

Practice-Based Learning in The Jazz Ear Training Classroom

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Abstract

This classroom research is focused on practice-based learning in jazz ear training, provided for the Bachelor of Music Program (jazz study) at Silpakorn University in Thailand. The instructor conducted this course by using the practice-based learning concept, which applied backward design study to develop the overall course syllabus. The participants in this study were 20 students in the Jazz Ear Training II class in academic year 2021. Program learning outcomes (PLOs) and course learning outcomes (CLOs) were considered to produce the relevancy. The objectives of the course, exercises, and evaluation methods emphasized the importance of ear training skills, both in terms of notation and performance skills (singing). Pre-test and post-test examinations were applied to collect the data from the students. Percentage, mean, SD, and dependent sample t-test analysis were performed. The results of using practice-based learning management revealed that the learners achieved CLOs. When comparing the pre- and post-tests, it was found that the scores for the post-tests were higher than those of the pre-tests in the melodic dictation, vocal singing, and harmonies with a statistical significance at a *p*-value of .000. The result of the students' self-reports according to the CLOs was 4.59 out of 5. Additionally, the course satisfaction assessment result indicated an average of 4.60 out of 5 points. The academic committee examined the students and acknowledged their achievement in terms of PLO alignments. The suggestions from this study are to expand practice-based learning to all of the courses in jazz study and to apply follow-up study as a result for further classroom activities and curriculum modification.

Keywords: practice-based learning, jazz music, ear training, learning outcome, backward design

1. Introduction

Jazz Ear Training II is a specific category and compulsory group of courses for first-year students in the Bachelor of Music Program, jazz major at Silpakorn University. The course focuses on practice in auditory skills in order to develop essential basic musical skills,

consisting of rhythm, melody, harmonization, and melodic dictation. Thus, students can apply their auditory training skills to the practice of major instruments, training exercises, and writing transcripts. This course accounts for the curriculum's expected learning outcomes in PLO10: identifying music elements with significant theoretical, auditory, historical, practical, and vocal significance. The course's expected learning outcomes consist of CLO1 (i.e., noting important musical elements from the auditory skills in octave, melody, rhythm, minor harmonic, natural, and harmony scales), CLO2 (i.e., identifying auditory elements, important skills for performing techniques on major instruments, ensembles, and singing), and CLO3 (i.e., the ability to practice auditory skill exercises, applause, and singing) (Silpakorn University, 2021).

The course is based on an active learning approach and focuses on the practice-based learning and teaching style, emphasizing practice, skill development, and problem-solving from hands-on learning by doing (Jazz Department, 2021). Practice-based teaching and learning are widely used in the areas where learning and teaching processes are focused on by practical activities (Shreeve, 2006). In addition, most practice-based teaching and learning connect to specific tools and infrastructures. Placanica and Curran (2021) mentioned that the experiences derived from using the practice-based technique can be embedded in the teaching and learning outcomes of courses, particularly in the case where music performance is crucial. Regarding this concept of practice-based learning, the author applied its principle and process to this study.

The instructor designed the course's content and teaching method, which focus on the important skills of 1) melodic dictation, 2) melodic singing, and 3) extension chord singing by evaluating the students' scores from Jazz Ear Training I (course 663107-164), and the pre-test results. The teaching and learning activities included lectures, group practice, solo practice, demonstration, online and offline practice with examples, MIDI audio exercises, in-class assignments, and practice sessions outside school hours. The course assessment methods consisted of quizzes, and midterm and final exams. In addition, the assessment of the expected learning outcomes of the course provided the results of education management according to the proactive education approach with an emphasis on practice.

The end of the academic year 2021 semester was still during the COVID-19 outbreak and the Jazz Ear Training II course was under the adjustment in teaching and learning to an online format *via* Zoom, and teaching materials (e.g., exercises, audio files, demonstration clips, and videos) were prepared related to the practice of auditory skills through Google Classroom.

