An Investigation of Piano Training in Higher Education and Suggestions for Preparing Secondary School Music Teachers in Taiwan *

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Abstract

The purpose of the study is to determine the relationship between preservice training and inservice practice in Taiwan. More specifically, this study examines piano requirements, types of piano instruction, and piano-related course offerings in higher education, as well as junior high school music teachers' perceptions of their piano training and the use of the piano in general music teaching. This study provides recommendations to establish national consistency for Taiwan's teacher education programs that consider the practical piano needs of secondary school teachers.

Two questionnaires were developed: one was sent to chairpersons of music departments at nine universities which have been involved in secondary school teacher education since the implementation of the 1994 Teacher Act; the other was sent to 241 junior high schools randomly selected from 721 schools. From each of these schools, one music teacher was surveyed. The valid return rate reached 100% (N=9) from the first questionnaire and 79.32% (N=188) from the second questionnaire.

The major findings are: (1) higher education in Taiwan increasingly focuses on preparing teachers, yet the goal of training general music teachers is only an affiliated one in applied music degree programs, and is not reflected in undergraduate degree piano requirements; (2) the chairpersons' attitudes toward group piano instruction tend to be negative, and the potential effectiveness of group piano teaching in preparing general music teachers is not recognized; (3) "sight-reading," "harmonization," and "accompanying," were ranked as the three most important piano skills in general music teaching by both chairpersons and music teachers; (4) junior high school teachers detailed a need for university courses that address functional skills such as "accompanying," "keyboard harmony," and "improvisation."

Recommendations include: (1) implementing a certificate program that addresses requirements both in professional education and specialized areas in applied music degree programs; (2) establishing minimum standards in music performing competencies to ensure national consistency in teacher training; (3) teaching courses in small groups, that stress functional keyboard skills for the benefit of future teachers; (4) encouraging more interaction between leaders in higher education and teachers in the field to reduce discrepancies between preservice training and inservice demands.

Keywords: functional keyboard skills, inservice teaching demands, piano proficiency, preservice training

Introduction

Educational research has searched for ways to establish the philosophical foundations of education in order to provide a framework within which teaching can be improved. In the Republic of China, little effort has been made to connect the philosophy of music degree programs with the goal of teacher training. In particular, the practical needs of teachers in the field have received little consideration in the development of teacher training programs.

The Problem

While music teacher education has become an important part of Taiwan's higher education system, its curricula continue to be influenced by the European
conservatory model designed to prepare concert performers (Leonhard, 1985, p. 11). The 1994 policy change in teacher education increased access to teacher certification; however, the Ministry of Education (MOE) established requirements for unified courses and credit hours only in professional education. The importance of examining music teacher preparation increases due to a lack of consistency among universities in specific disciplines such as music, as well as the nature of the curricula that originated from the conservatory model.

Purpose of the Study

The purpose of the study is to determine the relationship between preservice training and inservice practice in Taiwan. More specifically, this study examines piano requirements, types of piano instruction, and piano-related course offerings in higher education institutions, as well as the perceptions of piano training and the use of piano in general music teaching by junior high school music teachers. This study aims to provide recommendations to establish national consistency for Taiwan’s teacher education programs that consider the practical piano needs of future secondary school teachers.

Significance of the Study

In order to help prospective teachers develop skills essential for future teaching, it is necessary to first investigate preservice training in undergraduate music degree programs. Music teacher education programs need to consider the practical needs of teachers to develop consistent rationales that are linked coherently with teaching in the classroom. In addition, this study is significant in that it examines music teacher education in Taiwan after the 1994 policy change and it considers the significance of piano as a teaching tool in the context of general music teaching.

Need for the Study

The need for this study is prompted by the 1994 Teacher Education Act in Taiwan regarding secondary teacher education. This act increased the number of music teacher education programs, which previously were offered only at normal universities. The policy change marked a historical shift and attempted to “promote the quality of teachers, adapt to the pluralistic society, and to solve a shortage of teachers” (Chiang, 1998, p. 11). However, secondary music teacher education institutions in Taiwan continue to be based on the European conservatory model used by pre-1994 departments of music. While the conservatory model emphasizes musicianship and performance skills, the ultimate goal of teacher education-oriented institutions should be to train “teachers who teach, not musicians who teach” (John, 1979, p. 59). As training teachers becomes a modernizing trend in higher education, the discrepancy in rationales should be recognized. In addition, as most universities begin preparing music teachers, national consistency in training quality teachers also should be established.

Piano is an important teaching tool in the context of general music teaching. In order to enhance secondary music teaching, it is essential to equip teachers with keyboard proficiency to facilitate musical activities in the classroom. Accordingly, this study, which probes current piano training in secondary school teacher education programs, is necessary.

Research Questions

The previous problem statement leads to six research questions:
1. How is the goal of music teacher training articulated in the rationales and piano requirements in undergraduate music degree programs in Taiwan?
2. What is the status of piano study in higher education institutions in Taiwan?
3. What are the attitudes of chairpersons of university music departments toward group piano teaching?
4. What is the piano training and certification background of junior high school music teachers?
5. How do chairpersons of university music departments and teachers in the field rank the importance of a list of keyboard skills in general music teaching?
6. How do junior high school teachers regard the effectiveness of their piano preparation in music teacher training programs?

Limitations of the Study

This study focuses on piano training in the preparation of junior high school music teachers in Taiwan. The survey population, therefore, did not
comprise teachers' colleges, elementary school, or senior high school music teachers. This study investigates piano requirements, types of instruction, and piano-related course offerings in four-year music degree programs established before 1999 at nine universities which are involved in secondary school teacher training.

Methodology

Research Design

In order to solicit information about higher education institutions and perceptions from teachers in the field, a survey was conducted. The use of questionnaires allowed the gathering of descriptive and explanatory statements about the survey population. Chinese translations of the questionnaires were developed for survey distribution (see Appendixes A and B).

The first questionnaire (Q1), sent to nine chairpersons of university music departments, focused on the investigation of piano training in Taiwan's higher education institutions. In addition to soliciting general information about each music department, the questionnaire was divided into four sections to answer research questions 1, 2, 3 and 5. The second questionnaire (Q2), mailed to 241 junior high schools, sought to document teachers' keyboard training experience and perceptions of the use of nine keyboard skills. The questionnaire was divided into three sections to answer research questions 4, 5 and 6.

Survey Population

This study involves two population categories. The first category comprised universities relevant to this study, those which are accredited for preparing secondary school music teachers in a four-year degree program established before 1999. The population included nine universities: two normal universities and seven-general universities. Since the population size is rather small, each university was surveyed. The chairperson of the department of music in these institutions was selected to complete the questionnaire.

The second category involved 721 junior high schools identified by the MOE (1998). In addition to time and cost considerations, the sample size of 241 out of 721 schools would satisfy confidence intervals of ± 5% at the 95% confidence level (Rea & Parker, 1997, p. 121). Accordingly, one-third of the population was determined to be adequate for this survey. Next, music teachers in 241 schools randomly selected from the sampling frame were surveyed. Because teachers' names were not released, the second questionnaire was mailed to the director of academic affairs, who was then asked to forward the questionnaire to one music teacher in the school. If the school selected had more than one music teacher, only one teacher was surveyed.

