results showed that early childhood teachers had greater perceived competence in teaching math and English as compared with any of the arts strands. Kretchmer (2002) studied the efficacy beliefs of elementary education majors enrolled in a music pedagogy course in the United States, and the results indicated significant gains in the participants' self-efficacy beliefs regarding music skills and knowledge as a result of their enrolment in a music pedagogy course. It is also important to note that teacher self-efficacy has proven to be a construct that interacts with teacher's pedagogical practice (Alger, 2009). Lee, Cawthon, & Dawson (2013) suggested that a teacher's high self-efficacy level would lead to a teacher's openness to new ideas in teaching and the competence in acting upon pedagogical change and incorporating new evidence-based practices.

According to Bandura (1977), there are four sources that inform teacher self-efficacy beliefs: (i) *Enactive mastery experience*, based on one's past successes or failures in different

circumstances and situations ; (ii) *Vicarious experience*, the experience in which the target activity is observed and modelled by other people ; (iii) *Verbal persuasion*, related to the verbal feedback or comments a teacher receives regarding his or her performance and prospects for success from other important people in the teaching context (e.g. students, administrators, colleagues, parents, or members of the community); and (iv) *Physiological and affective states*, the states such as sweating, heartbeat, fatigue, aches, pains, and mood changes.

Methods

This study employed an exploratory research design. Exploratory research is usually conducted for a problem that is newly identified or the data is difficult to collect, and it helps determine the best research design, data collection method and selection of subjects (Shields, 2013). Therefore, even though exploratory research can provide important insights into the future research, the major purpose of exploratory research is not to draw a definitive conclusion. Adopting a sequential explanatory design (Creswell, 2003), the researcher first collected quantitative data from the questionnaire, Music Teaching Self-Efficacy Survey (MTSES), which was drawn up by the researcher with reference to Bandura's (1997) self-efficacy theory to understand how the music pedagogy course had affected the participants' self-efficacy. The researcher then collected qualitative data from in-depth focus group interviews. Such sources of data are in line with Bandura's (1997) ideas regarding the development of means to measure self-efficacy—specifically, that the efficacy scales should be supplemented with interviews, open-ended responses, and structured questionnaires. This study aims at investigating the following research questions:

1. What is the impact of a music teacher education program on in-service teachers' self-efficacy in teaching music to young children?
2. What is the role and weighting of Bandura's (1977, 1986) four sources of self-efficacy in influencing the teaching of music among the in-service early childhood teachers?

Teacher research was used as an enabling method in this study. Teacher research is a form

of action research designed by practitioners to seek practical solutions to issues and problems in their professional practices (Stringer 2007). According to Cochran-Smith & Lytle (1999), teacher research is a systematic inquiry by teachers with the goals of gaining insights into teaching and learning, becoming reflective educators, effecting changes in classroom teaching, and enhancing the lives of students. Kretchmer (2002) also highlighted that conducting research with the researcher's own students can provide opportunities to engage in dialogue about a wide range of educational matters specifically related to issues in music learning and teaching that arise from vicarious and participatory experiences. Ferrance (2000) noted that as the teacher research paradigm provides a setting that is comfortable for both the researcher and participants, it can enhance the relevance and validity of the study. Teacher research was adopted in this study with the belief that the true meaning and value of teacher research is to generate reflection on what it means to be a teacher educator and, consequently, change the way teachers relate to students (Stremmel, 2007). A possible limitation of teacher research is that the value of teacher research is sometimes called into question because of its personal nature. It is sometimes argued that the authoritative standing of the instructor and the resulting power relations may affect the participants' ability to be completely honest in their responses. According to Zeni (1998), in order to overcome the limitation of teacher research, it is important to show how the researcher will protect the participants, and participants are usually considered free from risks if (i) they are well informed of the nature of the study and what is expected from them; (ii) they are required to give informed consent; (iii) they are informed that they can withdraw without any negative consequences particularly regarding their study; and (iv) they are assured that anonymity of people and confidentiality of data are protected. The researcher has done all these as suggested by Zeni (1998) at the beginning stage of research.

