

Article

The impact of developing pop music on music infrastructure construction and education systems

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Abstract: Sustainable development within music education is essential, particularly in ensuring that popular music can continually and effectively serve educational systems. This research aims to 1) examine pop music chord progression, 2) develop a chord progression book specifically for teaching music students, and 3) evaluate the effectiveness of this educational tool in improving music composition skills. A mixed-methods approach, incorporating both qualitative and quantitative research, was used. Research tools included an interview guide, Ioc forms, a textbook, and a performance assessment form. Interviews were conducted with five experts in pop music composition, while a group of 14 undergraduate music students participated in the experimental study. These methods evaluated how teaching popular music chord composition enhances students' practical composition abilities. The findings indicate that 1) chord composition in popular music primarily involves five aspects: melody, rhythm, chord structure, music form, and melody development techniques, with melody and chord as the foundational elements; 2) the chord progression textbook for popular music differs from traditional composition theory texts, combining theory and practical application with a focus on chord progression techniques; and 3) instruction in popular music chord composition significantly enhances students' skills in melody creation, production, and listening, ultimately fostering practical music creation abilities. This study supports the sustainable integration of popular music in both music infrastructure construction and music education system development, offering insights into how such integration can drive long-term advancements in music education.

Keywords: education system; sustainable development; composition teaching; popular music; chords and melodies; music infrastructure construction; development of music education

1. Introduction

1.1. Research background

For the sustainable development of music education within the educational system, the Songwriting course is designed as a composition course aimed at cultivating students' comprehensive musical literacy and creative abilities in music composition. It is usually offered in college music majors. Melodic composition is not as complex as band composition and does not need to be entirely based on the elements of composition (Harmony, musical form, polyphony, orchestration), so this course is quite different from the traditional theory of composition techniques that composition majors learn. However, in China, a large number of knowledge points of this course are still dominated by the traditional theory of composition technology. In the concrete teaching, the weight of composition theory teaching is much greater

than that of composition practice teaching, resulting in students still can't write after learning the composition course. Under the influence of this traditional education model, most students have lost their confidence and interest in learning composition (Yang, 2023).

Traditional song writing courses focus too much on theory, and students can only passively accept it rather than actively seek it. This teaching method restricts the expansion of students' musical thinking and the stimulation of creative inspiration, and cannot improve students' creative ability (Liu, 2014). In addition, the song creation courses in my country mainly focus on the creation of a single melody, lacking thinking about the relationship between melody and harmony (Zhou, 2010). If you only consider the melody without considering the harmony when writing a melody, then you only have the concept of mode, but not the concept of tonality (Zhao, 2018).

The composition methods of pop music are completely different from traditional composition techniques. It is a composition method based on chord progression, which means that the melody is built on chords (Kachulis, 2010). The traditional way of music creation is to create melody through the development of melody. The melody is independent and does not need to rely on harmony. Compared with traditional composition techniques, pop music creates melody through chord progression. This creation method pays more attention to practice, and creators can create without learning too many complicated composition technology theories (Xin, 2011). Therefore, we try to use popular music composition methods to teach third-year music students, trying to enhance their confidence and fun in learning composition, and improve their practical ability in composition.

The researcher is a composition teacher at a Chinese university. The teaching targets are third-year music major students at the university. The textbook used is "Song Analysis and Writing" (Fang, 2014). The assessment method is two-way examination paper assessment and practical assessment, each accounting for 50%. During the long-term teaching practice, the researchers found that the book "Song Analysis and Writing" is biased towards theoretical learning and ignores the needs of actual creation. For third-year music students in college, this book cannot help them improve their ability to create music. The main manifestations are: in terms of test paper assessment, students generally score higher in the multiple-choice, fill-in-the-blank, and question-and-answer modules, but low in the melody writing module; in terms of practical assessment, the number of people who can create a melody with a complete structure within the specified time. Less often, most students can only compose short melodic fragments. In addition, there are few students who can improvise melodies through musical instruments.

The method of pop music composition is based on harmony, which is different from the traditional song writing method based on melody development skills. This study attempts to use the method of pop music composition to guide composition teaching and verify whether it can further improve students' practical ability of music creation.

1.2. Practical implications

The findings of this study have significant implications for educators. Teachers in resource-limited classrooms can implement the chord progression teaching method using basic instruments like guitars, keyboards, or even free online tools such as Muse Score. For resource-rich environments, educators can integrate advanced music production software like Logic Pro or GarageBand to enhance the learning experience. Additionally, the teaching method promotes student-centered learning by balancing theoretical knowledge with practical application, which can rekindle students' interest in composition. Educators are encouraged to adopt differentiated instruction by tailoring lesson plans to meet the diverse needs of students, particularly those with weaker musical foundations. For example, group projects that involve peer collaboration can help less confident students while allowing more advanced learners to experiment with complex chord progressions.

1.3. Potential impacts on educational infrastructure and policy reform

The proposed textbook and teaching methods not only address existing gaps in music composition education but also have the potential to influence broader aspects of educational infrastructure and policy in music education. By shifting the emphasis from traditional, theory-heavy instruction to a more practice-oriented, student-centered approach, this study highlights the importance of aligning teaching practices with the practical needs of students in the modern music industry (Cui et al., 2024; Gordon et, al., 2023; Hebert, 2022).

One of the significant impacts lies in the redefinition of teaching resources within the educational infrastructure. For instance, incorporating pop music composition methods based on chord progressions can encourage the use of cost-effective tools such as online platforms and basic musical instruments in classrooms with limited resources. This aligns with equitable education goals, ensuring accessibility and inclusivity for students from diverse socio-economic backgrounds (Alexander, 2021; Green, 2020).

From a policy perspective, this approach could inform curriculum reform by advocating for the integration of modern, practice-based methodologies into existing music education frameworks. Policymakers may consider revising assessment criteria to prioritize practical skills, such as melody improvisation and composition, over rote theoretical knowledge. Additionally, this methodology underscores the importance of professional development programs for educators, equipping them with the skills and tools necessary to implement these innovative teaching practices effectively (Smith, 2021; Johnson, 2022; Williams, 2023).