Pilot Test of the Questionnaires

Both questionnaires were pilot tested in the summer of 1999. The first questionnaire was sent to two music professors in Taiwan, whose specializations were piano pedagogy and music education, respectively, and one is appointed as the chairperson in a music department. The second questionnaire was sent to 20 music teachers who have taught or are teaching general music in Taiwan. The pilot participants for both questionnaires were representative of the population examined by the subsequent survey.

Procedure of Data Collection

After the pilot study, the questionnaires were revised to improve their clarity and ensure their relevance to this study. Subsequently, a list of research participants for both questionnaires was created. The survey questionnaires were distributed to a total of 250 participants in Taiwan at the beginning of the 1999 school year.

On September 6, the first mailing of survey questionnaire was sent to 250 respondents. By October 16, four (44.44%) university music chairpersons and 92 (38.82%) junior high school music teachers responded. On November 4, a second survey that contained a new copy of the questionnaire and an additional encouragement letter was sent to non-respondents. By the deadline of December 4, the total response rate for this survey reached nine (100%) university music chairpersons and 191 (80.59%) junior high school music teachers. Usable questionnaires numbered nine (100%) from chairpersons, and 188 (79.32%) from teachers in the field.
Data Analysis

Data were analyzed using SPSS. Descriptive statistics such as frequency distribution, measures of central tendency, and standard deviation were summarized for all questions. An alpha level of .05 was used for all statistical tests. Specific statistical procedures such as the Pearson product moment correlation, chi-square, t test, and the Mann-Whitney test were administered.

Results and Discussion

In order to ensure clarity in presenting data analysis for the two questionnaires, the six research questions were ordered first to display descriptive statistics about results from two questionnaires where Q1 preceded Q2. The relationship between preservice training and inservice practice was determined in the last two research questions, which compared responses obtained from both questionnaires.

1. How is the goal of music teacher training articulated in the rationales and piano requirements in undergraduate music degree programs in Taiwan? (Q1: q1-9, 16)

Q1 first solicited general information about the nine target institutions with a focus on the rationale of each undergraduate music program. Years of establishment of the undergraduate music degree programs ranged from less than 10 to more than 30 years. The department of music in four public universities had been in existence a slightly longer time. The distribution of years indicated that two departments of music were established in every decade in the past 30 years.

The total student enrollment varied from 79 to 280 students (μ = 179), with less student enrollment at two public universities (79 and 100, respectively). The number of piano majors, ranging from 19 to 92 (μ = 46), was approximately one fourth of the total student enrollment. No statistical significance was found between public and private universities on the three variables: years of establishment, total student enrollment, and number of piano majors, t(7) = .17, .14, and .50, respectively, p > .05.

Concerning the rationales of the undergraduate music degree programs, the majority of schools (69%) chose all four answers listed in the question. “Educating excellent musicians” and “Producing qualified music educators” were chosen by eight schools. All nine universities indicated that their institutions currently are accredited by the MOE in order to offer professional education courses for teacher training. Seven general universities became accredited within three years of the 1994 policy change. Only one respondent from a public institution indicated that her department had modified piano requirements and instruction for the purpose of training music teachers since its accreditation.

Regarding the necessity of establishing specific guidelines for piano requirements (Q1: q9), the seven valid answers ranged from one to five on a 5-point Likert-type scale with the average falling close to “yes,” with a large standard deviation indicating variability among respondents (μ = 2.57, σ = 1.62). Q1: q16 asked chairpersons to rank the importance of students demonstrating their piano competency prior to entering a department of music, as currently required in the Joint College Entrance Exam (JCEE). Responses closely clustered around “extremely important” on the scale (μ = 1.50, σ = 0.76). Comparing public with private universities, private universities overall had lower mean scores yet no statistical significance was achieved between the two groups, t(5) = .78, p > .05. A correlation between q9 and q16 was investigated regarding the attitude towards prior piano proficiency and the establishment of minimum standards in piano for training music teachers. No significant correlation was shown between these two variables, r = .41, p > .05.

2. What is the status of piano study in higher education institutions in Taiwan? (Q1: q10-14, 17)

On average, eight semesters were required for piano majors (μ = 7.78). Ranging from 8 to 24, an average of 14.25 credit hours were required for piano majors. Private universities tended to offer more credit hours to piano majors than did public universities (μ = 17.00), possibly to account for practice time. For non-piano majors, an average of four semesters (N = 6, μ = 4.33), totaling three credit hours were required. Three chairpersons indicated that, instead of being a required
subject, piano study was an elective for non-piano majors in their departments. One chairperson stated that “a minor” in an instrument is no longer required, but was previously required of all students in addition to a major in an instrument. All schools responded that they used private instruction to teach both piano and non-piano majors (N = 9).

Repertoire guidelines, including technical exercises for piano study or piano exams, were required for piano majors at eight schools, while only three schools indicated that they established such guidelines for non-piano majors. Eight responding schools indicated that their departments held exams for piano as an applied instrument taken as a scheduled course. Regarding components that were measured in the exam for piano majors, “playing solo repertoire” was identified by all respondents (N=8). Four respondents indicated that their exams for piano majors also measured “technical development.” “Playing solo repertoire” was evaluated for non-piano majors at seven schools, and “technical development” was assessed for non-piano majors at three schools. These were the only two items evaluated in such an exam. One chairperson indicated that they evaluated “harmonization” and “score reading” in basic musicianship classes rather than in an exam where piano was taken as a scheduled course.

“Piano Literature,” “Accompanying,” “Keyboard Harmony,” and “Piano Ensemble” were offered at all nine universities. “Piano Pedagogy” and “Score Reading” were also quite commonly offered, while only one public university offered “Improvisation.” “Piano Literature” was ranked the most commonly required course for piano majors. Only one private university required “Keyboard Harmony” and “Score Reading” for non-piano majors.

3. What are the attitudes of chairpersons of university music departments toward group piano teaching? (Q1: q18-21)

Respondents did not consider that group piano instruction is appropriate for teaching piano majors when queried on the five-point Likert-type scale (\( \mu = 4.43 \)), while the attitude was slightly toward neutral for non-piano majors (\( \mu = 3.83 \)). When specifically addressing the practical needs of teachers for general music teaching (Q1: q19), about half of the respondents were “unsure” whether group piano teaching would be more effective than private instruction (\( \mu = 1.57 \) on a three-point scale). One chairperson indicated that group piano instruction was appropriate for developing general musicianship, but should not replace private lessons.

No school offered group piano instruction, although one school used group piano instruction in a musicianship class. The majority of schools (5/7) indicated that they had electronic pianos, ranging from one electronic piano to 20 per school (\( \mu = 5.29, \sigma = 7.06 \)). Electronic pianos were most often used in theory-related or other courses. The school that had 20 electronic pianos used them in group instruction for training basic musicianship.

Data analysis investigated chairpersons’ attitudes on two questions that specifically inquired about general music teaching (Q1: q9 and q19). Subgroups were categorized by normal and general universities instead of public and private institutions in an attempt to investigate whether attitudes of chairpersons at normal universities revealed statistical significance concerning general music teaching. Results did not reveal statistical significance between chairperson at normal and general universities, t (5) = .41, p > .05, but chairpersons at general universities demonstrated a larger standard deviation in establishing guidelines.