Context of the Study

The main objectives of the music pedagogy course in this study included: (a) to develop participants' fundamental knowledge and skills required for teaching music to young children; (b) to develop participants' competencies and creativity in designing developmentally appropriate music activities for young children; (c) to enhance participants' pedagogical

competencies in implementing music classes for young children; and (d) to help participants reflect on a wide range of classroom application issues in various classroom situations. The participants attended the course for 2.5 hours once a week for 13 weeks. The study was conducted in 2016, and with reference to the *Hong Kong Pre-Primary Curriculum Guide* (2006), the music teacher education program was a collection of applied music strategies including the followings:

Music and language

The participants were guided how to use instruments (e.g. percussion instruments) to embellish certain words or phrases in the poem or nursery rhyme, as well as using different visual aids, such as movement or props (e.g. scarf, ball, streamer, etc.) to accompany and enrich the image of the poem or nursery rhyme.

Ensemble: Singing, body percussion and ostinato

The participants were guided to create ostinato and body percussion (i.e. use different body parts to create rhythmic sounds) according to Orff approach which emphasizes the experience of making music through creativity and expression (Campbell & Scott-Kassner, 2006), to accompany the selected nursery rhymes.

Choreography and the use of dance in music classrooms

With reference to Dalcroze approach which emphasizes on the importance of experiencing and expressing musical elements through movements, the participants were guided to create dance and movement activities so that the children can learn various musical elements and enjoy the fun of different creative works through their senses and bodies.

Hand signs and creative music activities

The purpose of this area of learning is to guide the participants to integrate the hand signs advocated by Kodaly approach, which is a widely used music education approach in kindergartens (Flohr, 2005), into the musical games for children (Campbell & Scott-Kassner, 2006).

The learning and teaching activities of the course included: (i) workshops; (ii) students' individual and group oral presentation; (iii) the writing of lesson plans and preparation of teaching materials; (iv) video presentations of model teaching by early childhood music specialists; (v) assigned readings and follow-up discussions; and (vi) reflective writing of their class experiences.

Participants

There was a total of 32 participants (29 females, 3 males) in the study, and all were enrolled in the course Music Pedagogy for Young Children. Their ages ranged from 22 to 27, and their teaching experience ranged from 1 to 5 years. All of the participants were kindergarten teachers at the time.

Instruments and Procedures

The pre- and post- questionnaires of the Music Teaching Self-Efficacy Survey were designed identically in order to examine the changes in participants' self-efficacy after completing the music pedagogy course. The first four sections of the Teaching Self-efficacy Survey measured the participants' levels of confidence in teaching the four major applied music strategies of the music pedagogy course as discussed above, and the last section measured the participants' overall confidence levels in teaching music to young children. According to Bandura (1997), scales that use only a few steps are less sensitive and reliable since people tend to avoid the extreme positions. As such, all questions on the Music Teaching Self-Efficacy Survey were on an 11-point scale, ranging in 10-unit intervals from 0 ('Cannot do') to 100 ('Highly certain can do'). The draft of questionnaire was pilot tested to ensure the suitability of the items, and reviewed by experienced researchers and practitioners in early childhood education.

Focus group interviews were conducted to shed more light on the participants' sources of self-efficacy in teaching music to young children. The focus group interview involves in-depth conversations between the researcher and the participants that can yield rich expressions of thoughts, feelings, perceptions, opinions, meanings, and definitions (Punch,

2005). All of the participants were invited to take part in the focus group interviews. Sixteen of the participants responded; thus, two focus group interviews were conducted, and there were eight participants in each focus group. Despite the various benefits of one-on-one interviews, focus group interviews were deemed more appropriate for this study as the participants felt more comfortable and relaxed sharing their views in a focus group setting after studying together for 13 weeks. With an interview protocol, two focus group interviews were conducted in the form of semi-structured interviews. The protocol was reviewed by experienced researchers and practitioners in early childhood education before the interviews were conducted. Each interview lasted for an average of 90 minutes.

Data Analysis

All statistical analyses were computed using the statistical analysis software package SPSS. A *t*-test was used for this study's quantitative analysis since it can be robust for validity against non-normality (Northwestern University, 1996). Thematic analysis was adopted for analyzing the qualitative data, and the researcher determined the categories for analysis prior to the process of data collection. Thematic analysis is a qualitative method for identifying, analyzing, organizing, describing, and reporting themes found within a data set (Braun & Clarke, 2006). Categories in the analysis of the qualitative data included the four sources of self-efficacy (i.e. mastery experience, vicarious experience, verbal persuasion, and physiological and affective states).