Furthermore, this study sets a precedent for using student performance data as a feedback loop for refining teaching materials and methods. Such evidence-based adjustments can lead to the development of standardized teaching guidelines for pop music composition, which could serve as a model for other disciplines within the arts. By bridging the gap between theory and practice, these reforms could inspire a paradigm shift in music education, fostering creativity and confidence among students and preparing them for real-world challenges (Davis, 2024; Martinez, 2020).

2. Literature review

2.1. Exploration of teaching methods in song composition courses

Teaching methods for songwriting courses can vary based on educational level, student needs, and goals. Most researchers agree that songwriting classes typically begin by teaching the basics of music theory and harmony. This includes basic elements such as scales, intervals, tonality, chords, rhythm, and more. Students need to understand these theoretical concepts in order to be able to create music better (Fang, 2014). The counterargument is that actual music making is at the heart of the course. Students apply the theoretical knowledge they acquire to the practice of songwriting. They can create original songs using musical instruments, sound arrangement software, composition tools, and more. Courses can include a series of creative exercises to help students gradually develop creative skills. These exercises can involve writing lyrics, creating melodies, producing and arranging (Xin, 2009).

Some researchers believe that students should not only compose songs, but also learn to analyze and evaluate their own and classmates' works. This helps them better understand the structure and expression of the music, while also providing opportunities for improvement. Students can study different musical styles and genres and learn about their history and characteristics. This can inspire them to create different types of songs and broaden their creative horizons (Liu, 2021). Sometimes collaborative writing can be part of the curriculum. Students work in groups to write songs, which helps them learn to work in a team and share different creative perspectives. Some courses may include a session in which students perform or record their own songs. This helps them understand the performance and recording process, and how to present songs to an audience. At the end of the course, a work display or a performance of student songs can be organized to give students the opportunity to show their creative results and obtain feedback from the audience (Xin, 2005).

It can be seen that the exploration of teaching methods in song composition courses is mainly based on two modules: practice and theory. The song composition course in my country focuses on the study of composition theory. Wang (2020) conducted a survey on domestic song writing courses and combined it with his own teaching practice. He found that theory-based composition courses cannot improve students' creative skills. Liu (2014) believes that traditional composition courses focus too much on theory, and students can only passively accept it without actively seeking. This teaching method restricts the expansion of students' musical thinking and the stimulation of creative inspiration. Zhou (2010) is a composition teacher at Hanshan Normal University. He has investigated and researched the problems existing in Chinese song writing courses. He believes that China's song writing courses are mainly based on single melody writing and lack of thinking about the relationship between melody and harmony. Zhao (2018) believes that if you only consider the melody without considering the harmony when writing a melody, then you will only have the concept of mode, but not the concept of tonality.

To sum up, there are many problems in song composition courses based on traditional theoretical teaching methods. We need a new teaching method to improve the shortcomings of songwriting courses.

2.2. The music chord progression teaching method

Popular music composition is a creative and diverse field that spans a variety of styles and genres, from pop and rock to electronic and hip-hop. Writing a pop song usually starts with finding inspiration (Brackett, 2016). This can come from your personal experiences, emotions, observations, stories or other musical compositions. Lyrics are the heart of the song. Start writing lyrics that express your theme, emotion, or story. Lyrics often include poetic, lyrical, dialogue, or storytelling elements. Chord progressions are the harmonic foundation of a song. Choose a chord progression that fits the mood of your song, and decide the key to the song. Common chords in popular music include C, G, Am, F, etc. Melody is the soul of the song. Create a catchy melody that fits the lyrics and chord progression. The melody should be easy to remember and easy to sing. The arrangement determines the musical style and sound of the song. Choose instruments, arrange harmonies, and determine the structure of your song, such as choruses, breaks, and transitions. Popular music composition is a creative and individual process, and there is no one fixed method (Josefs, 1996). The most important thing is to use your creativity, express your voice and story, and keep learning and growing.

The melody creation of popular music relies on chord progression, which means that the melody is generated on the basis of chords. A chord progression is an arrangement of a series of chords used to create the harmonic structure of music. Learn common chord progressions, such as the I-IV-V chord progression, and how to use them in your music. Chord progression composition involves setting up a chord progression and then writing a melody based on this chord progression. The advantage of this composition method is that students do not need to learn melody development techniques to compose music. This avoids complicated composition technical theories, reduces the difficulty of learning, and also helps to promote students' enthusiasm for learning composition. For example, Jimmy Kachulis applied the chord composition method in his popular music composition course, emphasizing that composition teaching should focus on practice and participation rather than composition theory (Kachulis, 2010). In addition, Professor Xin Di also uses the teaching method of chord progression composition in his own composition teaching. He combines traditional harmony tutorials with chord progression composition teaching to make composition teaching easier (Xin, 2011). Chord progression is often used in popular music. This is a common creation phenomenon, but there are few researches on its theory and method. Jimmy Kachulis used the chord progression method of composition in his popular music composition course, but did not give a detailed theoretical introduction to this method. Xin Di is a professor at the Xinghai Conservatory of Music in China. He tried to use the method of chord composition in teaching and wrote practical composition textbooks from the aspects of harmony theory, keyboard harmony and chord composition. His teaching materials make composition classes easier and more fun. However, he did not examine whether such teaching was effective in improving students' practical ability to compose music.

As can be seen from the above literature review, the research on the composition of popular music chords involves many aspects, but there are few studies on the development of the composition course of popular music chords. What is more worth paying attention to is what effect and significance does the method of chord progression in popular music have on composition teaching? Can it improve students' creative practice ability? Further verification and analysis are still needed.

2.3. Literature review in international context

Internationally, teaching methods for music composition vary widely, reflecting cultural and educational differences. For example, Kachulis (2010) emphasizes practical approaches, focusing on chord-based composition to inspire creativity and engagement. Similarly, Brackett (2016) highlights the significance of melody and harmony as foundational elements in songwriting. However, traditional Western music education often prioritizes theoretical rigor over practical application, which may not cater to modern students' creative needs. In Japan, music education integrates traditional and contemporary techniques, fostering a holistic learning experience. By broadening the literature review to include these international perspectives, this study positions itself within the global discourse on music education, highlighting how chord progression teaching bridges the gap between traditional and modern pedagogies. These approaches collectively underscore the importance of balancing theoretical understanding with hands-on practice, aligning with the core objectives of this research.