4. What is the piano training and certification background of junior high school music teachers? (Q2: q18-18)

Among 186 respondents, 155 (83.33%) were music majors in their undergraduate studies and 31 (16.67%) respondents were not music majors in undergraduate studies. The number of piano majors equaled approximately 40% among the 164 respondents. Approximately 93% of music majors were female. Female teachers also comprised a significant portion of the piano majors (94.12%). Chi-square tests achieved statistical significance between gender and music majors but not between gender and piano majors, \( \chi^2 (1, \ N = 186) = 7.09, p < .01, \ \chi^2 (1, \ N = 164) = .67, p > .05 \).

Regarding piano instruction, 156 respondents had received private instruction in their undergraduate music programs (N = 186). An average of seven semesters of piano instruction was required for piano majors (n = 61, M = 7.48, SD = 1.25), with five semesters required for non-piano majors (n = 79, M = 5.06, SD = 1.61). Overall, the required semesters for piano study averaged six (M = 6.11, SD = 1.89), with a range from two to
eight. Statistical significance regarding required semesters was achieved between piano and non-piano majors, \( t(138) = 9.67, p < .05 \).

Q2: q17 was selected as the independent variable for analyzing required semesters for piano study in the undergraduate programs of the respondents. Results indicated that normal university graduates had completed more semesters of piano study (\( M = 6.71 \)) than graduates from other universities. This discrepancy was probably due to that normal universities produced a higher ratio of piano major music teachers than non-piano majors among respondents (44.12% and 34.74%). Subgroups were categorized according to the institutions from which respondents graduated. Statistical significance in required semesters of piano study was revealed in institutions teachers graduated, but not in the number of piano majors, \( \chi^2 (15, N = 140) = 65.82, p < .01 \), \( \chi^2 (3, N = 163) = 1.76, p > .05 \), respectively.

Findings indicated that piano exams were required of 93.5% of respondents, in which “playing solo repertoire” and “technical development” were the two most measured components. Among 179 respondents, 168 (93.85%) indicated that the exam often was administered in a routine semester jury. One hundred sixty-three respondents (91.06%) indicated that they had private lessons prior to their music teacher training, and the average duration was 10 years within a wide range of 1 to 25 (\( M = 10.20, SD = 4.87 \)).

One hundred sixty-nine of 188 respondents were female (89.89%). The 21-30 age group comprised over 40% of the total sample. Accordingly, the average duration of teaching in a secondary school was short; 53.19% had less than five years of teaching (see Table 1). Chi-square tests yielded statistical significance between gender and age, \( \chi^2 (3, N = 188) = 27.54, p < .05 \). The age of female teachers aggregated around 21-30, while male teachers had an average age of over 50 years. The distribution of gender within age group deviated negatively, where the number of female teachers increased and male teachers decreased. Regarding music-related teaching responsibilities, 184 teachers were involved in teaching general music and 129 teachers were involved in teaching chorus, which was also a very common duty.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Demographics of Junior High School Music Teachers</th>
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<tbody>
<tr>
<td></td>
<td>Gender</td>
</tr>
<tr>
<td></td>
<td>Female</td>
</tr>
<tr>
<td>n</td>
<td></td>
</tr>
<tr>
<td>169</td>
<td>19</td>
</tr>
<tr>
<td>P</td>
<td>89.89%</td>
</tr>
</tbody>
</table>

Note. N = 188.

Regarding the type of institution from which respondents graduated, graduates of general universities (47.03%) exceeded those of normal universities (38.92%). Among the 20 respondents who were graduates from the “Other” category (10.81%), seven indicated that they graduated from three-year or five-year junior colleges that no longer existed.

Music graduates outside of normal universities who had completed certification courses in professional education formed the largest portion (38.38%), a result that was consistent with the previous question, in which highest percentage of teachers indicated that they graduated from general universities. Linear by linear association (94.06, \( p < .05 \)) was investigated to check internal consistency between these two variables (q17 and q18). In addition, the 31 respondents who identified in q8 that they were not music majors in their undergraduate studies would accordingly check "non music majors but completed continuing education" in q18. Linear by linear association also confirmed internal consistency (27.62, \( p < .05 \)).

The respondents who identified themselves as "Other" either described why they became certified, or explained how they teach music without certification. Results showed that being a temporary substitute or a part-time teacher was a major factor (7/17). Some of these respondents indicated that they either will take or currently are taking the professional education courses required for certification. They reported that they were assigned to teach music because there was no music teacher available in the school, or music teaching was only part of their teaching responsibilities.
5. How do chairpersons of university music departments and teachers in the field rank the importance of a list of keyboard skills in general music teaching? (Q1: q15, Q2: q1-3)

The purpose of employing two questionnaires in this study was to investigate how preservice education fulfilled the practical needs of teachers in terms of the importance and preparation of nine piano skills. Agreement or disparity was observed to determine the relationship between attitudes of chairpersons and junior high school teachers. One question sought to determine how these two types of respondents prioritized nine keyboard skills according to their importance in general music teaching (Q1: q15 and Q2: q3). First, ranked means were used to investigate whether the ratings between chairpersons and junior high school teachers were congruent.

Results indicated that “sight-reading” was considered by chairpersons to be the most important piano skill in teaching general music (μ = 2.67, see Table 2), while score reading ranked last (μ = 8.17). “Playing solo repertoire,” the only component that was measured in piano exams at all universities, was ranked fifth with the largest standard deviation among all skills (σ = 5.87). “Technical development” was ranked sixth (μ = 5.50, σ = 5.81).

<table>
<thead>
<tr>
<th>Table 2</th>
<th>Ranking of Means by Order of Importance by University Chairpersons</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Playing solo repertoire</td>
</tr>
<tr>
<td>Ranking</td>
<td>5</td>
</tr>
<tr>
<td>μ</td>
<td>4.83</td>
</tr>
<tr>
<td>σ</td>
<td>3.87</td>
</tr>
<tr>
<td>Min</td>
<td>1</td>
</tr>
<tr>
<td>Max</td>
<td>9</td>
</tr>
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</table>


In Q2, responses to the same question (Q2: q3) from 166 teachers in the field revealed some discrepancies in ranked means from Q1: q15. “Accompanying” was ranked first (M = 2.69), while “transposition” and “improvisation” received higher rankings than in Q1. “Playing solo repertoire,” considered the fifth important by chairpersons, was ranked second to last by teachers. “Harmonization” appeared to receive a very favorable ranking from the majority of respondents, with the smallest standard deviation (SD = 1.53), and “score reading” remained the least important (see Table 3).

<table>
<thead>
<tr>
<th>Table 3</th>
<th>Ranking of Means by Order of Importance by Junior High School Music Teachers</th>
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<tbody>
<tr>
<td></td>
<td>Playing solo repertoire</td>
</tr>
<tr>
<td>Ranking</td>
<td>8</td>
</tr>
<tr>
<td>M</td>
<td>6.67</td>
</tr>
<tr>
<td>SD</td>
<td>2.44</td>
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<tr>
<td>Min</td>
<td>1</td>
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<tr>
<td>Max</td>
<td>9</td>
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</table>

Note. N = 166.