Results

Quantitative Analyses: Teachers' Changes in Perceptions of Self-Efficacy

The participants were invited to complete the pre- and post- Music Teaching Self-Efficacy Survey (MTSES) in order to address the first research question of this study: What is the impact of a music teacher education program on in-service teachers' self-efficacy in teaching music to young children?

A validation of scales and measurement models was conducted. As recommended by Bandura (2006), the internal consistency of the Music Teaching Self-Efficacy Survey was examined by computing Cronbach's alpha (Cronbach, 1951). Reliability statistics were computed for individual items and the 34-item scale. In order to ensure the reliability of the statistics, all Music Teaching Self-Efficacy Survey subscales were evaluated for both the pre- and post-survey. Reliability was judged against .70 (Orcher, 2017). As shown in Table 1, the tests for internal consistency reliability yielded Cronbach's alpha coefficients of $\alpha > .9$ for all scales except pre-ensemble playing, which yielded a coefficient of .763, which is still satisfactory. The high Cronbach's alpha indicates that the Music Teaching Self-Efficacy Survey's subscales came together in a homogenous way. All 34 question items in the pre- and post-Music Teaching Self-Efficacy Surveys were also aggregated as an average. Then, Cronbach's alpha reliability coefficients were computed for both the pre- and post-Music Teaching Self-Efficacy Surveys. The pre- and post-Music Teaching Self-Efficacy Surveys yielded Cronbach's alpha coefficients of $\alpha=.975$ and $\alpha=.969$, respectively, in the test for internal consistency, indicating excellent internal consistency of the summed items in the scales (George & Mallery, 2003). Furthermore, since homogeneity of items was found in the tests for internal consistency reliability, the researcher combined the subscales into one overall measure of participants' music self-efficacy and then computed the mean averages for each subscale to conduct the subsequent analysis. As indicated by the significance tests, there was a significant difference at the .05 level for each pairwise comparison of self-efficacy perception. Table 2 shows each pairwise comparison of self-efficacy perception for different activities from the pre- to post-Music Teaching Self-Efficacy Surveys.

The quantitative data revealed that there was a significant increase in the overall mean Music Teaching Self-Efficacy Survey score, as observed in the pre- and post-Music Teaching Self-Efficacy Survey data. The mean score for all 34 question items in the pre-Music Teaching Self-Efficacy Survey was 5.0654 (SD=1.73), while the mean score for the post-Music Teaching Self-Efficacy Survey was 7.3474 (SD=.92). Therefore, enrollment of the music teacher education program in this case study produced a 45% increase in self-efficacy scores. As shown in table 3, significant increases in music teaching self-efficacy scores were revealed for each pair of all the subscales.

Table 1. *Instrument reliability statistics for MTSES subscales (n=32).*

Cronbach's alpha coefficient (α)				
Activity	N	Number of items	Pre-MTSES	Post-MTSES
Music and language	32	6	.945	.927
Ensemble playing: singing, body, percussion, and ostinato	32	4	.763	.946
Hand signs and creative music activities	32	4	.956	.944
Choreography and the use of dance in fostering children's learning in music	32	6	.956	.972
Overall confidence in teaching music	32	6	.950	.953

Note: MTSES: Music Teaching Self-Efficacy Survey.

Table 2. *Paired sample tests for pre-MTSES and post-MTSES (n=32).*

	Paired differences 95% confidence interval of the difference					T	df	P (2-tailed)
	M	SD	SE mean	Lower	Upper			
Music and language	-1.72	1.12	.20	-2.13	-1.30	-8.43	29	.000
Ensemble playing: singing, body, percussion, and ostinato	-2.68	1.15	.21	-3.11	-2.25	-12.78	29	.000
Hand signs and creative music activities	-2.91	1.79	.33	-3.58	-2.24	-8.92	29	.000
Choreography and the use of dance in fostering children's learning in music	-2.24	1.27	.23	-2.71	-1.76	-9.62	29	.000
Overall confidence in teaching music	-2.28	1.02	.19	-2.66	-1.90	-12.26	29	.000

Note: MTSES: Music Teaching Self-Efficacy Survey; M: Mean; SD: Standard Deviation; SE mean: Standard Error Mean; T: Difference represented in units of standard error; df: Degrees of Freedom Deviation; P: Probability of obtaining the truth of null hypothesis