2.4. International context and comparative analysis

Music education methods vary across the globe, reflecting diverse cultural, pedagogical, and technological influences. In Western contexts, Kachulis (2010) has been a notable proponent of chord-based songwriting, emphasizing practical application over theoretical depth. His approach advocates teaching students to compose melodies through chord progressions, integrating techniques like repetition and motif development. Kachulis' pedagogy highlights creativity and accessibility, aiming to engage students regardless of their technical background. Similarly, Brackett (2016) underscores the importance of harmony as a foundational component in popular music, aligning closely with the principles of chord progression composition. In contrast, traditional composition methods prevalent in Western classical music education, such as those discussed by Josefs (1996), focus heavily on melodic development through horizontal expansion. These methods prioritize rigorous theoretical frameworks and often demand advanced analytical skills, making them less accessible for beginners. While these approaches ensure a deep understanding of musical form and structure, they may stifle creativity in students who lack a strong theoretical foundation. Collaborative songwriting and improvisational methods are gaining traction as alternative pedagogies. Collaborative methods, as noted by Liu (2021), encourage group work, allowing students to share creative perspectives and develop teamwork skills. Improvisational

techniques, emphasized by Xin (2005), foster spontaneity and creativity, enabling students to explore musical ideas without over-relying on theoretical constructs.

In China, songwriting courses often emphasize traditional composition techniques, focusing on single melody creation while neglecting the interplay between melody and harmony (Zhou, 2010). These methods may lead to a lack of tonal awareness and hinder practical music creation. The chord progression teaching approach introduced in this study bridges this gap by aligning with the international trend of balancing theory with practice. Unlike Kachulis' entirely practical orientation, this study incorporates elements of melodic development techniques, such as variation and retrograde, to add theoretical depth while maintaining a focus on practical application. By blending the systematic rigor of traditional methods with the intuitive nature of chord progression composition, this textbook adapts to the needs of Chinese music students while drawing inspiration from international best practices. This hybrid approach not only addresses the unique challenges of Chinese music education but also enriches the global discourse on music pedagogy.

3. Methodology

3.1. Research type

This study uses a mixed research method that combines quantitative and qualitative research to comprehensively and in-depth explore the effectiveness and practicality of the "Popular Music Chord Progression Book". Mixed research combines quantitative and qualitative data collection and analysis methods to obtain information from different dimensions and provide answers to research questions. In this study, quantitative research will help collect a large amount of data to describe students' overall acceptance and learning effects of The Book of Popular Music Chord Progressions. Qualitative research goes deep into student's subjective feelings and experiences about teaching materials, teaching methods, and learning experiences, helping to reveal potential problems and optimization suggestions.

From 100 Chinese students, 14 students were selected as experiment object, with the purposive sampling as follows:

- 1) Must be third-year students in the Music Department: The research sample is limited to the group of third-year students in the Music Department of Pingxiang University. Since the song writing course is a required course for music majors, choosing this group as a sample is more in line with the actual situation. consistent with the research objectives.
- 2) Must have basic music theory knowledge: In order to ensure that the research samples can perform staff writing and harmony analysis in teaching practice, the researchers will select students who have received basic music theory teaching as samples.
- 3) Must have basic piano knowledge and skills: In order to ensure that the research samples can play harmony and melody on the piano, the researchers will select students who have received basic piano teaching as samples.

Through purposeful sampling, the researcher will select students who meet the above conditions as samples to better explore the effectiveness and teaching results of the "Popular Music Chord Progression Book". The selection of samples is also

conducive to evaluating the practicality and applicability of teaching materials and provides a basis for generalizing research results.

3.2. Data collection

The study relied heavily on teaching experiments. In the teaching practice, the researchers carefully arranged the semester teaching plan of the popular music chord progress writing course. In addition, there are detailed lesson plans for each lesson. There are 16 sessions in this course, with exams scheduled for sessions 8 and 16. In this section, the researchers listed three test scores for the course and analyzed each student's performance on each test separately. Starting in January 2024, the researchers conducted a 4-month teaching practice, with a pre-exam test on 5 January 2024, a midterm test on 8 March 2024, and a final test on 10 May 2024. The results of each test are recorded and analyzed, and the data differences between them are compared to evaluate the performance of students after learning the popular music chord progression composition textbook.

Table 1. Lesson plan of pop music chord progression course.

Lesson Plan of pop music chord progression course			
Lesson	Topic	Student Activiti (follow objective)	Duration
	Knowledge	Pre-test	min
1	Melody	Melody line, rhythm, beat	45 min
2	Melody	Mode, tonality, timbre, register	45 min
3	Chord	Triad, triad inversion	45 min
4	Chord	Seventh chord and seventh chord inversion	45 min
5	Chord	Ninth chord	45 min
6	Chord progression composition	Write melodies in one tone	45 min
7	Chord progression composition	Write the melody in two notes	45 min
8	Mid-term exam	Mid-term exam	90 min
9	Chord progression composition	Write melodies in multiple notes	45 min
10	Chord progression composition	The use of dissonance	45 min
11	Chord progression composition	Melody on multiple chords	45 min
12	Chord progression composition	Chord formula	45 min
13	Melodic development technique	Repetition and variation	45 min
14	Structure of music	One-paragraph (A)	45 min
15	Structure of music	Binary form (A, B)	45 min
16	Final exam	(Summative test with three expert)	90 min

The researcher has set the criteria for the level of student test evaluation scores as follows:

- 4.50–5.00 The level of performance was at the highest level.
- 3.50–4.49 The level of performance was at the high level.
- 2.50–3.49 The level of performance was at the middle level.
- 1.50–2.49 The level of performance was at the low level.
- 1.00–1.49 The level of performance was at the lowest level.

During the interview, participants discussed the importance of melody, chord, rhythm, musical structure and melody development techniques in popular music chord progression composition, the difference between chord progression composition techniques and traditional composition techniques, and the advantages of chord progression composition techniques. Participants can explore issues related to it, not just those issues. Participants discussed their views in a 60-90-min interview (As shown in Table 1). A longer period of time is helpful to further explore the technical principles and methods of chord composition in popular music. Interview methods seek data saturation. After the sample size was determined, data collection stopped due to saturation or lack of insights from new topics or further interviews. After a thorough examination, the research team ended the interview because they were no longer getting new information. To facilitate an open dialogue, we conducted individual interviews. Because of their potential effect on participants' emotions, the researchers were passive. Active listening, asking questions for clarification, and a collaborative environment encourage individuals to share their ideas. With the participants' consent, the interview will be recorded in audio format to capture their full voice and preserve their experience. The recording was recorded word for word.