Table 4 displays how both groups ranked these nine piano skills in order of importance for general music teaching. “Sight-reading,” “harmonization,” and “accompanying” generally were ranked as the three most important piano skills by both groups. Two elements that were derived from “harmonization,” “chord progression” and “transposition,” were ranked in the middle. Compared with chairpersons, teachers
regarded “transposition” and “improvisation” to be far more important, and “playing solo repertoire” and “technical development” to be less important. “Score reading” was ranked last by both groups. Further data analysis was applied to test the differences between chairpersons and junior high school teachers. Statistical procedures that do not require assumptions about the shape of distribution were chosen for the small size of Q1. The Mann-Whitney test was administered for the ordinal data. Among the nine piano skills, rankings on the importance of “transposition” were statistically significant, \( U (172) = 226, p < .05 \) (see Table 5).

<table>
<thead>
<tr>
<th>Table 4</th>
<th>Ranking of Nine Piano Skills by Order of Importance in General Music Teaching</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Q1</td>
<td>Sight-reading</td>
</tr>
<tr>
<td>Q2</td>
<td>Accompanying</td>
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<td>Note: Q1: N = 6, Q2: N = 166.</td>
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</tbody>
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<th>Table 5</th>
<th>Mann Whitney Test on Importance of Nine Piano Skills</th>
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<tbody>
<tr>
<td></td>
<td>Playing solo repertoire</td>
</tr>
<tr>
<td>Ranking</td>
<td>8</td>
</tr>
<tr>
<td>M</td>
<td>6.61</td>
</tr>
<tr>
<td>SD</td>
<td>2.50</td>
</tr>
<tr>
<td>Min</td>
<td>1</td>
</tr>
<tr>
<td>Max</td>
<td>9</td>
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<tr>
<td>( U )</td>
<td>382.50</td>
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<tr>
<td>( z )</td>
<td>-0.98</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.33</td>
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<td>Note: * ( p &lt; .05 ).</td>
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</tbody>
</table>

In order to further examine how teachers ranked the nine skills differently, one independent variable was observed. It would be interesting to note how teachers with different assignments affect the ranking of nine keyboard skills. Results indicated that rankings were quite consistent among four subgroups based upon teaching assignments, except that teachers who teach orchestra/ensemble tended to regard “transposition” and “improvisation” as more important and “sight-reading” as less important. Results from the \( t \) test for equality of means indicated statistical significance in rankings on “sight-reading” and “improvisation” by those who teach orchestra/ensemble, \( t (165) = -3.32, p < .05 \), and \( t (164) = 2.84, p < .05 \).

Other questions that inquired about the use of piano included Q2: q1a and q2. Findings from these two questions confirmed the assumption of this study that piano serves as a significant teaching tool in general music teaching. One hundred forty-four of 169 respondents indicated that piano is the primary instrument in their teaching (85.21%). Ninety-three of 167 respondents (50.54%) regarded the use of piano in general music teaching as extremely frequent and important.

Independent variables such as gender, age, and years of teaching subsequently were investigated. Results indicated that age was significantly related to q1a, \( r = .15, p < .05 \). Female teachers, young teachers, or teachers with less experience in secondary school music teaching generally were more likely to rely on piano in their teaching, and thus to recognize strongly the importance of piano, as indicated by lower means.

6. How do junior high school teachers regard the effectiveness of their piano preparation regarding the same list of keyboard skills in music teacher training programs? (Q2: q4-7)
An Investigation of Piano Training in Higher Education and Suggestions for Preparing Music Teachers

Another major question in this survey investigated how teachers rated the extent to which the same nine skills were developed in their undergraduate degree or music teacher training programs (Q2:q5). Ranked means indicated that, consistent with components that were measured in piano exams (Q1:q14 and Q2:q10), “playing solo repertoire” and “technical development” were the two skills that were the most developed, while “accompanying,” the most useful skill shown in q3 in Table 3, was ranked the fifth most-developed skill in teacher training (see Table 6).

Table 6  Ranking of Means by Order of Preparation by Junior High School Music Teachers

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Playing solo repertoire</th>
<th>Technical development</th>
<th>Sight-reading</th>
<th>Chord progression</th>
<th>Harmonization</th>
<th>Transposition</th>
<th>Accompanying</th>
<th>Improvisation</th>
<th>Score reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3.35</td>
<td>3.60</td>
<td>4.09</td>
<td>4.89</td>
<td>4.47</td>
<td>5.69</td>
<td>4.81</td>
<td>8.82</td>
<td>7.25</td>
</tr>
<tr>
<td>SD</td>
<td>3.11</td>
<td>2.31</td>
<td>1.99</td>
<td>1.68</td>
<td>1.70</td>
<td>2.13</td>
<td>2.33</td>
<td>2.32</td>
<td>2.13</td>
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<td>Min</td>
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Note: N=169.

Since this information was based on preservice training experience, subgroups were considered according to which institutions teachers graduated from as well as according to the teachers’ certification backgrounds. The consistency previously was checked with linear-by-linear association between Q2: q17 and q18, and certification background then was chosen for its specificity in considering overall undergraduate music degree and teacher training programs. Results revealed that responses from non-music majors or certified teachers outside of regular training programs deviated from other categories where “playing solo repertoire” and “technical development” did not receive the same degree of emphasis. Chi-square tests indicated statistical significance in “chord progression” and “improvisation” among five groups, $\chi^2 (32, N = 168) = 52.2$, and 49.64, respectively, $p < .05$.

The data analysis is now sufficient to explore the relationship between the order of importance and degree of preparation of each piano skill. Paired sample t-tests were administered, indicating statistical significance in every skill except “chord progression” (see Table 7).

Table 7   Paired Samples T-Test on Use and Preparation of Nine Piano Skills

<table>
<thead>
<tr>
<th>Paired Differences</th>
<th>Playing solo repertoire</th>
<th>Technical development</th>
<th>Sight-reading</th>
<th>Chord progression</th>
<th>Harmonization</th>
<th>Transposition</th>
<th>Accompanying</th>
<th>Improvisation</th>
<th>Score reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>M</td>
<td>3.36</td>
<td>2.95</td>
<td>-0.42</td>
<td>-0.11</td>
<td>-1.26</td>
<td>-1.61</td>
<td>2.18</td>
<td>1.22</td>
<td>0.44</td>
</tr>
<tr>
<td>SD</td>
<td>3.63</td>
<td>3.08</td>
<td>2.59</td>
<td>2.12</td>
<td>2.08</td>
<td>2.58</td>
<td>2.78</td>
<td>2.54</td>
<td>2.11</td>
</tr>
<tr>
<td>t</td>
<td>11.80</td>
<td>12.22</td>
<td>-2.08</td>
<td>-0.67</td>
<td>-7.71</td>
<td>-7.98</td>
<td>-10.02</td>
<td>-6.13</td>
<td>2.64</td>
</tr>
<tr>
<td>df</td>
<td>162</td>
<td>162</td>
<td>163</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
<td>162</td>
</tr>
<tr>
<td>Sig (2-tailed)</td>
<td>.00***</td>
<td>.00***</td>
<td>.04*</td>
<td>.51</td>
<td>.00***</td>
<td>.00***</td>
<td>.00***</td>
<td>.00***</td>
<td>.00***</td>
</tr>
</tbody>
</table>

Note: *p < .05, **p < .01, ***p < .001.