2. Objective

This study aims to develop students' auditory skills in melody recording, melody singing, and extension chord singing by using an educational management method that focuses on practice-based learning as a guideline for teaching and learning activities throughout the semester.

3. Methods

The instructor designed the educational methods as indicated earlier, which encompasses a backward design curriculum, content development, lessons, tests, and the design of student skill assessment measures that match current jazz curriculum assessments (Sumpowthong, 2021). All of the students enrolled in the Jazz Ear Training course were included in the study, comprised of 18 males and 2 females. Most of the respondents were aged 19 years and had a major in a variety of instruments such as the guitar, drums, double bass, brass, and vocal and piano at 6, 4, 4, 3, 2 and 1, respectively.

3.1 Survey and analysis of the students' weaknesses in learning

The instructor analyzed the results of the pre-learning assessment from the first week of the semester and the students' weaknesses in learning. It was found that melodic dictation, melodic singing, and extension chord singing problems were the main issues, with mean scores ($n = 20$) equal to 32.50, 39.90, and 47.50 out of 100 points, respectively. Additional interviews with the students also showed that most of the students did not meet the required standard of listening skills, or melodic and harmonic singing. This resulted from attending a higher level of music courses, practicing time management, skills in their major instruments, and audio-visual content, all of which needed to be adjusted to the university level of music learning.

In terms of planning and designing the course, the instructor considered student weaknesses and course expectations (CLOs) in order to develop the course for maximum benefit and to achieve the expected learning outcomes of the curriculum (PLOs), as shown in Figure 1.

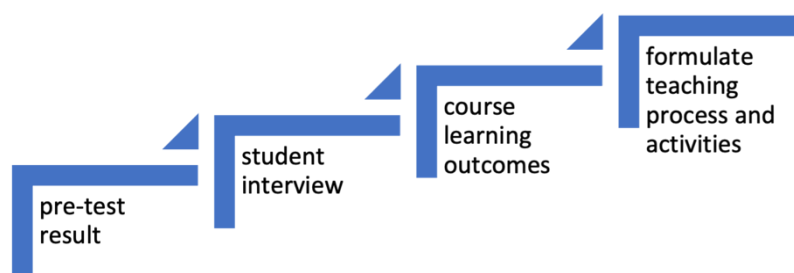


Figure 1: The survey procedure gathered information for instructional design Source: Jazz Department, 2021

The instructor, therefore, designed the course focusing on development and problem-solving regarding melody recording, melodic, and harmonic singing skills by forming a 15-week study plan covering the practice of 3 skills every week, as shown in the lesson plan schedule (Table 1).