3.3. Data analysis

Qualitative analysis of interview data: First, the interview recordings are transcribed verbatim, and the data is encoded in order to classify similar content. Next, using content analysis, expert 'responses are analyzed to discover themes and patterns. By combing through the interview data, the researchers will summarize the expert 'attitudes, feelings and challenges to the Popular music chord composition teaching, so as to provide rich qualitative information for subsequent research.

Students are tested three times, namely, pre-test, mid-term test and final test, and then the scores of the three tests are analyzed to compare whether the scores of the three tests have increased, so as to prove whether the composition teaching of chords is effective for students.

Calculate the standard deviation of the student's rating. A smaller standard deviation indicates that students' evaluation of teaching effectiveness is more consistent, while a larger standard deviation indicates that students' evaluation of teaching effectiveness is more fragmented.

4. Result

4.1. The main content of pop music chord progression book

The Chord Progression Composition Tutorial is suitable for songwriters of all levels-from beginners who are just getting started with composing to experienced musicians. This book explains the chord-based melody creation method, and has a large number of example analysis and some practical exercises. This new method of teaching melody writing is based on using your hearing and playing, which makes songwriting easy, fun, and more intuitive. In general, this book has three clear teaching goals: First, to help you master the method of creating melody through

chord progression. Secondly, master the common musical structures of songs, such as the writing of verses and choruses. Finally, it helps you improve your ability to improvise and compose. Learning how to compose with chord progressions will have a profound impact on your writing. After completing these lessons, you will be able to: master various motive composition methods and create melodies based on different chord progressions. Richly develop the motive into a complete section of the song. Write contrasting paragraphs using the most common techniques in modern pop music.

Songs are developed from the combination of four aspects: melody, harmony, form and lyrics. When you compose a song, you'll be working on these four areas and constantly switching between them. A motive for a chord progression might give you a melody, or a lyric might give you an idea for a musical form. This book is about melody composition, so the melody should be your primary focus as you do these exercises. After completing the study of this book, your attention on the melody will be rebalanced to other elements. This book will improve your ability to write melodies, while other books will improve your abilities in other aspects of composition.

4.1.1. Single note melody writing

The easiest way to create a melody based on chords is to first identify the inner tones of the chord, which are the component tones of the chord. Once you identify them, you can use them to build melody lines. Although the method examples in this book are all melodies based on simple chords, you can actually write melodies over any chord using the same method.

The simplest melodies are often built on a single chord. Such a melody has three obvious advantages: it is easy to compose, it is easy to sing, and it is easy to remember-especially for your audience to remember. This last advantage is extremely important. If your audience can sing the melody you create, they will remember it. Below is **Figure 1**.



Figure 1. Example of melodic writing in one tone.

Source: Guo (2023).

Please play and listen. Do you remember how the chord tone "G" comes from the chord? However, it is just one of many chord tones you can choose from. Since the melody is composed entirely of the same note, the progression of the melody can be described as a straight line. The melody line remains at the same pitch, neither ascending nor descending.

4.1.2. Two-tone melody writing

Choosing two notes from a chord for melody writing is richer than using one note for melody writing. You can create ascending, descending, or zigzag melody lines. This kind of melody is not only more pleasant to listen to, but also maintains the characteristics of being easy to sing. Below is **Figure 2**.



Figure 2. Examples of two-tone melodic writing.

Source: Guo (2023).

Play and listen, paying close attention to the pitch and progression of the two chord tones, as well as the ascent and descent of the melody line.

4.1.3. Three-tone melody writing

You can also write melody lines using three or more chord tones. This technique not only makes your melody jump among the chords, but also brings a very rich sound effect to the melody. This kind of melody is more difficult to sing, which also allows the singer and the lyrics to get outstanding performance. Below is **Figure 3**.

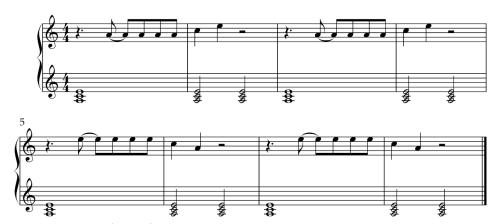


Figure 3. Examples of three-tone melodic writing.

Source: Guo (2023).

Please play and listen. Do you hear the notes from the A minor triad? You can use arpeggios to write many different melodic lines: ascending, descending, arching, inverted arching, or zigzag.

4.1.4. The use of chord overtones

The sounds that are not included in the chord are the chord outtones. Common

chord outtones include passing tones, auxiliary tones, adjacent tones, etc. By using these chord overtones, the melody shape can be enriched.

Below is an example of using transitive tones. You can connect two adjacent chords with a note between them. This note is called a passing tone. The melody line of passing notes can be ascending, descending or zigzag. Below are **Figures 4** and **5**.



Figure 4. Examples of passing sounds.

Source: Guo (2023).

Play and listen to see if you hear the same chord sounds as in Lesson 2, here connected by passing tones. It can be seen that passing tones can enrich the melody line even more.

Here's another example of using auxiliary sounds.



Figure 5. Examples of auxiliary sounds.

Source: Guo (2023).

Please play and listen. As you listen, compare it with the example in Lesson 1. Can you hear the chords decorated by the auxiliary notes? Can you hear the zigzag melody shape?

4.1.5. Melody writing for multiple chords

Earlier we learned how to write a melody over one chord. Once you learn this skill, melody writing begins to span from one chord to another. In this lesson we formally enter the melody writing of multiple chords. This skill is particularly important for a songwriter, because real-life creation often involves the use of multiple chords.

The song below uses two chords and has a richer melody line than the previous example. Look carefully at the melodic progression between the two chords. Below is **Figure 6**.





Figure 6. An example of composing with two chords.

Source: Guo (2023).

