

A Feasibility Analysis of Artificial Intelligence in High School Music Composition in China

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ABSTRACT

This study analyzes the practice of artificial intelligence in Chinese high school music composition and explores the practical application and impact of artificial intelligence in Chinese high school music education. The first part conducts a pre-practice analysis of the application of artificial intelligence in the music composition section of Chinese high schools, including three aspects: teaching material analysis, artificial intelligence software analysis and academic situation analysis; the second part conducts teaching design on the integration of artificial intelligence into the composition section of Chinese high schools, selecting a The case is used for teaching practice, and the design includes teaching objectives and experimental processes; the third part analyzes the practical effect of artificial intelligence in the teaching practice of music composition in middle and high schools, including student survey analysis and composition analysis. Through teaching practice, it is concluded that applying artificial intelligence technology to high school music composition has significant educational significance and practical feasibility.

KEYWORDS

Artificial intelligence; Music arranging; High school music teaching; Music education; Educational technology

1 Pre-practice Related Analysis of Artificial Intelligence in Chinese High School Music Arranging Boards

1.1 Analysis of Teaching Materials

The study selected Music Arrangement and Creation by HuaCheng Publishing House, which was adopted by a high school in Xiamen, China, to investigate the impact of artificial intelligence on the teaching of music arrangement and creation in the Chinese high school music curriculum. Music Arranging and Creating is one of the compulsory (optional) courses, which is based on the "five-one" principle established by China's Curriculum Standard (2017 Edition): that is to say: running through a main line - closely following China's Curriculum Standard (2017 Edition), and integrating and integrating its educational philosophy, curricular objectives, and content standards throughout the course. The content standards are integrated throughout; based on a fundamental - student-oriented, from their interests, abilities and needs, close to life, into the music; adhere to a principle - the content is rigorous and accurate, novel and unique ideas, beautifully designed, in line with the aesthetic needs of senior high school students, in line with the Chinese The content and ideology are highly unified. The content and ideology are highly unified; grasp a scale - grasp the knowledge system of the discipline and the cognitive laws of the students, rich in the orientation of the

knowledge of the discipline, the interconnection of related disciplines, and the feasibility of students' independent learning and exploration; ensure an orientation - in the process of teaching and learning music, the content and ideology of the curriculum are highly unified. In the process of music teaching and learning, we strive to change students' learning styles and penetrate the exploration and cultivation of creative thinking ability. The teaching of music arrangement and creation aims to cultivate students' emotional expression and creative thinking, so as to cultivate talents with innovative spirit.

The specific textbooks are as follows.

Table 1 Content of the "Music Arrangement and Creation" textbook

Structure	The name of the unit	Module content
Part I	Unit 1: Into Music Arranging	Section 1 experiencing the creation of music in improvisation
		Section 2 Understanding music arranging
	Unit 2: Unraveling the Mysteries of Composition	Section 3 musical image-making
		Section 1 Getting Started in Music Arranging
		Section 2 Adaptations of folk songs
Part II	Unit 3: Composition of Songs (I)	Section 3 Melodic developmental techniques
		Section 4 Compose a melody
		Section 1 the artistic characteristics of the song
		Section 2 the relationship between lyrics and music
		Section 3 The writing of song themes that
	Unit 4: Composition of Songs (II)	Section 4 creating lyrics for the music
		Section 5 The common form of the song, the riff, the
		Section 1 The common genre of the song, the two-part form
		Section 2 Arranging Songs from Folk Song Material
		Section 3 The intro, outro and interlude of a song
	Unit 5 The Charm of Harmony	section 4 songwriting process
		Section 1 Musical harmonies
		Section 2 accompanying the song
		Section 3 Improvise an accompaniment to the song
		Section 4 Arranging an accompaniment to a song with a small band
	Unit 6: Making up music with computers	Section 1 Simplified musical notation software "TT Composer"
		Section 2 Notation software Sibelius
		Section 3 Use of Cubase
		Section 4 Create music with Cubase

The textbook is divided into two parts. "Music Composition" aims at experiencing the fun of music composition and inspiring students' feelings. The six units of "Into Music Arranging", "Unraveling the Mysteries of Composition", "Song Arranging (I)", "Song Arranging (II)", "The Charm of Harmony" and "Music Arranging by Computer" are taught in 6 units, each unit has an exclusive title, and each unit contains 2-3 sub-titles underneath it. The first unit is designed to stimulate students' interest in arranging, while the last two units focus on the basic theoretical knowledge and developmental techniques of music arranging, covering the adaptation of elements such as rhythm, beat and pitch, as well as the design of song themes. The second part of the course also consists of three units, expanding and applying the theoretical knowledge from the previous part, from the

two-step phrase to the reproduced three-step phrase. The fifth unit focuses on simple song arrangements for accompaniment, with explanations of chord materials and progressions, chord choices, and accompaniment patterns. As a whole, the textbook emphasizes the characteristics of the subject and the core qualities of the subject. In terms of content, the textbook covers the teaching of theoretical knowledge and appreciation of classical works, and gives a certain degree of flexibility for teachers to make reasonable adjustments according to the learning situation. The author will do a good job in the preliminary research work, combined with the students and the school situation, the rational use of artificial intelligence in the choreography teaching, teaching design.