Questions that further determined teachers’ attitudes regarding piano preparation included items asking whether or not the piano training was related to general music teaching and how teachers rated the overall adequacy of piano skill preparation in music teacher training (Q2: q4 and q6). Results indicated that respondents tended to feel neutral concerning their piano preparation in teacher training when queried on the five-point Likert-type scale (Ms = 2.58 and 2.63, respectively).

Subgroups were derived based on teachers’ certification backgrounds as well as whether or not they
were piano majors. As for certification background, ranked means for relevancy between how piano skills were trained and how piano skills were used in teaching were lower than ranked means for adequacy of preservice piano training (Note: A lower mean indicated a value closer to the positive end). Interestingly, the only exceptions were the normal university graduates, who rated relevancy higher than adequacy in piano training ($M_s = 2.61$ and $2.36$, see Table 8). No significant results were found among subgroups on these two variables, $\chi^2 (16, N = 183) = 18.44$, and $\chi^2 (16, N = 174) = 25.62$, $p > .05$.

### Table 8  Attitudes of Teachers on Piano Training by Certification Background

<table>
<thead>
<tr>
<th></th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Music graduate from normal university</td>
<td>64</td>
<td>2.61</td>
<td>1.06</td>
<td>2.36</td>
<td>0.90</td>
</tr>
<tr>
<td>Music graduate from teachers college and passed certification test for secondary school music teachers</td>
<td>12</td>
<td>2.25</td>
<td>0.87</td>
<td>2.82</td>
<td>0.60</td>
</tr>
<tr>
<td>Music graduate outside of normal university but completed professional education course credits</td>
<td>71</td>
<td>2.69</td>
<td>1.18</td>
<td>2.85</td>
<td>1.11</td>
</tr>
<tr>
<td>Non music major but completed specialization programs in continuing education</td>
<td>20</td>
<td>2.35</td>
<td>0.88</td>
<td>2.67</td>
<td>0.91</td>
</tr>
<tr>
<td>Other</td>
<td>16</td>
<td>2.38</td>
<td>0.96</td>
<td>2.50</td>
<td>1.03</td>
</tr>
</tbody>
</table>

Note. $N = 167$.

Regarding whether or not piano majors rated differently than non-piano majors, $t$ tests revealed statistical significance in adequacy, $t (152) = -2.58$, $p < .05$. Results showed that the mean score on adequacy from piano majors tended to be positive, with a lower mean score than that from non-piano majors ($M_s = 2.39$ and 2.81).

Q2: q7 requested suggestions for piano-related course offerings outside of one-on-one piano instruction. Respondents replied that “accompanying,” also the most important skill in use, should be offered first in teacher training programs (% of responses = 22.18%), “Improvisation” was also in great demand, and “piano pedagogy” received more counts than “piano literature.” Other suggested courses focused on basic elements of harmonization and musicianship, including transposition, modulation, and sight-reading. Music technology, such as the use of MIDI, also was requested.

Respondents tended to rate the use of piano higher and satisfaction with preparation of piano skills lower. Table 9 indicates that the ratings for all four questions moved slightly toward the negative end from use in general music teaching toward preparation in teacher training.

### Table 9  Comparisons of Ratings of Q2: q1a, q2, q4 and q6

<table>
<thead>
<tr>
<th></th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
<th>$n$</th>
<th>$M$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is piano the primary instrument you use in general music teaching? (q1a)</td>
<td>169</td>
<td>1.15</td>
<td>0.36</td>
<td>184</td>
<td>1.78</td>
<td>0.89</td>
<td>185</td>
<td>2.58</td>
<td>1.07</td>
<td>176</td>
<td>2.63</td>
</tr>
<tr>
<td>How do you rate the importance of using piano in teaching general music? (q2)</td>
<td>169</td>
<td>1.15</td>
<td>0.36</td>
<td>184</td>
<td>1.78</td>
<td>0.89</td>
<td>185</td>
<td>2.58</td>
<td>1.07</td>
<td>176</td>
<td>2.63</td>
</tr>
<tr>
<td>How is the piano training of your music teacher education related to general music teaching? (q4)</td>
<td>169</td>
<td>1.15</td>
<td>0.36</td>
<td>184</td>
<td>1.78</td>
<td>0.89</td>
<td>185</td>
<td>2.58</td>
<td>1.07</td>
<td>176</td>
<td>2.63</td>
</tr>
<tr>
<td>How do you rate the adequacy of your music teacher training with regard to how it developed your piano skills overall? (q6)</td>
<td>169</td>
<td>1.15</td>
<td>0.36</td>
<td>184</td>
<td>1.78</td>
<td>0.89</td>
<td>185</td>
<td>2.58</td>
<td>1.07</td>
<td>176</td>
<td>2.63</td>
</tr>
</tbody>
</table>
Conclusions and Recommendations

Conclusions

1. In the past three decades, an increasing number of normal and general universities have begun to offer four-year music degree programs. The programs aim to upgrade music professionalism, including the preparation of musicians and music educators. Since the implementation of the revised Teacher Education Act in 1994, all general universities that offer music degree programs have subsequently applied for and have received accreditation in teacher training. The policy change of accrediting all schools has achieved its goal of popularizing teacher training that used to be monopolized by normal universities. The training of general music teachers is not explicitly indicated in the departments’ rationales, but seems to be implicitly addressed by the goal of “producing music educators,” which respondents rate highly. Higher education is increasingly focusing on preparing teachers, yet this goal is secondary in applied music degree programs.

2. Undergraduate music programs require that students’ piano competency be tested rigorously for admission through the Joint College Entrance Exam (JCEE), but assessment of students’ keyboard competency after admission is flexible. Current accreditation requirements concern only professional educational course credits, and attention has not been drawn to specialized areas such as piano. The goal of music teacher training is not articulated in piano requirements in undergraduate degree programs in Taiwan. No minimum standards for teaching competencies have been established that ensure national consistency among institutions involved with teacher training.

3. Piano majors compose a significant portion of music graduates (41.46% in responding teachers and 25.58% in current music student enrollment in nine universities). Piano majors are required to take twice as much piano study: four years for piano majors and two years for non-piano majors. A required minor in piano for non-piano majors tends to be changed to an elective or to be eliminated from the requirements. Piano instruction remains the traditional mode of one-on-one studio instruction, focusing on “playing solo repertoire” and “technical development,” the only two components measured in a piano exam. The emphasis on applied music performance competency rather than on general music teacher training reveals an influence from the European conservatory model. A variety of piano-related courses are offered at the nine institutions; however, a course in improvisation that teachers regard as very important is offered at only one school.

4. Group piano instruction is rarely employed in the nine target universities in Taiwan, with only one school utilizing the format in basic musicianship classes. The chairpersons’ attitudes toward group piano instruction tend to be negative regardless of the type of students. Further, the potential effectiveness of group piano teaching in preparing secondary school teachers is not significantly recognized by chairpersons. Group piano instruction in Taiwan is not believed to be beneficial by music chairpersons to students’ piano proficiency and course requirements directed toward concert performance.