Please play and listen, pay attention to the sound effects caused by the alternation of two chords, and perceive how the melody develops between the two chords: second progression, third progression, jump, straight line, wave shape, zigzag shape, and what chord overtones were used.

These are the core parts of the book, but not all. The core part of the book is analyzed in order to explain the method and concept of chord composition, which is different from the general sense of melody composition, but a new creation concept.

4.2. Chord progression composition has its own special knowledge system

Based on the above analysis, it can be concluded that the knowledge related to chord progression and composition is constructed around five modules: melody, chord, music structure, rhythm, and melody development skills. Each module is both independent and closely related. They are different knowledge points, but they are All related to chord progression composition. From a partial observation, chord progression composition has its own knowledge system in terms of melody, harmony, musical structure, rhythm, and melody development techniques. It is different from the traditional theoretical composition textbooks. It is constructed around the chord progression composition method theory. In terms of melody, how to create melody through chord progression is the focus of learning, rather than the systematic theoretical knowledge of melody. In terms of chords, chord progressions and chord formulas are the focus of learning, rather than traditional Western harmony theory. In terms of music structure, the structure of songs is the focus of learning, rather than complex forms such as rondos and sonatas. In terms of rhythm, rhythm patterns and rhythm styles are the focus of learning, rather than systematic rhythm organization theory. In terms of melody development techniques, the focus is on the melody development techniques commonly used in songs, rather than all the development techniques involved in music composition. In general, the construction of chord progression composition teaching materials should construct theories around chord progression composition methods, and knowledge closely related to it should be

focused on, while knowledge that is not closely related can be included in the scope of understanding, or even ignored. Below is **Figure 7**.



Figure 7. Examples of creating melodies through chords.

Source: Guo (2024).

4.3. Melody and chord are the two main elements of popular music composition

Summarizing the interview materials of the three experts, it can be seen that chord progression composition has its own characteristics in terms of melody, chords, musical structure, rhythm, and melody development. Among them, melody and chords are the most important knowledge points. In terms of melody, chord progression composition reflects the relationship between melody and harmony, not the horizontal development of melody. That is to say, use the chord progression composition method to create a melody. Chords are the basis. If there are no chords, there will be no melody. In specific creative practice, the chord formula must be established first, and then the melody can be written based on the chord formula. The key point of this method is that the notes written come from the chord. This creative method greatly reduces the difficulty of melody writing, because if the melody is not derived from chords, but directly created, then one must learn melody development techniques, but the theory of melody development techniques is complex and profound. It is difficult both in theoretical study and creative practice. In terms of chords, chord formulas are the focus of learning, because the first step in the chord progression composition method is to create chord formulas. Only by learning various chord formulas can you create different types of melodies. In addition, learning chord formulas can also help you understand the principles of chord progression, which is a backward learning method. In traditional composition teaching, chord progression theory precedes chord formulas, because only when the principles of chord progression are clear can chord formulas be created based on the principles of chord progression. Obviously, this learning process is tedious and requires students to have enough patience. But if they learn chord formulas first, students can skip those tedious chord progression theories, and they can experience the principles of chord progression in the practice of creation and performance. Below is **Figure 8**.



Figure 8. Example of chord progression composition.

Source: Produced by Guo (2023).

4.4. Musical structure, rhythm, and melody development are secondary knowledge points for chord progression composition

Musical structure, rhythm, and melody development are secondary knowledge points for chord progression composition. In terms of music structure, emphasis should be placed on teaching song structure rather than all music structures, because the chord progression composition method is aimed at song creation. Since it is song creation, there is no need to learn those large musical structures. However, in specific teaching, we still need to follow the general principle of learning music structure, that is, from small to large, starting with phrases, then sections, then two sections, and so on. In terms of rhythm, rhythm style is the focus of learning. The chord progression composition method is freer than the traditional composition method with strict logic. It gives the creator more room for improvisation. Therefore, what kind of music style can different rhythm patterns express? It is content that learners care more about. However, if the learner does not have basic rhythm knowledge, he should start with the simplest rhythms, such as whole notes, half notes, quarter notes, eighth notes, etc. In terms of melody development, some melody development techniques can be combined in the teaching of chord progression composition, but students' acceptance level must be considered, and special attention should be paid to controlling the proportion and difficulty of theoretical teaching. Some melody development techniques commonly used in song creation can be combined, such as Repetition technology, modular technology, and variation technology. If the student's acceptance level is relatively low, you can also give up trying in this area.

Generally speaking, chord progression composition has its own special knowledge system. Melody and chords are the core parts of this knowledge system, while musical structure, rhythm, and melody development are secondary parts. In terms of melody creation, it is different from the traditional composition technology theory with strict logic, but a practical creation method based on chords. Creating a chord progression and creating a melody based on the chord progression are the two major steps of this creative method. Therefore, chords and melody constitute the main knowledge framework of chord progression composition. It can be seen that simple theory and strong practicality are the typical characteristics of chord progression composition. In teaching, knowledge such as musical structure, rhythm, and melody development should be built around creative practice rather than focusing on in-depth explanations of theoretical knowledge.

4.5. Chord composition teaching can improve students' creative practice ability

In the test, the researchers divided the test content into four modules: lyrics, melody, production, and listening ability. In the pre-examination test, the students' scores were generally low, among which the scores of melodies, production and listening ability were relatively poor, the average scores of these three items were 2.7, 2.29 and 2.4 respectively, and the average scores of lyrics were the highest, 3.2. In terms of the overall average score, it is only 2.65, which belongs to the average level. In the mid-term test, the scores of students in melody, production and listening ability have improved significantly, and the average scores are 2.93, 2.50 and 3 respectively. The score of melody was 0.23 higher than that of the pre-test, the score of production was 0.21 higher than that of the pre-test, and the score of listening was 0.25 higher than before. It is worth noting that the performance of lyrics has not been improved, because lyrics are not the main content in the composition teaching of popular music chords, so students' performance in lyrics has not been improved. In the final assessment, students' scores in melody, composition and listening increased again, with the average score of melody being 4.07, which was 1.37 higher than that of the pre-test and 1.14 higher than that of the mid-term test. The average production was 3.36, an improvement of 1.07 compared to the pre-test and 0.86 compared to the mid-term test. The average listening score was 3.79, an increase of 1.39 compared to the pre-test and 0.79 compared to the mid-term test. It can be seen that in the three tests, the average score of the students gradually increased and finally reached the high rating.