1.2 Analysis of Artificial Intelligence Orchestration Software

1.2.1 SOUNDBUG

SOUNDBUG, a domestically developed DAW software, is committed to promoting computer music production education and simplifying the music creation process through AI technology, especially designed for beginners. Not only is it widely used in Shanghai, it has also been selected as the official platform for local distance teaching in the fall, attracting millions of students to experience the joy of making music. In November 2020, SOUNDBUG launched the innovative one-click AI arrangement function and quickly updated it to version V2.4.2. This AI arranging function marks a major step forward in the industry, allowing users to generate a complete track including multiple instrument parts such as piano, guitar, bass and drums by simply uploading the MIDI file of the main melody and one-click operation. The quality of the music created by this function can meet the needs of novice arrangers, and even surpass some self-learners in terms of harmony and orchestration. The team provided nearly 20,000 MIDI materials for in-depth learning for this development work, and achieved remarkable results. SOUNDBUG has a friendly interface, clear tracks, and rich types of instruments. After one-click AI arrangement, it not only generates a complete melody, but also displays the multi-instrument accompaniment of separate tracks, so that students can intuitively see the accompaniment instruments and melody tracks.

1.2.2 TUNEFLOW

TUNEFLOW is a new generation AI music production tool that uses powerful artificial intelligence algorithms to cover the complete music production process and can quickly create complete music tracks like a dedicated production team. Users can choose their favorite style and rhythm, and get the complete main melody and accompaniment track in a short time. One of the advantages of this tool is that it is the most powerful artificial intelligence lyric creation tool in the industry, able to create lyrics according to user needs and refine single sentences or even entire lyrics. In addition, users can re-enact favorite songs or voices using their favorite voices. By completing cloud inference with one click, users can clone their own voice or the voice of their favorite celebrity without any background knowledge or hardware requirements. As a domestic software, TUNEFLOW is easy to operate and suitable for high school students. The feature of this software is that it can install multiple plug-ins, such as Renzhong intelligent harmony accompaniment plug-in, artificial intelligence lyrics plug-in, etc.

1.3 Analysis of the Learning Situation

In order to better apply artificial intelligence in the teaching practice of Chinese music arranging, the current stage of teaching is investigated and analyzed. The object of the survey is the student

body. The students who participated in the questionnaire survey were the first grade students of a high school in Xiamen City, China, and 256 paper questionnaires were distributed and collected, through the questionnaires, the preliminary understanding of the students' basic music literacy skills and their attitudes and opinions towards the inclusion of music arranging in the music curriculum, etc. The data were analyzed as follows. The data were analyzed as follows.

Table 2 Questionnaire Design Scale

test questions	Dimension
1.2.3.4	interest in music arranging and an overview of their own music learning
5.6.7	Knowledge of music arranging and willingness to do so
8.9	Awareness of artificial intelligence
10.11.12	perceptions of the integration of artificial intelligence into music teaching and learning
13.14	learning needs for the integration of artificial intelligence into the teaching of music arranging and composition

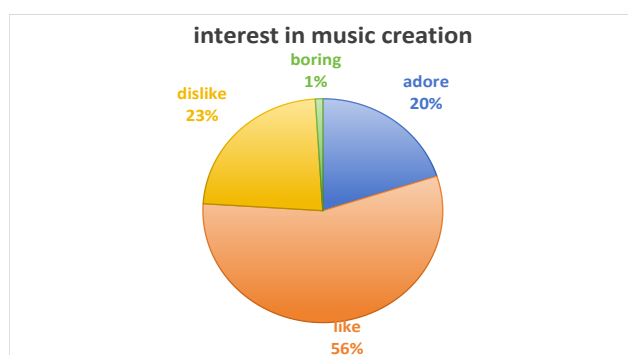


Figure 1 Musical Arranging Interests

The results of the survey show that 56% of the students like music arranging, 20% of the students have a very strong interest in music arranging, while 23% of the students are not interested in music arranging, and 1% of the students even hate music arranging. Students are the main body of learning, and their interest in a certain subject directly affects the time and energy they invest in that subject. Therefore, it can be seen that a considerable number of students' interest in music composition needs to be improved.