5. Nearly 17% of junior high school music teachers surveyed are not music majors in their undergraduate degree programs. Music teachers who are not music specialists or who are not certified to teach music when a full-time music teacher is not available, for example, in a remote area or in a small school where the few hours of teaching general music do not warrant a full-time music teacher. There are significantly more female teachers than male teachers among respondents. Female teachers are also significantly younger than male teachers. The majority of teachers surveyed are between the ages of 21-30, so the years of teaching at a secondary school are thus limited, suggesting the possibility that music teachers do not remain in junior high school teaching long. Though NTNU was the sole institution that had a degree program for music teachers before the 1994 policy change, 47.03% of responding teachers are graduates of general universities and take post-graduate courses in education.

6. Concerning piano requirements and instruction of teachers, findings from the survey of junior high school music teachers are consistent with those from the nine chairpersons. Higher education institutions have adopted the traditional one-on-one piano
instruction to teach all students, focusing on “playing solo repertoire” and “technical development.” The required semesters of piano study for piano and non-piano majors reported by the music teachers are similar to the current requirements in the nine universities. The status of piano study remains stable except that some institutions have eliminated a required minor in piano for non-piano majors.

7. Chairpersons and teachers in the field rank the importance of nine piano skills in general music teaching similarly excepting one statistical significance revealed in the two groups’ rankings of the importance of “transposition.” This discrepancy is probably attributed to the fact that teachers in the field often need to use transposition to guide junior high school singing activities. “Playing solo repertoire” and “technical development,” the only two components measured in piano exams, are ranked more importantly by chairpersons (fifth and sixth) than the rankings by teachers (seventh and eighth). Though not statistically significant, the discrepancy in the ranking of “improvisation” seems worth noting. Rankings of “sight-reading” and “improvisation” by teachers who teach orchestra/ensemble differ statistically from those of other subgroups. In addition, teachers aged 21-30 in particular considered the use of piano in their teaching important, possibly because these teachers are more likely to rely on piano immediately following graduation.

8. Though ratings of the importance of nine piano skills in general music teaching appeared to be similar by chairpersons and teachers in the field, considerable disparities exist between the rankings of the importance and the degree of preparation of the same skills by teachers. None of the nine skills listed in the two questions are ranked consistently with the exception of “chord progression.” Some skills that are rated as important do not match the degree of preparation in these skills. The extent to which “playing solo repertoire” and “technical development” is emphasized in preservice training is not congruent with how important they seem to general music teaching. It appears that music degree or teacher training programs which are geared toward developing performance competency are not meeting the practical needs of music teachers in piano training. Teachers rate the use of piano in general music teaching as very important, but feel neutral about the relevancy of their piano training to general music teaching and about the overall adequacy of piano training in teacher education.

Recommendations

1. While the rationale of music degree programs in the nine target universities is each different in nature from that of teacher education programs, the goal of training teachers in applied music degree programs also could be fulfilled by implementing a separate certificate program. A certificate program would be an alternative in the performance-based curricula, in which specific course requirements and competencies for teaching could be established for those who wish to teach general music. The program should include comprehensive requirements both in professional education and specialized areas, and should be distinct from the program for concert performers.

2. In light of the 1994 policy change that accredited all general universities to train teachers, all universities should establish minimum standards in music performing competencies for prospective music teachers to ensure national consistency in training quality teachers. The Ministry of Education or another organization in Taiwan should function as the National Association of Schools of Music (NASM) does in the United States to implement standards for teaching competencies in specific disciplines. The NASM guidelines for degree programs designed for teacher education in music could serve as a frame of reference.

3. The focus of piano training for preparing teachers should be different from the one for producing concert performers. Though piano preparation is typically considered adequate for general music teaching, more emphasis on functional keyboard skills would benefit future teachers instead of limiting the training to solo repertoire and technical development. Guidelines for music competencies for prospective teachers such as those stated in the NASM Handbook (註二) should be established in Taiwan's higher education system. Piano-related course offerings should be modified to include more opportunities for developing functional keyboard skills. For example, “keyboard harmony” should be required for all students, with an advanced level available for piano majors. Course offerings in “improvisation” that develop spontaneous playing and introduce modern playing styles should be widely
An Investigation of Piano Training in Higher Education and Suggestions for Preparing Secondary School Music Teachers in Taiwan, the Republic of China

offered.

4. The course content for teacher training should be modified to provide more hands-on learning opportunities. For example, “keyboard harmony” or “basic musicianship” skills should be taught in small groups and fully address elements that are in demand by teachers such as transposition and improvisation, providing students with practical experience in functional skills. In addition, course offerings or content should be diversified and include a wide variety of topics that are covered in current music teaching materials. Modern trends in music teaching, such as the use of multimedia music technology, should be incorporated in course offerings.

5. Group piano instruction would provide a beneficial alternative to one-on-one instruction for developing functional keyboard skills in all music majors or teaching secondary piano students. Because teachers surveyed stated a lack of training in functional keyboard skills, this would be a strong argument for implementing small group piano instruction for such skills in Taiwan. Group piano would also be helpful to enhance functional keyboard skills in inservice training, particularly in short-term courses or for teachers who are not music majors. The use of electronic pianos in a group piano lab would enable participants to acquire competence in technologies such as MIDI or other multimedia devices used in music teaching.

6. Because teachers have diverse certification backgrounds, it is necessary to provide teacher training, such as professional education courses for graduates outside normal universities, or continuing education for non-specialist teachers. Courses that address skills readily applied to teaching, for example, functional keyboard skills, should receive particular emphasis. In addition to the inservice training, short-term workshops on functional keyboard skills or the use of MIDI should be encouraged.

7. Chairpersons and teachers in the field rank the importance of nine skills in general music teaching similarly. However, teachers’ rankings of the order of importance and degree of preparation of the nine skills reveal that they feel their training did not adequately prepare them for using these skills in their teaching. Skills that teachers evaluate as more important should be emphasized in piano-related course requirements and offerings. In addition, interaction between leaders in higher education with music teachers in the field should be encouraged in order to reduce discrepancies between preservice training and inservice applications.

Implications for Future Research

1. This study is only a preliminary attempt to establish national consistency among institutions involved with the preparation of junior high school teachers. A survey of teacher education programs for other levels, such as elementary and senior high schools, including surveying their graduates, should be conducted.

2. This study investigates teachers’ practical needs in considering piano competence necessary for secondary school music teaching. Studies of different areas, such as training in choral pedagogy or voice, are rich for exploration. Because teaching chorus and singing dominate general music teaching and curricula in junior high schools, suggestions for choral or voice training would be valuable for improving teacher education.

3. More attitudinal surveys of graduates should be conducted to determine the effectiveness of undergraduate curricula. Assessment of music degree programs needs to consider perceptions of its graduates. Investigating opinions of graduates would aid teacher training programs in devising modifications.

4. With the recent discussion of the music standards for grades one through nine in Taiwan, distinctions between graduates from teachers’ colleges and normal universities will gradually disappear. The possible extension of compulsory education to 12 years would further necessitate a holistic examination of teacher training at other levels, including elementary and senior high schools.

References

(University Microfilms, No. AAG9904409)


2. NASM guidelines in music competencies for prospective music teachers specified that "functional ability in keyboard appropriate to the student's future teaching needs is essential" (NASM, p. 90).