5. Conclusion, discussion and recommendation

5.1. Conclusion

5.1.1 Basic conclusion

The composition of pop music chord progressions includes five aspects: melody, rhythm, chords, music structure, and development techniques. In terms of melody, the melody in C major is the most suitable for teaching. Students should first learn the melody in C major and then extend it to other keys. In terms of rhythm, the combination of quarter notes and eighth notes is used for teaching. This rhythm is simple and easy to learn and is the best solution for students to learn chord progression composition at the beginning. In terms of chords, the harmony of I-IV-V-I is the basis, and secondary chords are added on this basis. In terms of music structure, the common two-part form (A B) is used for teaching, namely the verse and the chorus. In terms of development techniques, the use of repetition techniques for teaching can fully train students to master the music score.

Although popular music chord composition textbooks contain melody, rhythm, chords, musical structure, and development techniques. But chords are the basis of chord composition in popular music. Based on the interview materials of five experts, it can be seen that chord composition has its own characteristics in melody, chord, music structure, rhythm, melody development technology and so on. Among them, melody and chord are the most important knowledge. In terms of melody, chord

progression composition reflects the relationship between melody and harmony, rather than the horizontal development of melody. In other words, using the method of chord composition to create melodies. The chord is the foundation. If there are no chords, there is no melody. In the concrete creation practice, chord formula must be established first, and then the melody can be written according to the chord formula. The point of this method is that the notes written come from chords. This method of composition greatly reduces the difficulty of melody writing, because if the melody is not derived from the chord, but directly composed, then the melody development technique must be learned, but the theory of the melody development technique is complex and profound. It is difficult in both theoretical research and creative practice. In terms of chords, chord formulas are the focus of learning, because the first step in chord progression composition methods is to create chord formulas. Only by learning different chord formulas can you create different types of melodies. In addition, learning chord formulas can also help you understand the principles of chord progression, which is a reverse learning method. In traditional composition teaching, chord progression theory takes precedence over chord formula, because only when the principle of chord progression is clear, can chord formula be created according to the principle of chord progression. Obviously, this learning process is tedious and requires students to have enough patience. But by learning chord formulas first, students can skip the tedious theory of chord progression and experience the principles of chord progression in the practice of composing and playing.

The popular music chord composition teaching material is different from the theoretical composition teaching material, the theoretical composition teaching material emphasizes the systematic combing and induction of the composition theory and focuses on the theoretical explanation in the specific teaching. However, the teaching material of chord composition in pop music emphasizes practice more. It can be seen from the interviews with five experts that they almost unanimously believe that learning chord composition in pop music does not require in-depth learning of composition technical theories but learning chord composition through musical instrument performance. When researchers construct the teaching material of chord composition in popular music, each chapter reflects the practical link rather than the straightforward description of theory. For example, when writing the chapter of chord, the basic knowledge of chord is briefly introduced first, followed by chord performance, and there are exercises for harmonic performance under each knowledge point. To deepen students 'hearing and performance ability of harmony. This is also the reason why students have greatly improved their listening ability after learning the popular music chord development composition textbook. In addition, music production is closely related to chords, whether it is the creation of melody, or the orchestration of melody, harmony is the foundation. The popular music chord development composition textbook grasps the internal connection between melody and harmony, so it can expand the scope of musical practice, such as improvisation, improvisation, orchestration, production, etc. Theoretical composition textbooks are more about teaching students how to write a song. There are obvious differences between them in teaching objectives. Therefore, students have also been improved in production after learning the popular music chord

development composition textbook.

Through teaching practice and evaluation, it can be proved that the popular music chord composition textbook can improve students' melody, production and listening abilities, which is consistent with the research hypothesis. In the final examination, students' scores in melody, production and listening were greatly improved, among which the average score of melody was 4.07, which was 1.37 higher than the pre-test and 1.14 higher than the mid-term test; the average score of production was 3.36, which was 1.07 higher than the pre-test and 0.86 higher than the mid-term test; the average score of listening was 3.79, which was 1.39 higher than the pre-test and 0.79 higher than the mid-term test. It can be seen that in the three tests, the average score of students gradually increased and finally reached a high score.

It is worth noting that 2 of the 14 students did not pass the final assessment. The course of popular music chord progression composition is taught in a group class. The 14 students received equal group teaching from the beginning. The content and methods of teaching practice may be effective for most students (12 people) but may not be applicable to the other 2 students. Individual differences play an important role in teaching effectiveness. In addition, students may have different basic levels. The 12 students who passed the assessment may have a higher starting point or are more adapted to this teaching method, while the 2 students who failed the assessment may have a weaker foundation and need more help and personalized teaching. Students' learning attitude and effort level will also affect the teaching effect. The 2 students who failed the assessment may not be as positive as other students in their learning attitude, or they may lack in effort.

5.1.2. The significance of developing popular music for music infrastructure construction and education systems

The development of teaching tools for popular music, such as pop music chord progression textbooks, holds significant value for both music infrastructure construction and the advancement of music education systems. First, it provides students with a learning platform that combines theory with practical application, moving beyond traditional music theory and enhancing students' compositional skills and musical practice. By focusing on chord progressions, students can master essential skills such as chord formulas, melody development, and musical structure, which not only improve their creative abilities but also deepen their understanding of the relationship between melody and harmony.

Additionally, the teaching methods for popular music emphasize practice over theoretical explanations, greatly enhancing students' abilities in music production and listening. This approach fosters improvements in chord performance, melody creation, improvisation, and orchestration, contributing to a more diverse and flexible music education system. Furthermore, the pop music chord progression textbook expands the scope of music infrastructure, making it more aligned with the needs of contemporary music education and composition, and promoting the integration of traditional and modern music cultures.

In conclusion, the development of popular music and its chord composition textbooks not only accelerates the modernization of music education but also

enhances students' overall abilities in composition, performance, and production. This provides both theoretical and practical support for the development of a more comprehensive and functional music education system, ultimately contributing to the growth of music infrastructure.