Table 3. *Descriptive statistics for MTSES (n=32).*

Descriptive Statistics for Music and Language			
	<i>M</i>	<i>Mdn</i>	<i>SD</i>
<i>How confident are you at the moment in your capability to:</i>			
Play percussion instruments			
Pre	6.33	7.0	2.264
Post	7.80	8.0	1.324
Use percussion instruments to enhance children's learning in music			
Pre	5.80	6.0	2.041
Post	7.70	8.0	1.343
Use a variety of props to enhance children's learning in language			
Pre	5.57	5.5	2.315
Post	7.57	8.0	1.591
Read a poem in a rhythmic way			
Pre	6.17	7.0	2.379
Post	7.80	8.0	1.349
Teach children to play percussion instruments			
Pre	6.20	6.5	2.074
Post	7.73	8.0	1.112
Lead children to read a poem in a rhythmic and musical way			
Pre	5.73	6.0	2.033
Post	7.50	8.0	1.167

Descriptive Statistics for Ensemble Playing: Singing, Body Percussion, and Ostinato			
	<i>M</i>	<i>Mdn</i>	<i>SD</i>
<i>How confident are you at the moment in your capability to:</i>			
Demonstrate singing with body percussion			
Pre	5.97	6.5	2.385
Post	7.67	8.0	1.213
Teach children how to use body percussion			
Pre	6.40	7.0	2.568
Post	7.77	8.0	1.278
Incorporate the concept of ostinato in music activities			
Pre	2.80	2.5	2.644
Post	7.67	8.0	1.241
Conduct an ensemble activity for children			
Pre	4.77	5.0	2.239
Post	7.57	7.5	1.135

The Impact of Music Pedagogy Education on Early Childhood Teachers' Self-Efficacy in Teaching Music:
The Study of a Music Teacher Education Program in Hong Kong

Descriptive Statistics for Hand Signs and Creative Music Activities

	<i>M</i>	<i>Mdn</i>	<i>SD</i>
<i>How confident are you at the moment in your capability to:</i>			
Demonstrate the use of hand signs			
Pre	4.80	5	2.821
Post	7.17	7	1.416
Teach hand signs in music classes for children			
Pre	4.23	4	2.687
Post	7.03	7	1.377
Design music activities by using hand signs			
Pre	3.77	4	2.609
Post	7.23	7	1.251
Foster children's interest in singing by using hand signs			
Pre	4.13	4	2.432
Post	7.13	7	1.252

Descriptive Statistics for Choreography and the Use of Dance in Fostering Children's Learning in Music

	<i>M</i>	<i>Mdn</i>	<i>SD</i>
<i>How confident are you at the moment in your capability to:</i>			
Move/dance to music			
Pre	5.00	5.0	2.166
Post	7.03	7.0	1.189
Keep a steady beat in moving/dancing with music			
Pre	5.37	5.0	1.847
Post	7.10	7.0	1.185
Select and/or use appropriate music for dance activities			
Pre	4.67	5.0	2.106
Post	7.03	7.0	1.189
Create interesting movements to the steady beat of music			
Pre	4.57	5.0	1.995
Post	7.07	7.0	1.048
Teach children different concepts of music through dance			
Pre	4.70	5.0	2.087
Post	7.07	7.0	1.081
Arouse children's interest in dance			
Pre	4.50	4.5	2.209
Post	6.93	7.0	1.143

Note: M: Mean; Mdn: Median; SD: Standard Deviation; MTSES: Music Teaching Self-Efficacy Survey.

Qualitative Analyses: Sources of Self-Efficacy

Two focus group interviews were conducted in order to address the second research question: What is the role and weighting of Bandura's (1977, 1986) four sources of self-efficacy in influencing the teaching of music among the in-service early childhood teachers?

The results revealed that all four sources of self-efficacy were present and were in alignment with Bandura's social cognitive theory. Frequency counts of comments were used as part of the analysis of this study. The influence of each source on self-efficacy beliefs in teaching music is described in Figure 1.