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Table 1: Weekly lesson plan

Week	Topics	Learning activities
1	Introduction, pre-test; melodic dictation, melodic and harmonic singing exercise	Lecture Test
2	Song: Have You Met Miss Jones? I Remember You Melodic dictation exercise #1 Singing exercise #1 Classwork #1 [Melodic dictation exercise in harmonic minor]	Demonstration Practice-based learning Sharing and discussion
3	Rhythmic exercise Harmonic progression #1 Melodic dictation exercise #2 Singing exercise #2 Classwork #2 [singing exercise basic scales; harmonic minor in the solfege system]	Demonstration Practice-based learning Sharing and discussion
4	Quiz #1 Harmonic progression #2 Melodic dictation exercise #3 Singing exercise #3 Classwork #3 [Melodic dictation exercise in Harmonic minor with various rhythmic]	Test Demonstration Practice-based learning Sharing and discussion
5	Introduction to extension chord Melodic dictation exercise #4 Singing exercise #4 Classwork #4 [singing exercise basic scales; harmonic minor in solfege system]	Demonstration Practice-based learning Sharing and discussion
6	Extension chord Melodic dictation exercise #5 Singing exercise #5 Classwork#5 [Melodic dictation exercise in Harmonic minor with various rhythmic]	Demonstration Practice-based learning Sharing and discussion
7	Quiz#2 Extension chord singing and analysis: 6 types in circle of fourth, melodic dictation exercise #6 Singing exercise #6 Classwork #6 [singing exercise basic scales; harmonic minor in solfege system]	Test Demonstration Practice-based learning Sharing and discussion
8	Midterm Exams: Dictation and Midterm project	Test
9	Song: Everything I Love, But Beautiful Rhythmic exercise; sixteenth, triplets, dotted, and ties Your own melodic solo [Natural minor]	Lecture Demonstration Sharing and discussion
10	Melodic dictation exercise #7 Singing exercise #7 Classwork #6 [Melodic dictation exercise in Natural minor with various rhythmic]	Demonstration Practice-based learning Sharing and discussion
11	Quiz #3 Melodic dictation exercise #8 Singing exercise #8 Classwork #6 [singing exercise basic scales; natural minor pentatonic in solfege system]	Test Demonstration Practice-based learning Sharing and discussion
12	Melodic dictation exercise #9 Singing exercise #9 Classwork #6 [melodic dictation exercise in natural minor with various rhythmic]	Demonstration Practice-based learning Sharing and discussion
13	Review of overall harmony seventh chord and extension harmony your own melodic solo in 2-4 bars phrasing [Blues]	Demonstration Practice-based learning Sharing and discussion
14	Quiz #4 Melodic dictation exercise #10 Singing exercise #10 Classwork#10 [singing exercise basic scales; harmonic minor in solfege system]	Test Demonstration Practice-based learning Sharing and discussion

Week	Topics	Learning activities
15	Final Exams: dictation and singing test	Test

Source: *Jazz Ear Training II Document*

3.2 Practicing as a teaching approach using the practice-based learning method

3.2.1 The harmonic minor scale and the natural minor scales

In order to develop important skills on the part of the students, the instructor designed guidelines for teaching and learning, issue-based training, and exercises. The instructor began by familiarizing the students with the concept and the sound of the harmonic minor scale and the natural minor scale through a vocal exercise, in addition to a MIDI file, a sound sample that students can listen to. In the online class, the instructor demonstrated how to vocalize and provided examples of singing a melody in the solfege system (Prosser, 2000) before the students practiced and submitted recorded VDO clips for their weekly assignments.

Exercise: Harmonic Minor Reading



Figure 2: An example of a minor harmonic singing exercise

Source: *Jazz Ear Training II Document*

According to Figure 2, the instructor gave an exercise on the concept of combined melody movement, both diatonic and melodic intervals. The students had to listen to the MIDI files and then hum the melody disregarding the solfege system. After the students became familiar with the sound and rhythm, they would hum the melody in the solfege system.

For the harmonic minor scale exercise, the instructor assigned a weekly task where the students submitted record video clips of 12-bar singing per week from the 2nd to the 6th week. The instructor then provided feedback that was useful for each student *via* Google Classroom individually.

Exercise: Natural Minor Reading



Figure 3: An example of a natural minor chorus exercise

Source: Jazz Ear Training II Document

As seen in Figure 3, the instructor designed exercises that also used the concept of combined melody movement, both diatonic and melodic intervals. The exercise requires the students to listen to a MIDI file and assignments in order to compose a short tune using the concept of two-four bar phrasing as a call-and-respond type of lyric, a characteristic of jazz blues in melodic development (Haerle, 1980). The instructor chose some composing assignments as in-class singing exercises and some as singing and melodic dictation exercises after the mid-term exam. For the natural minor scale exercise, the instructor assigned a weekly task where the students submitted record video clips of 20-bar singing per week from the 9th to the 12th week. Again the instructor provided feedback that was useful for each student *via* Google Classroom individually.