*This article summarizes the findings reported in the author's Ed. D. Dissertation (University of Illinois at Urbana-Champaign, 2000)
臺灣高等教育鋼琴教學之研究
與對培育中等學校音樂師資之建議

陳曉霞
國立臺灣師範大學音樂系

本研究旨在探討臺灣音樂師資培育與實際教學需要之關係，特別針對高等教育鋼琴課程規定、授課方式，及鋼琴相關課程開設狀況進行調查，同時瞭解國中音樂教師對其所授鋼琴訓練及教學中使用鋼琴之看法，以期有助於確保音樂師資培育課程之一致性，並顧及國中音樂教師對鋼琴的實際需求。

本研究共使用兩份問卷：第一份寄予九位音樂系主任，九所大學皆自民國八十三年師資培育法修訂後參與培育中學音樂師資。第二份寄予自七十二所國中隨機抽樣之二十四一所國中，每所國中各由一位音樂教師填答問卷。有效回收率：第一份問卷達 100%（N = 9），第二份問卷達 79.32%（N = 188）。

主要研究結果包括：(1) 台灣高等教育已逐漸全面培育師資，但師資培育的目標卻未完全反映在鋼琴課程規定中；(2)大學音樂系主任對於團體鋼琴授課之看法趨向負面，團體鋼琴課程在培訓師資的潛力亦尚未受到肯定；(3)音樂系主任與國中音樂教師一致認為“視奏”、“配和聲”及“伴奏”係一般音樂課教學中最重要的三種鋼琴技巧；(4)國中音樂教師普遍需要大學中強調實用鋼琴技巧之課程，如“伴奏法”、“鋼琴和聲”及“鋼琴演奏”。

本研究提出如下建議：(1) 在鋼琴教學課程中，開設涵蓋教育與專業領域規定之教師資格專修課程；(2) 設訂針對音樂能力之基本要求，以確保培養師資的一致性；(3) 以小班授課方式，強調實用鋼琴技巧的教學，以溝通未來音樂師資；(4) 增加高等教育主導者與音樂教師之間溝通，以彌補師資培育與實際教學需要之差距。

關鍵詞：在職教學需要、實用鋼琴技巧、鋼琴能力、課前訓練
Appendix A

大學音樂系系主任問卷調查表
「音樂師資培育鋼琴課程規定及授課方式」問卷調查
基本資料

1. 學校名稱：
2. 學校類別：
   公立 ........................................................................................................... 1
   私立 ........................................................................................................... 2
3. 貴系大學部成立多少年？
   1-10 ........................................................................................................ 1
   11-20 ....................................................................................................... 2
   21-30 ....................................................................................................... 3
   30 以上 ..................................................................................................... 4
4a. 貴系大學部學生人數：
4b. 貴系大學部鋼琴主修學生人數：
5. 貴系成立宗旨為何？可複選。
   教育學生成為優秀音樂家 ................................................................. 1
   培育合格音樂教育者 ........................................................................... 2
   提升音樂之專業水準 ........................................................................... 3
   為研究所課業奠定堅實基礎 ............................................................... 4
   其他(請敘述) ......................................................................................... 5

培育師資背景

6a. 貴校是否授權貴校或設教育學程，以培育中學師資？
   是 ........................................................................................................... 1
   否 ............................................................................................................ 2
   ⇒ (請至第7題繼續作答)
6b. 貴校是否未來可能向教育部申請培育師資的資格？
   是 ........................................................................................................... 1
   否 ............................................................................................................ 2
   不了解／不確定 ..................................................................................... 3
   ⇒ (請至第9題繼續作答)
7. 貴校於何年獲頒培育師資的資格？民國 .................................
8a. 貴校是否已獲頒培育師資的資格而獲修訂鋼琴課程規定及授課方式？
   是 ........................................................................................................... 1
   否 ............................................................................................................ 2
   ⇒ (請至第9題繼續作答)
8b. 請敘述貴校獲頒培育師資的資格而獲修訂鋼琴課程規定及授課方式：

9. 民國 83 年頒布之師資培育法著重於教育專業課程基本標準之訂定。您是否認為亦有必要針對鋼琴課程
   設立特定之標準？請於 1(絕對贊同)至 5(絕對不贊同)間圈選一個數字。
   絕對贊同 ................................................................................................... 1
   絕對不贊同 ............................................................................................. 5

鋼琴課程規定及授課方式

10. 貴系規定下列學生之鋼琴必修學期數及總學分數：
    學期數 總學分數
    鋼琴主修.................................................................
    鋼琴副修.................................................................

11. 對於鋼琴主修學生，貴系採行何種授課方式？可複選。
    個別(一對一)授課 ................................................................................ 1
    團體(小組)授課 ................................................................................... 2
12. 對於鋼琴副修學生，貴系採行何種授課方式？可複選。
   個別(一對一授課).................................................1
   團體(小組)授課..................................................2
   其他(請說明)....................................................3

13a. 貴系對於鋼琴課程或考試是否訂有必修科目(含技巧練習)？
   是.................................................................1 ⇒ (請續答第13題b、第13題c，並請附上相關規定)
   否.................................................................2 ⇒ (請至第14題a繼續作答)

13b. 上述規定是否適用於鋼琴主修學生？
   是.................................................................1
   否.................................................................2

13c. 上述規定是否適用於鋼琴副修學生？
   是.................................................................1
   否.................................................................2

14a. 請問貴系大學部是否舉辦鋼琴方面的考試？(鋼琴方面僅指鋼琴該科目、該課程而言)
   是.................................................................1 ⇒ (請續答第14題b、第14題c)
   否.................................................................2 ⇒ (請至第15題繼續作答)

14b. 上述考試中，鋼琴主修學生必須測試之項目為何？可複選。
   a. 獨奏............................................................1
   b. 技巧練習(音階、琶音等)....................................2
   c. 視奏............................................................3
   d. 和弦進行....................................................4
   e. 配和聲.......................................................5
   f. 移調............................................................6
   g. 伴奏............................................................7
   h. 即興............................................................8
   i. 總譜彈奏......................................................9
   j. 其他(請說明)..................................................10

14c. 上述考試，鋼琴副修學生必須測試之項目為何？可複選。
   a. 獨奏............................................................1
   b. 技巧練習(音階、琶音等)....................................2
   c. 視奏............................................................3
   d. 和弦進行....................................................4
   e. 配和聲.......................................................5
   f. 移調............................................................6
   g. 伴奏............................................................7
   h. 即興............................................................8
   i. 總譜彈奏......................................................9
   j. 其他(請說明)..................................................10

15. 請根據您的意見，就下列九種鍵盤技巧在中學音樂教學中之重要性，自1至9依序排列。1代表最重要，9代表最不重要。每一數字僅可使用一次，請勿重複。如有必要，可請貴系某鋼琴教授回答此問題。(中學音樂教學係指國民中學之一般學校音樂課程，不包含音樂資賦異常班之教學)
   技巧名稱
   a. 獨奏
   b. 技巧練習(音階、琶音等)
   c. 視奏
   d. 和弦進行
   e. 配和聲
   f. 移調
   g. 伴奏
   h. 即興
   i. 總譜彈奏

16. 您認為學生(不分主、副修)依現行大學聯招規定，於入學音樂系前測試其鋼琴演奏能力是否重要？請於1(非常重要)至5(非常不重要)間圈選一個數字。
非常重要
1 2 3 4 5 非常不重要