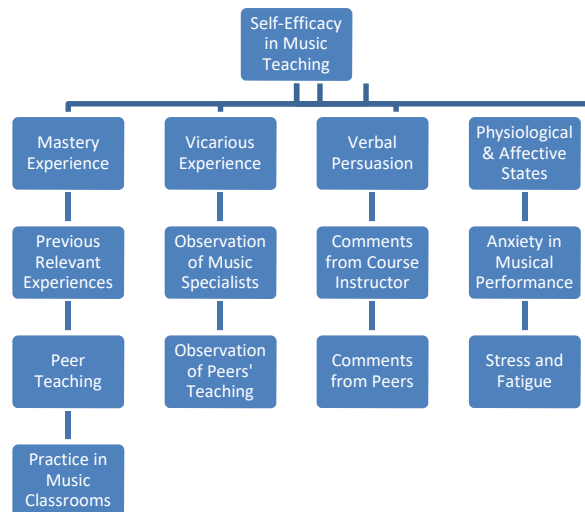


Figure 1. Schematic representation of the sources of in-service early childhood teachers' self-efficacy perception in music teaching

Mastery experience

The focus group interviews reflected consistency with Bandura's claim that mastery experience is the most significant source of self-efficacy belief. The frequency counts of participant comments related to enactive mastery experience significantly outnumbered the other three sources of self-efficacy. The total frequency count of participant comments related to enactive mastery experience was 41, while the frequency counts for vicarious

experiences, verbal persuasion, and psychological and affective states were 18, 12, and 16, respectively. In the context of this study, enactive mastery experiences consisted of the following: (a) previous relevant experience, (b) peer teaching, and (c) practice in music classrooms.

Previous relevant experiences

A number of participants discussed how their previous experiences in music positively affected their self-efficacy beliefs in teaching music. Participant 10, for example, said,

As a graduate with a bachelor of arts in music, I feel confident in studying in this early childhood music pedagogy course, even though I did not take any music education courses in my undergraduate study. I believe that my competency in playing piano and good knowledge in music theory would definitely help my lesson planning as well as implementation.

Peer teaching

Reflecting on the peer teaching activity in which participants taught a musical activity to the whole group, many students reported initially feeling nervous and intimidated. However, the focus group data showed that their confidence increased after conducting the peer teaching. Participant 13 expressed the initial misgivings:

When I was a secondary student, I was always being made fun of for my poor physical coordination and poor sense of rhythm while dancing. When the course instructor first mentioned the phrase 'choreography for fostering children's learning in music', it really sounded like something which would never be achievable for me. However, after the process of peer teaching, I think I have overcome my fear of dancing.

Practice in music classrooms

Participants generally agreed that immediately putting into practice what they had learned in class was advantageous since it gave them insights into the feasibility and practicality of the different teaching methods. Participant 12 said:

Even after I finished teaching the hand signs activities, the children kept asking: 'When can we do the hand signs again?'. Now I realize that leading such creative activities could benefit children's learning a lot yet full of fun for both students and teacher. Also, I found that teachers always need to behave as arts improviser and be willing to take risks so as to adopt child-centred approach well.

Vicarious experience

In this study, vicarious experiences included participants' observations of (a) music specialists and (b) their peers.

Observation of music specialists

Participants were shown videos of teaching demonstrations from the course instructor as well as other veteran early childhood music educators. The participants noted that these observations provided them with a great deal of new ideas and thus significantly enhanced their confidence in teaching music. As Participant 17 said, "From my observation, I have learnt that humour and enthusiasm are crucial for successful teaching in music. Now, I have a better understanding of the teaching techniques for leading ensemble activities for young children".

Observation of peers' teaching

The focus group data showed positive feedback regarding the peer observations. Participant 13 noted:

Observation of peers' teaching has armed me with both confidence and ideas. By observing my classmates' teaching, I have come up with so many innovative and creative ideas in teaching music, e.g. various concepts on play-based approach in music, how to design music map for music appreciation, create musical games, and improvise in ensemble activities.

Verbal persuasion

The forms of verbal persuasion in this study consisted of (a) comments from the course instructor, and (b) comments from peers.

Comments from the course instructor

The participants expressed that the instructor's positive and encouraging comments made them feel more confident in their ability to teach music to young children.

Participant 21, for example, noted:

The course instructor identified that good singing voice is my strength, and she praised that I could

always teach with a child-centred approach and maintain good communication with the children. Also, she suggested that my piano playing skills are good; therefore, I could have played the piano accompaniment for children's singing more often instead of using recordings all the time. Her comments have really boosted my confidence level in teaching music.

Comments from peers

Data from the focus group interviews showed the impact of peers' comments on the participants' teaching self-efficacy.

Participant 22 described her joy at hearing one of her classmate's comments: "One of my classmates was pretending to be a child in my microteaching session. She told me she had so much fun doing the activities...I was so happy to hear such comments!"