3.2.2 Extension chord

The vocal practice or singing in Jazz Ear Training II focuses on the seventh chord in the extension chord. The course content covers three main types of chords: major, dominant, and minor. Each type of chord has two basic extended chords, including:

Type 1: Major chords consisting of major sixth (maj6) and major seventh sharp five (Maj7 #5)

1. Major 6

C⁶

Interval Structure: M3-m3-M2

Chord Formula: 1-3-5-6

2. Major 7 #5

C^{maj7(#5)}

Interval Structure: M3-M3-m3

Chord Formula: 1-3-#5-7

Figure 4: Major-type amplified harmonics

Source: Jazz Ear Training II Document

Type 2: Dominant chord consisting of dominant suspended fourth and augmented seventh

3. Dominant Suspension 4



Interval Structure: P4-M2-m3

Chord Formula: 1-4-5-^b7

4. Augmented 7



Interval Structure: M3-M3-M2

Chord Formula: 1-3-[#]5-^b7

Figure 5: Dominant-type amplified harmonics

Source: Jazz Ear Training II Document

Type 3: Minor chord consisting of Minor Sixth and Minor-major Seventh

5. Minor 6



Interval Structure: m3-M3-M2

Chord Formula: 1-^b3-5-6

6. MinorMajor 7



Interval Structure: m3-M3-M3

Chord Formula: 1-^b3-5-7

Figure 6: Minor-type amplified harmonics

Source: Jazz Ear Training II Document

For extension chord practice, the instructor required the students to practice during weeks 6-12 by practicing singing all of the chord types. The exercise begins with notes 1-3-5-7 according to the structure of the octaves and sound characteristics of each chord type using the circle of fourth and fifth (Harrison, 1998) in order to determine the beginning of the key in singing that is still in the solfege system similar to singing in scale. However, in singing practice, the instructor set the tempo as a quarter note equal to 80 BPM so that the students could develop their singing skills and tempo control. The instructor assigned all of the students to practice singing 2 keys in each category daily and then recorded a video clip for

the instructor to provide feedback and suggestions on how to practice with Google Classroom, as with practicing singing from the scale.

3.2.3 Melodic dictation

Melodic dictation is the skill related to the development of singing in both types of minor scales: natural minor and harmonic minor. During the first half of the semester, the instructor had the students dictate the melody in the harmonic minor scale. The instructor assigned listening and melodic dictation exercises during the weekly lesson in order to evaluate and provide feedback to the students on improving their skills, including recommending other resources (e.g., websites and applications) that assist in developing the listening skill in a single melody. The exercises begin with a 4/4 melody composed only in quarter notes (tempo 50-60 bpm), then continue to a new melody in eighth notes, and then finally to another melody in eight-note triplets.

During the second half of the semester, the exercises advanced to the dictation of melodies in natural minor, composed in 4/4 and 6/8 meters. The task begins with a melody (tempo 50-60) in quarter notes. Then, in the same manner as with the previous exercises, it progresses to melodies in eighth notes, eight-note triplets, and sixteenth notes.

In the online class, the instructor assigned weekly assignments of listening and melodic dictating of the MIDI during the last 15-20 minutes of the class. The assignments were submitted *via* Google Classroom for the instructor to score and provide feedback individually and in groups.

Melodic dictation in **Harmonic Minor scale**
USE ACCIDENTALS ONLY

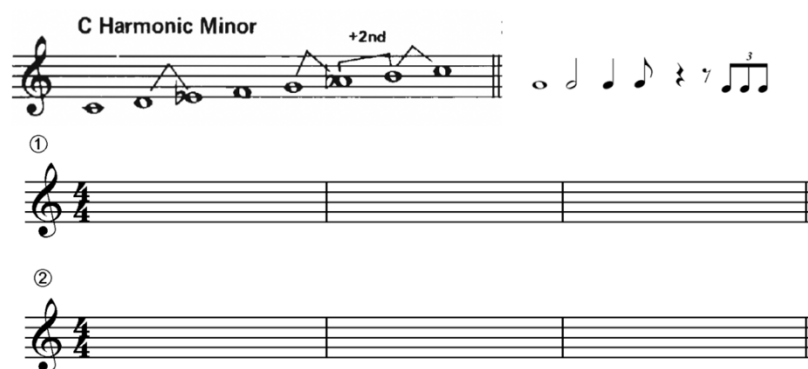


Figure 7: Example of a Melodic dictation

Source: Jazz Ear Training II Document

Figure 7 represents a teaching method, developed from Jamey Aebersold's method, to develop melodic dictation skills in the minor scale by focusing on the ability to vocalize correctly (i.e., Pitch and Rhythm) and the ability to identify the tune that they hear and can sing appropriately (Aebersold, 1989). In addition, the instructor provided samples (e.g.,