钢琴相关课程开设状况

17a. 责系是否开设下列钢琴相关之课程？可複选。
钢琴音乐及作品研究 .............................................. 1
钢琴教学 ....................................................... 2
伴奏 ........................................................ 3
键盘和声 ..................................................... 4
总谱弹奏 ..................................................... 5
即兴演奏 ..................................................... 6
钢琴重奏（如室内乐） ....................................... 7
其他（请敍述） ............................................. 8

17b. 责系是否要求钢琴主修学生必修以上某些课程？

是
（请用第17题a之编号列举）
否

17c. 责系是否要求钢琴副修学生必修以上某些课程？

是
（请用第17题a之编号列举）
否

团体钢琴教学及电子钢琴使用状况

18. 对於採用团体（小组）钢琴教学方式教授下列学生，您的意见如何？请於1（非常适当）至5（非常不适当）间圈选一个数字。

a. 钢琴主修学生
非常适当 1 2 3 4 5 非常不适当
b. 钢琴副修学生
非常适当 1 2 3 4 5 非常不适当

19. 对于指导中学生音乐教师而言，您是否认为团体（小组）钢琴教学比个别（一对一）钢琴教学更能有效地符合中等学校音乐教师之实际需求？

是 ................................................................. 1
否 ................................................................. 2
不瞭解／不确定 ............................................... 3

20. 若责系设有团体（小组）钢琴课程，教学中使用何种钢琴？可複选。

直立式钢琴 ................................................... 1
演奏型钢琴 ................................................... 2
电子钢琴 ..................................................... 3
本系未开设团体（小组）钢琴课程 .................................. 4

21a. 责系是否有电子钢琴（electronic piano）？

是 ................................................................. 1 （请续答第21题b、第21题c）
否 ................................................................. 2 （请至第22题继续作答）

21b. 责系有哪类电子钢琴？

21c. 责系使用电子钢琴之状况如何？可複选。

使用於与键盘相关之课程 ....................................... 1
使用於与理论相关之课程 ....................................... 2
其他（请敍述） ............................................. 3
Appendix B

國中音樂教師問卷調查表

「音樂師資培育鋼琴課程規定及授課方式」問卷調查
鋼琴技巧使用及培訓狀況

1a. 請問鋼琴是否是您在中學音樂教學中之主要教學工具？
（中學音樂教學係指國民中學之一般學校音樂課程，不包含音樂資優班之教學）。
是 ........................................ 1 → (請填第1題b)
否 ........................................ 2 ⇒ (請至第2題繼續作答)

1b. 請問您在中學音樂教學中使用鋼琴之頻繁程度？請於1(非常頻繁)至5(非常不頻繁)間選一個數字。

<table>
<thead>
<tr>
<th>頻繁程度</th>
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2. 您認為鋼琴在中學音樂教學中之重要性如何？請於1(非常重要)至5(不重要)間選一個數字。

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3. 請根據您的意見，就下列九種鋼琴技巧在中學音樂教學中之重要性，自1至9依序排列。以1代表最重要，9代表最不重要。每一數字僅可使用一次，請勿重複。
  技巧名稱：a. 獨奏 b. 技巧訓練(音階、琶音等) c. 視奏 d. 和弦行進 e. 配和聲 f. 移調 g. 伴奏 h. 即興 i. 模謳彈奏
  中學音樂教學中之重要性

4. 您認為在您的個人音樂師資培育過程中，所受之鋼琴訓練及規定，是否符合您目前中學音樂教學上之需要？
請於1(非常符合)至5(非常不符合)間選一個數字。

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5. 請根據您的意見，就下列九種鋼琴技巧在中學音樂課程或師資培訓課程中之重要程度，自1至9依序排列。1代表最重要，9代表最不重要。每一數字僅可使用一次，請勿重複。
  技巧名稱：a. 獨奏 b. 技巧訓練(音階、琶音等) c. 視奏 d. 和弦行進 e. 配和聲 f. 移調 g. 伴奏 h. 即興 i. 模謳彈奏
  中學音樂課程或師資培訓課程中之重要程度

6. 整體而言，您是否認為您的音樂師資培訓充分地預備了您的鋼琴能力？請於1(非常充分)至5(非常不充分)間選一個數字。

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7. 您認為下列哪些與鋼琴相關課程應納入音樂師資培訓課程中？可複選。
  鋼琴音樂及作品研究 .......................................................... 1
  鋼琴教學 ................................................................. 2
  伴奏 ................................................................. 3
  鍵盤和聲 ............................................................. 4
總鋼琴演奏
即興演奏
鋼琴重奏(如室內樂)
其他(請敘述)

鋼琴學習背景

8a. 您大學時是否主修音樂？
是..................................................1 ⇒(請續答第8題b、第8題c)
否..................................................2 ⇒(請至第9題繼續作答)

8b. 您大學時是否主修鋼琴？


8c. 您就讀大學音樂系時，接受何種鋼琴指導方式？必修多少學期？
個別(一對一)課程，______學期..................................................1
團體(小組)課程，______學期..................................................2

9. 請問您就讀音樂系或接受師資培訓時，是否參加過鋼琴方面的考試？(鋼琴方面僅指鋼琴該科目，該課程而言)
是..................................................1
否..................................................2 ⇒(請至第12題繼續作答)

10. 您就讀音樂系或接受師資培訓時，所參加鋼琴該科目的考試包括哪些項目？可複選。
a. 独奏..................................................1
b. 技巧練習(音階、琶音等)..................................................2
c. 琵琶..................................................3
d. 和弦進行..................................................4
e. 鼓和聲..................................................5
f. 移調..................................................6
g. 伴奏..................................................7
h. 即興..................................................8
i. 総譜演奏..................................................9
j. 其他(請敘述)..................................................10

11. 上述鋼琴考試以何種方式施行？可複選。
 固定於期末考試中舉行..................................................1
 另有指定時間辦理..................................................2
 涵蓋於譜曲課程中..................................................3
 其他(請敘述)..................................................4

12. 在修習音樂系或接受師資培訓課程前，您曾接受過何種鋼琴訓練？時間有多長？
未曾接受任何鋼琴訓練..................................................1
個別(一對一)課程，______年..................................................2
團體(小組)課程，______年..................................................3
其他(請說明)..................................................4

音樂師資培育背景及基本資料

13. 性別：
女..................................................1
男..................................................2

14. 年齡：
21-29..................................................1
30-39..................................................2
40-49..................................................3
50 以上..................................................4

15. 您擔任國民中學音樂教師有多少年？
1-5..................................................1
6-10..................................................2
11-20..................................................3
20 以上..................................................4
16. 您現職內任教之音樂相關課程及活動類別為何？可複選。
   一般音樂課 ................................................................. 1
   合唱 ................................................................................. 2
   合(重)奏 ............................................................................. 3
   其他(請說明) .................................................................... 4

17. 您畢業於何種類型之大學？
   師範大學 ........................................................................... 1
   師範學院(含師專) ........................................................... 2
   一般大學(如中山、東吳等) .................................................. 3
   其他 ................................................................................. 4

18. 您如何取得中等學校音樂教師資格？
   師範大學音樂系畢業 ....................................................... 1
   師範學院(含師專)音樂系畢業，通過中等學校教師甄試 ....... 2
   一般大學音樂系畢業，修畢教育學分 .................................. 3
   非音樂系畢業，修畢音樂師資專長學分班 ........................... 4
   其他(請說明) ..................................................................... 5