Physiological and affective states

The focus group interviews revealed that music anxiety, as well as fatigue and stress, affected teachers' self-efficacy in teaching music.

Anxiety in musical performance

A number of participants expressed their anxieties, saying that they were very nervous in all of the music activities that required them to play the piano. One of the participants (Participant 22) was aware of the need to improve her instrumental skills, saying, "In order to increase my confidence level in teaching music, I think there is a pressing need for me to practise piano hard".

On the other hand, the focus group interviews showed a boost in many participants' levels of confidence in singing after completing the music pedagogy course. Some participants said that after all the microteachings and in-class practice, they felt less nervous about singing in front of others. One participant (Participant 24) even reported a dramatic boost in self-perceived competence and confidence: "I really feel that the more you sing, the better you sing. Before, I was totally out of pitch all the time, but now I can sing in tune most of the time".

Stress and fatigue

Two participants in this study reported frequent feelings of stress and fatigue. The participants in this study all had full-time obligations with heavy workload as kindergarten teachers. Participant 29 said, “It was really stressful and tiring to go to school after nine hours of work. If I did not have a full-time job, I think I would have had more confidence in the microteachings”.

Discussion

Significance of Applied Activities in Music Teacher Education Programs

Aligning with Bandura’s (1977, 1986) self-efficacy framework, the findings of this study revealed that mastery experience was an impactful source of music teaching self-efficacy. In this study, the peer teaching experience in applied activities has contributed significantly to the development of mastery experience among the participants. As supported by the findings of other studies that promote applied activities (e.g., listening, singing, moving, and playing ensemble) in early childhood music education (Campbell & Scott-Kassner, 2009; Niland, 2009), this study has revealed the meaning and significance of applied activities as a major curricular focus when providing teacher education for the generalists in early childhood education. Therefore, the future music teacher education programs may need to put more emphasis on the practical aspects of the curricula so as to serve the professional needs of the early childhood teachers.

Concepts and elements of “play” were integrated extensively to all four areas of the music pedagogy course of this study. Researchers are increasingly identifying the significant value of musical play in the development of children’s musicality (Niland, 2009). However, this study revealed that many in-service early childhood teachers had insufficient content knowledge and pedagogical skills for adopting a play-based approach which has been emphasized in the latest official Curriculum Guide for early childhood education in Hong Kong (Curriculum Development Council, 2017), before enrolling in the music pedagogy course. As such, this study has implied the pressing needs for providing adequate training in

a play-based approach in music for the early childhood educators, in order to create meaningful and developmentally appropriate learning environments for young children (ibid.).

Increased Teacher Self-Efficacy Resulting from Music Teacher Education Program

In addition to mastery experience, this study revealed that vicarious experience and verbal persuasion also appeared to be significant for the development of teaching self-efficacy in music. In order to maintain in-service early childhood teachers' high self-efficacy in teaching, long-term planning should be structured. In light of the present study's finding that vicarious experiences and verbal persuasion had a significant influence on teacher self-efficacy, an advisory teacher could provide vicarious music teaching experiences through demonstrations and provide verbal persuasion when the generalist teaches music (de Vries, 2013). For example, Russell-Bowie's (2011) proposal for advisory arts/music teachers—a recommendation that sprang from the Australian National Review of School Music Education (Pascoe et al., 2005)—may be considered as a possible solution for Hong Kong. Such ongoing professional support from advisory teachers could also help generalists accumulate and achieve mastery experiences in teaching music. This study suggested that the four sources of self-efficacy (Bandura, 1977, 1986) have significant implications for the future development of music teacher education. That said, it should be noted that some other contextual factors (e.g. teaching resources and interpersonal support) may also influence teachers' self-efficacy in teaching (Tschannen-Moran and Hoy, 2007).

Teachers' Anxiety in Musical Performance

Participants' anxiety in musical performance found in this study has indicated the physiological and affective states of the in-service teachers. Also, this study revealed factors that adversely affected the teachers' delivery of music teaching to children, for example, weak capabilities in playing musical instruments. Since developing technique in the musical instruments (e.g. piano) can take many years, it is obviously not possible to train generalists to become highly skilled pianists or musicians within the time constraints of a one-semester

course. In this respect, other musical instruments (e.g. ukulele and simple percussion instruments) could be introduced in the music teacher education programs and be used in the music classrooms for young children. In the United Kingdom, the ukulele—a small guitar-like instrument—is commonly used by school teachers as an accompaniment instrument in class; it is very easy for them to learn to use the ukulele as an accompaniment instrument, and it is portable, which means the teacher can be close to the children when playing rather than being stuck behind a piano (Burke, 2006). Importantly, Burke's (2006) study in the United Kingdom found that with the pleasing sound and easy use of the ukulele, performers' confidence levels were significantly boosted.