melody, melodic line, and compositions) that were appropriate as examples to describe the characteristics of tunes in jazz, pop, and contemporary music. The students had access to the list of songs in each style, which were examples of melodic intervals, to prepare them for the main melodic dictation.

3.3 Assessment of skill achievement

The assessment of the students' achievement was part of the activities, consisting of mini-tests, mid-term exam, a final exam, and assignments. The instructor conducted an evaluation using the scoring criteria, which were divided into two types: 1) a scoring rubric that represented the scoring criteria for practice with the details of the skills that the students had to be able to practice in melodic and extension chord singing; and 2) scoring criteria based on correctness, consisting of rhythm, melody identification, and melody writing in 5 lines (music staff) for the written test regarding the melodic dictation, both harmonic minor and natural minor scales.

PITCH ACCURACY AND INTONATION				
5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
A perfect center of pitch is maintained ALL of the time. No tendency towards sharpening or flattening notes.	A perfect center of pitch is maintained MOST of the time. Student tends to sharp or flat in extreme registers or vocal.	A perfect center of pitch is maintained SOME of the time. Student tends to sharp or flat throughout their vocal range at times	A perfect center of pitch is maintained OCCASIONALLY. Student sharps or flats consistently with some moments of perfect pitch.	A perfect center of pitch does NOT occur. Student has little sense of intonation.

SCALE AND HARMONY SINGING				
5 POINTS	4 POINTS	3 POINTS	2 POINTS	1 POINT
Student sings ALL scales and harmony correctly.	Student sings MOST of the notes in the scales correctly with a minimal number of errors in pitch.	Student sings SOME of the notes in the scales correctly with several pitch errors.	Some notes of the scales are OCCASIONALLY sung correctly with many errors.	Student does NOT sing the correct notes of the scales.

Figure 8: Scoring rubric for evaluating melodic and extended chord singing skills

Source: Jazz Ear Training II Document

4. Results and discussions

The results of the study are presented in two parts: the comparison of pre-and post-test scores and the results of the skill practice.

4.1 Comparison of pre- and post-test scores in the 15th week of the course

The comparison results showed that 20 students had higher mean scores on the post-test compared to the pre-test. The comparison scores consisted of 3 parts: melodic dictation, melodic singing, and extension chord singing. The post-test scores in each part were found to be higher than pre-test score, as shown in Figure 9. According to the results of the dependent sample t-test applied to determine whether there was a statistically significant difference between the pre-test and post-test scores, a significant difference was revealed in all

dimensions at $p = .000$, as shown in Table 2. The results of this study are consistent with the results in *An Experimental Study Intended for Musical Listening Training* (Oztutgan, 2020).