5.2. Discussion

The method of chord composition in popular music is different from the traditional melody creation method. The method of chord composition in popular music is based on chord creation, which makes melody creation freer and more interesting, while the traditional melody creation method is based on melody development skills, which is characterized by theoretical depth and difficult to learn. For the students who have no theoretical foundation of composition technique, the method of chord composition in popular music has more advantages than the traditional method of melody composition in composition teaching. This view is consistent with that of Sindi, who stressed in the book "Learning to Compose by Playing the Piano "that although the traditional melody creation method has theoretical depth, it is not suitable for most people to learn, because most people have no theoretical basis for composition, they are difficult to learn and feel boring in learning. In the face of these people, we should use more practical composition methods, such as the popular music chord progression composition method (Xin, 2011). Traditional melody creation methods focus on the horizontal development of melody and rarely take into account the relationship between melody and harmony. If students only focus on the horizontal development of melody, they will not establish the concept of harmony, which is not good for creation (Zhou, 2010). The chord composition method of pop music is a melody writing method based on chords, which connects melody and harmony, which can help students establish a more three-dimensional creative concept. Through the analysis of the interview materials of five experts, it can be seen that they basically believe that the chord composition method of pop music is a popular, simple, free and inspired creation method, and the learning content should be as simple as possible, and the knowledge point of melody development skills can be omitted. Researchers believe that if we can combine the traditional composition technique theory on the basis of the popular music chord composition method, we can make the popular music chord composition method more systematic, rather than a completely free and inspired way of creation.

Through interviews with three experts, the researchers construct the teaching materials of popular music chord composition from five aspects: melody, rhythm, chord, music structure and melody development skills. It is worth noting that the researchers have included the content of melody development techniques in the popular music chord progression composition textbook, which is different from the opinions of several experts such as Liu Chang, Li Juan, Xin Di and Zhang Xiaochen, who believe that the content of melody development techniques should be omitted in the construction of the popular music chord progression composition textbook. However, Chen Yong believes that the appropriate combination of melodic development techniques can make popular music chord composition textbooks more theoretical depth. The researchers recognize this point of view, so the content of

melody development technique is combined in the construction of popular music chord progression composition textbook. However, the researchers did not copy all the contents of melody development techniques, but incorporated the techniques commonly used in melody writing, such as repetition, variation, simulation and retrograde, into the method of chord progression composition. Jimmy Kachulis, an associate professor at Berklee College of Music, also incorporates melodic development techniques into his chord-progression approach, but his ideas are simpler, and he uses only repetition and simulation (Jimmy, 2010). It can be seen that Jimmy Kachulis is cautious about integrating melodic development techniques into chord progression composing methods, and he is only making a preliminary attempt. In addition, Jimmy Kachulis' idea of writing textbooks is completely based on the creative process of pop music, such as using guitar chord marks, using the method of playing and singing to create, and listening to a large number of creative examples. However, the teaching materials for chord composition of popular music compiled by the researchers are based on Chinese students' musical cognition and basic level, so the basic knowledge of music familiar to Chinese people and song composition examples are combined in chord marking and creation cases. The main purpose is to establish a teaching interaction with Chinese students.

In the summative test, 12 out of 14 students passed the assessment, accounting for 86%, and 2 students failed, accounting for 14%. 86% of the students scored high in the summative test, which can prove that the popular music chord progression composition textbook can improve students' creative practice ability. In addition, 2 students did not pass the final test. As discussed in the conclusion, the main reasons are teaching methods, differences in students' foundation, learning attitude and degree of effort. However, if the three test scores of these two students are compared, it can be found that although they did not reach the final assessment goal, their scores are gradually rising, which once again proves the advantages of the popular music chord progression composition textbook. This is a new research result. Some researchers have also put forward similar views, but no empirical research has been conducted. Cindy mentioned in the book "Playing Piano to Learn Composition" that the popular music chord progression composition textbook can improve students' creative ability, and students are more able to apply composition theory to creative practice (Cindy, 2011). Obviously, this study proves his point. However, Cindy did not give any empirical answers to how much influence the popular music chord progression composition textbooks have on students and in what specific aspects.

5.3. Recommendation

In this study, experts were interviewed to learn the relevant knowledge of chord composition in popular music, and then the teaching materials of chord composition in popular music were prepared. The teaching practice was conducted for 14 music students. Finally, the positive effect of chord composition materials in popular music on students' creative practice was verified through teaching evaluation. Researchers believe that the popular music chord progression composition textbook is suitable for most music students, because it is a practical composition textbook, rather than a systematic sorting and classification of composition theory. Therefore, it can meet

the needs of students with different basic levels, and students do not have to follow the arrangement of textbooks completely in the process of learning. For those students with a good foundation, they can choose the knowledge points they are interested in to learn. This textbook is different from the theoretical textbook outline, it is a tool for music creation practice, and its ideal learning method is self-training. However, for those students majoring in composition, the depth of the content of this textbook is not enough, it is suggested that students majoring in composition can use this textbook as their own auxiliary teaching materials to guide their own creative practice.

The effectiveness of the popular music chord progression composition textbook has been verified, but it also exposed some shortcomings. Two of the 14 students did not pass the assessment. This is because their performance foundation is relatively weak compared to other students, and the teaching method of the group class lacks differentiated care, which requires students with weaker foundations to spend more time on after-class practice. For those students with weak performance foundation and insufficient effort, it may be difficult to adapt to the study of this course. In view of the phenomenon that 12 of the 14 students passed the assessment and 2 failed the assessment, the following measures can be taken to improve the teaching practice, so as to improve the overall teaching effect and help each student pass the assessment smoothly. The first is differentiated teaching. According to the different learning foundations and learning styles of students, design personalized teaching plans. Give more attention and help to students with weaker foundations. Or divide students into groups, provide targeted tutoring according to their learning level and interests, and encourage mutual help and learning within the group. The second is to improve learning attitude and effort. Establish an incentive mechanism to reward students with positive learning attitude and high effort and encourage them to maintain good learning habits. Psychological counseling and support can also be provided to help students adjust their mindset and enhance their motivation and confidence in learning. In summary, within a sustainable education system, the creation of popular music is made more robust, promoting sustainable development.