Limitations/Areas for Future Research

The recommendations for future research stems from the limitations of this study. This study was small in scale. Nevertheless, this study can be viewed as an important reference for the future development of music teacher education programs. It is suggested that future studies may include a wider population with samples from other music pedagogy courses for generalists offered by other institutes in Hong Kong and the globe. Another methodological limitation of this study is the lack of a control group. A no-intervention condition, though desirable, was not feasible at the time of the study and within the confines of this established program. This may limit the ability to infer causation of the changes occurred to participation in the music pedagogy program. Hence, the results reported should be considered preliminary and hypothesis generating. Also, the actual impacts of the music pedagogy course in this study may vary from person to person, depending on the individual's background, experience and attitude. Further, a longitudinal study could be designed to investigate self-efficacy beliefs at different career stages (pre-service, novice, early career, mid-career, and late career) within subject domains. Since teacher self-efficacy is concerned with self-perceived confidence and competency, studies that explore the relationship between teachers' self-assessments of their own abilities and other more objective measures would be of great value (Tschannen-Moran & Hoy, 2007).

Conclusion

In conclusion, teacher self-efficacy is a small idea with a huge impact. This study contributes new knowledge by extending our understanding of how teacher education programs have made impacts on teaching efficacy in music. The findings of this study provide an empirical basis for the universities and policymakers regarding the future development of teacher education programs based on the professional needs of in-service teachers. This study implies the pressing needs for continuous professional development for early childhood teachers to renew their knowledge and skills, keep pace with ongoing changes, and broaden their vision to adopt excellent teaching practices that nurture the holistic development of young children. The powerful impact of music education on young children's holistic development should also be acknowledged. Although this study was conducted with the in-service early childhood teachers in Hong Kong, the implications of this study may be extended beyond the original context to other countries in the world.

References

- Alger, C. L. (2009). Secondary teachers' conceptual metaphors of teaching and learning: changes over the career span. *Teaching and Teacher Education*, 25(1-5), 743-751.
- Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. *Psychological Review*, 84(2), 191-215.
- Bandura, A. (1986). *Social foundations of thought and action*. New York: Prentice-Hall.
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.
- Bandura, A. (2006). Guide for constructing self-efficacy scales. In F. Pajares & T. Urdan (Eds.), *Self-efficacy beliefs of adolescents* (pp.307-337). Greenwich, CT: Information Age Publishing.
- Blaženka, B. S. (2018). Preschool teachers' music competencies based on preschool education students' self-assessment. *Croatian Journal of Education* 20(s.1), 113-129.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, 3(2), 77-101. doi:10.1191/1478088706qp063oa.

- Burke, A. (2006). The ukulele strategy. Retrieved from http://www.ukuke.co.uk/TTC22_Ukulele.pdf.
- Caprara, G. V., Barbaranelli, C., Borgogni, L., & Steca, P. (2003). Efficacy beliefs as determinants of teachers' job satisfaction. *Journal of Educational Psychology*, 95(4), 821-832.
- Chan, W. (2012). *Professional learning and pre-school music teacher education: Developing a framework for early childhood music teacher education*. [Unpublished doctoral dissertation]. University of New England, New South Wales.
- Chung, F. (2019). Interdisciplinary play-based approach in early childhood music education. In Monika Oebelsberger, Andreas Bernhofer and Gerhard Sammer (Eds.), *European perspectives on music education* (8th ed.). (pp.113–22). Austria: Helbling.
- Cochran-Smith, M., & Lytle, S. L. (1999). The teacher research movement: A decade later. *Educational Researcher* 28(7), 15–25.
- Creswell, J. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). Thousand Oaks, CA: Sage.
- Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches* (2nd ed.). London: Sage.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Curriculum Development Council (2017). *Kindergarten Education Curriculum Guide*. Hong Kong: The HKSAR Government.
- Curriculum Development Council (2006). *Guide to the Pre-primary Curriculum*. Hong Kong: The HKSAR Government.
- De Vries, P. (2013). Generalist teachers' self-efficacy in primary school music teaching. *Music Education Research*, 15(4), 375-391.
- Ferrance, E. (2000). *Themes in education: Action research*. Providence, RI: Northeast and Islands Regional Educational Laboratory. Retrieved from https://www.brown.edu/academics/education-alliance/sites/brown.edu.academics.education-alliance/files/publications/act_research.pdf.
- Flohr, J. W. (2005). *Musical lives of young children*. Upper Saddle River, NJ: Pearson Prentice Hall.