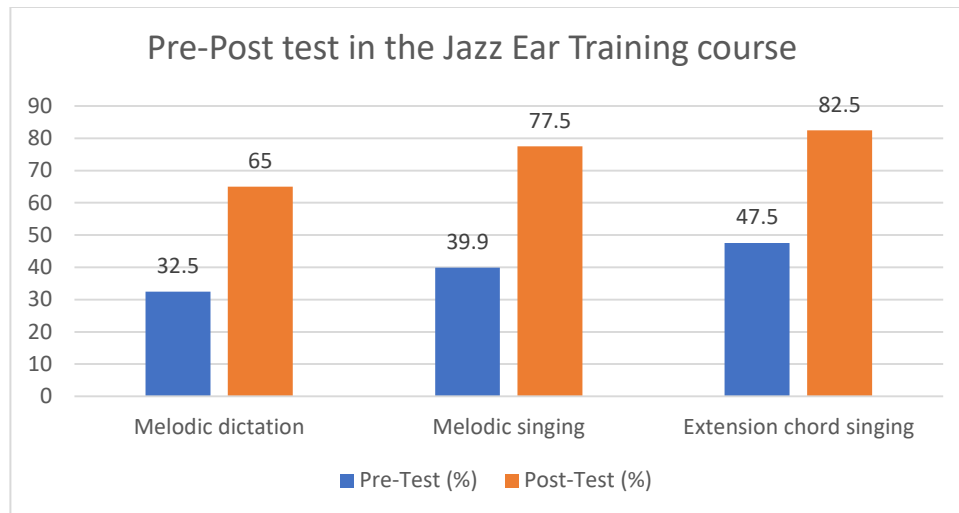


Figure 9: Pre-Post test in the Jazz Ear Training course

Source: Jazz Department, 2021

Table 2. Comparison of the scores on the pre-test and post-test

Dimensions	Measurements	n	Mean	SD	t	df	sig
Melodic dictation	Pre-test	20	16.25	3.66	11.59	19	.00*
	Post-test	20	32.50	6.77		19	
Melodic singing	Pre-test	20	11.19	1.74	19.44	19	.00*
	Post-test	20	23.30	3.11		19	
Extension chord singing	Pre-test	20	14.25	1.55	21.00	19	.00*
	Post-test	20	24.75	2.33		19	

Source: Drafted by the author based on data obtained from this study, 2021

4.2 Skill development

The skill development *via* the practice-based learning approach can be summarized into two points.

4.2.1 The development of the students' melodic and extension chord singing according to the practice-based learning approach

The study found that the students improved in melodic and extension chord singing from methods guided by practice-based learning (Khumyoo et al., 2018). In addition, the results showed that each student had different practice techniques, which affected the variety of abilities in the students. For example, the drum set majors, who are not skillful in singing or reading Western music notation, are more accurate in rhythmic and melodic notation than the students in other majors. Additionally, the voice major students' note-reading and melodic singing skills were improved, as shown in the pre- and post-test scores.

Overall, the study found that most of the students improved and were able to sing tunes from minor, harmonic, and natural scales, as well as the extension chord in the sound quality that should be met for each genre. Moreover, the students had a better analysis of melodic types, which improved melodic dictation, all of which are essential skills for learning and practicing jazz (Russell, 2017).

4.2.2 The development of students' melodic dictation practice-based learning

The study found that using sample exercises and introducing melodic listening resulted in an improvement of melodic dictation in harmonic minor and natural minor scales. Most of the students tended to score continuously higher across the four quizzes and continued to improve in rhythm and note identification, accurate pitch dictation, and composing a tune on the music staff. This improvement in melodic and extension chord singing is directly associated with the listening skills for analyzing sound quality, melody, harmony, and melodic dictation under jazz ear training (Solli et al., 2021). Moreover, applying practice-based learning and regularly testing the students' outcomes affect their ability to evaluate and improve their skills in playing musical instruments (Tayrattanachai, 2019).

5. Conclusion

Implementing practice-based learning in Jazz Ear Training II focuses on motivating students to practice their skills, supporting and guiding them in training methods, and preparing sample music scores and MIDI files for the students to practice independently. The assessment of the CLOs had an average score of 4.59 out of 5. It was concluded that all of the students achieved course learning outcomes with the method of practice-based learning by resolving their skill issues in accordance with the objectives of improving jazz ear training, melodic singing and listening, and melodic dictation skills. Moreover, satisfaction with the subject was at a good level, with an average of 4.60 out of 5. Additionally, the results of the verification of learning achievement by the academic committee found that the students achieved the CLOs, which resulted in the achievement in PLOs of program-level. Lastly, the results of this study can be applied to other similar courses.

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