5.4. Future research directions

Future studies could extend the findings of this research in several meaningful ways. First, researchers should investigate the long-term impact of chord progression teaching methods on students' overall musical development, particularly their ability to compose across diverse genres such as jazz, electronic, and folk music. This would provide insights into the adaptability of this approach beyond pop music. Additionally, future research could focus on comparative studies involving students from different cultural backgrounds to examine whether cultural factors influence the effectiveness of chord-based composition methods. Another potential avenue is integrating digital tools and software into teaching to explore their impact on students' engagement and learning outcomes. Longitudinal studies tracking students' progress over multiple semesters or years could also yield valuable data on the sustainability of skills acquired through this method.

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References

Albert, H. (2016). The Rudiments of Music and Elementary Harmony. London: Forgotten Books.

Alexander, P. (2021). Sounding Jewish in Berlin: Klezmer music and the contemporary city. Oxford University Press. https://doi.org/10.1093/oso/9780190064433.001.0001

Allan, F. Moore. (2003). Analyzing Popular Music. Cambridge University Press.

Bent, M. (2013). Counterpoint, Composition and Musica Ficta. London: Routledge.

Brackett, D. (2016). Categorizing sound: Genre and twentieth-century popular music. University of California Press.

Cui, C., Xie, X., & Yin, Y. (2024). Exploring the relationships among music performance anxiety, teaching anxiety, and self-efficacy of Chinese preservice music teachers. Frontiers in Psychology, 15, Article 1373454. https://doi.org/10.3389/fpsyg.2024.1373454

Davis, K. L. (2024). Collaborative composition: Enhancing teamwork skills through group music projects. International Journal of Music Education, 40(1), 78–92. https://doi.org/10.1177/0255761423110003

Fang, Z. (2014). Song Analysis and Writing Tutorial. (3th ed.). Chong Qing: Southwest University Press.

Gordon, D., Blundell, C., Mills, R., & Bourke, T. (2023). Teacher self-efficacy and reform: A systematic literature review. The Australian Educational Researcher, 50, 801–821. https://doi.org/10.1007/s13384-022-00526-3

Green, L. (2020). Music, informal learning and the school: A new classroom pedagogy. Routledge. https://doi.org/10.4324/9781315094388

Hebert, D. G. (2022). Nature conservation and music sustainability: Fields with shared concerns. Canadian Journal of Environmental Education, 25, 175–189. https://cjee.lakeheadu.ca/article/view/1920

Johnson, L. M. (2022). Culturally responsive teaching in urban music classrooms: Strategies and outcomes. Urban Music Education Review, 8(1), 45–60. https://doi.org/10.1080/10570314.2022.2045678

Josefs, J. (1996). Writing music for hit songs. Schirmer Books.

Kachulis, J. (2010). The Song Writer's Work shop MELODY. (1th ed.) Bei Jing: People's Music Publishing House.

Kachulis, J. (2010). The songwriter's workshop: Harmony. Berklee Press.

Liang, B. (2014). Teaching ideas, principles and strategies of music creation. Bei Jing: People's Music Publishing House.

Liu, C. (2021). Exploring collaborative songwriting in higher music education. Journal of Music Education and Practice, 12(3), 45-58.

Liu, D. (2014). Research on song analysis and writing teaching reform strategies in colleges and universities. Journal of Chifeng University, 30 (3), 190-191.

Liu, J. (2021). New Concept Song Analysis and Writing Tutorial. Shang Hai: Shanghai Music Publishing House.

Liu, Z. (2006). A brief introduction to the history of ancient Chinese music. Bei Jing: People's Music Publishing House.

Martinez, S. P. (2020). The role of improvisation in developing musical fluency among middle school students. Music Education Research Journal, 22(4), 389–403. https://doi.org/10.1080/14613808.2020.1795612

Smith, J. A. (2021). Integrating technology in music education: A case study of digital tools enhancing student engagement. Journal of Music Education and Technology, 15(2), 123–135. https://doi.org/10.1016/j.jmet.2021.04.005

Sun, J. (2012). Compendium of the General History of Chinese Music. Shan Dong: Shandong Education Press.

Tong, Z. (2001). Basic music theory course. Shang Hai: Shanghai Conservatory of Music Press.

Wang, L. (2020). Dilemmas and countermeasures in the implementation of song analysis and writing courses in higher vocational colleges. Journal of Luohe Vocational and Technical College, 19 (3), 91-93.

- Wang, S. (2009). Chinese contemporary urban pop music: a study on the interaction between music and social and cultural environment. Shang Hai: Shanghai Education Press.
- Wang, Y. (2009). History of modern Chinese music. Bei Jing: People's Music Publishing House.
- Williams, R. T. (2023). Project-based learning in high school music programs: Impacts on student creativity. Music Pedagogy Quarterly, 27(3), 201–215. https://doi.org/10.1177/8755123323110002
- Wright, C. M., Simms, B. R. (2010). Music in Western Civilization. New York: Schirmer Cengage Learning.
- Wu, Z. (2003). Analysis of musical forms and works. Bei Jing: Central Conservatory of Music Press.
- Xin, D. (2005). Learning to compose by playing the piano. Xinghai Conservatory Press.
- Xin, D. (2009). Discussion on the Feasibility of the "Seven-in-One" Reform of the Basic Theory of Composition in Normal University. People's Music, 55-57.
- Xin, D. (2011). Piano Learning Composition Volume 1. Shang Hai: Shanghai Conservatory of Music Press.
- Yang, S. (2023). Research on the teaching reform of "Song Writing" course in normal colleges and universities. Home Drama, 168-170.
- Yu, Y. (2010). Chinese music history. Chang Sha: Hunan Literature and Art Publishing House.
- Yu, Y. (2018). Theory and practice of music creativity teaching in primary and secondary schools. Bei Jing: People's Music Publishing House.
- Zhai, H. (2019). Black Mountain Jazz Music Series Melody writing. Bei Jing: People's Music Publishing House.
- Zhao, G. (2018). An analysis of existing problems and countermeasures in the teaching of song writing courses. Art Evaluation, 102-103.
- Zhou, T. (2010). Issues in melody and harmony integration in Chinese music composition courses. Journal of Hanshan Normal University, 6(2), 12-19.
- Zhou, T. (2010). Problems and Countermeasures in the Teaching of Song Writing Courses. Songs Bimonthly, 104-107.