- Garvis, S., & Pendergast, D. (2010). Supporting novice teachers of the arts. *International Journal of Education & the Arts*, 11(8), 1-22.
- Garvis, S., & Pendergast, D. (2011). An investigation of early childhood teacher self-efficacy beliefs in the teaching of arts education. *International Journal of Education & the Arts*, 12(9), 1-15.
- Kelly, S. N. (1998). Preschool classroom teachers' perceptions of useful music skills and understandings. *Journal of Research in Music Education*, 46(3), 374-383.
- Kretchmer, D. (2002). *Developing pre-service teacher self-efficacy to integrate music in elementary classrooms: An investigation in growth through participation, observation and reflection*. [Unpublished doctoral dissertation]. University of Colorado, Boulder.
- Lee, B., Cawthon, S. & Dawson, K. (2013). Elementary and secondary teacher self-efficacy for teaching and pedagogical conceptual change in a drama-based professional development program. *Teaching and Teacher Education*, 30(1), 84-98.
- Leu, J. (2003). Facilitating children's musical connections in Taiwan: Rethinking the music curriculum for preservice early childhood educators. *Journal of Music-and Movement-Based Learning*, 9(1), 28-34. https://www.amazon.com/Early-Childhood-Connections-International-Perspectives/dp/B000XQRNRE/ref=sr_1_3?dchild=1&keywords=journal+of+music+and+movement+based+learning%5C&qid=1618978126&s=books&sr=1-3
- National Association for the Education of Young Children (2019). *Professional standards and competencies for early childhood educators*. Retrieved from https://www.naeyc.org/sites/default/files/globally-shared/downloads/PDFs/resources/position-statements/professional_standards_and_competencies_for_early_childhood_educators.pdf.
- Niland, A. (2009). The power of musical play: The value of play-based, child-centered curriculum in early childhood music education. *General Music Today*, 23(1), 17-21.
- Northwestern University (1996). *PROPHET Stat Guide: Do your data violate test assumptions?* Retrieved from http://www.basic.northwestern.edu/statguidefiles/ttest_unpaired_ass_viol.html.
- Orcher, L. T. (2017). *Conducting a survey: Techniques for a term project*. New York: Routledge.

- Pascoe, R., Leong, S., MacCallum, J., Mackinlay, E., Marsh, K., Smith, B., Church, T., & Winterton, A. (2005). *National review of school music education: Augmenting the diminished*. Canberra: Australian Government Dept. of Education, Science and Training.
- Piaget, J. (1962). *Play, dreams, and imitation in childhood*. New York: Norton Library.
- Poulter, V. & Cook, T. (2020). Teaching music in the early years in schools in challenging circumstances: Developing student teacher competence and confidence through cycles of enactment. *Educational Action Research*. DOI: 10.1080/09650792.2020.1765185.
- Punch, K. F. (2005). *Introduction to social research: Quantitative and qualitative approaches*. Thousand Oaks, CA: Sage.
- Russell-Bowie, D. (2011). An Ode to Joy...or the Sounds of Silence? An exploration of arts education policy in Australian primary schools. *Arts Education Policy Review*, 112(4), 163-173.
- Shields, P. (2013). *A playbook for research methods: Integrating conceptual frameworks and project management*. Stillwater: New Forums Press.
- Stremmel, A. J. (2007). The value of teacher research: Nurturing professional and personal growth through inquiry. Retrieved from <https://www.naeyc.org/files/naeyc/file/vop/Voices-Stremmel%281%29.pdf>.
- Stringer, E.T. (2007). *Action research*. Thousand Oaks, CA: Sage.
- Wertheim, C., & Leyser, Y. (2002). Efficacy beliefs, background variables, and differentiated instruction of Israeli prospective teachers. *Journal of Educational Research*, 96(1), 54-63.
- Zeni, J. (1998). A guide to ethical issues and action research. *Educational Action Research*, 6(1), 9-19.