The author found that most of the students like to create, but no practice, so the students did not

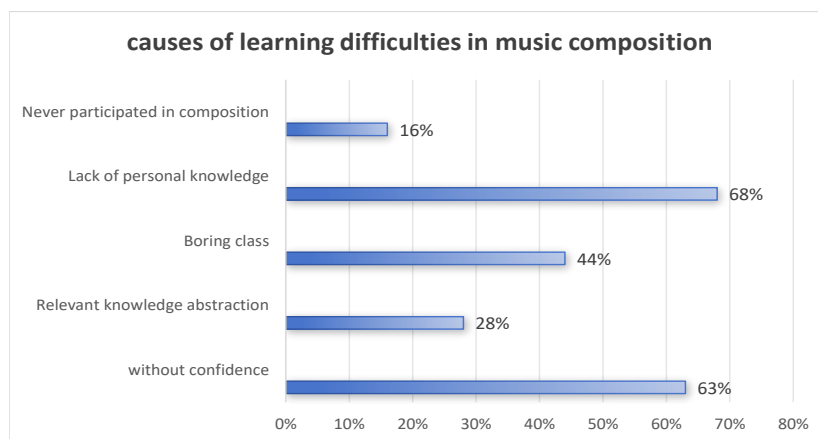


Figure 2 Causes of Learning Difficulties in Musiccomposition

create the reasons for investigation, found that 63% of the students do not have the confidence to create a good music clip, which shows that there is a certain lack of self-confidence in music creation, may be due to a lack of experience or self-evaluation due to insufficient; 28% of the students think that book creation knowledge is too abstract, do not understand the content, which means that the traditional way of teaching books is difficult for them to understand and absorb, need more intuitive, practical teaching methods to help them understand and master the knowledge of creation. 44% of the students think that traditional choreography is difficult for them to understand and absorb, need more intuitive, practical teaching methods to help them understand and master the knowledge. This means that the traditional way of teaching is difficult for them to understand and absorb, and they need more intuitive and practical teaching methods to help them understand and master the knowledge of choreography. 44% of the students think that the traditional choreography class is boring, and they don't have a good state of learning, which means that there are some problems with the traditional way of teaching choreography, and it may be lack of fun and motivation, and they need a more lively and interesting teaching method. More lively and interesting teaching methods to attract students' attention and active participation; 68% of the students can't compose due to the lack of their own knowledge of music theory, which shows that there are certain problems in the traditional way of teaching choreography, which may lack the elements of fun and motivation, and need more lively and interesting teaching methods to attract students' attention and active participation; this shows that there are certain problems in the traditional way of teaching choreography, which may lack the elements of fun and motivation, and need more lively and interesting teaching methods to attract students' attention and active participation; this shows that the traditional way of teaching choreography has certain problems, which may lack the elements of fun and motivation. This shows that the traditional way of teaching choreography has some problems, which may lack the elements of fun and motivation, and needs more lively and interesting teaching methods to attract students' attention and active participation. 16% of the students said that they had never choreographed, which shows that some of the students lack the opportunity and experience of practicing choreography, and need to be provided with more opportunities for practice and guidance, and the author will encourage the students to try to create their own creations.

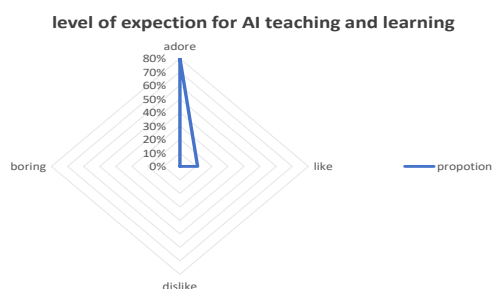


Figure 3 Level of Expectation for AI Teaching and Learning

In the survey of artificial intelligence teaching expectation, the results show that 80% of the students are very supportive, 11% of the students are relatively supportive, and a few students are neutral, and no one shows no support or strong opposition. This reflects students' high enthusiasm and expectation for integrating artificial intelligence technology into music creation education. It can be seen from the data analysis that although many students are not solid enough in music theory foundation and composition knowledge, they are still very interested in it. In order to effectively integrate artificial intelligence into music creation education, the first task is to explain basic music theory knowledge and solve students' music quality problems before formally teaching

music composition. Next, we will arrange the courses reasonably to eliminate students' concerns about the difficulty of creation, and gradually integrate the teaching of artificial intelligence technology and music creation. Therefore, the well-designed lesson plans and student works show that they are exemplary and can provide reference for other schools. Students expressed strong interest and demand in using artificial intelligence (AI) technology in music composition teaching. According to the survey, even students who have little interest in music themselves have a positive attitude towards integrating AI technology into teaching, hoping to enhance the experience through technological means such as computers, and hope to introduce teaching robots and virtual environments to enhance the learning process, reflecting Develop students' strong curiosity to explore new technologies. At the same time, it is expected that AI can provide a wide range of resources including music materials, score libraries and tutorials to facilitate the acquisition of required information. Although students have high expectations for using AI, because they are in the growth stage, they still need teacher guidance to properly utilize these intelligent teaching tools to ensure that they play a correct role in teaching.

2 Teaching Practices of Artificial Intelligence in Music Arranging in Chinese High Schools

On August 31, 2018, the Ministry of Education issued the Notice on Carrying out the Pilot Work of Artificial Intelligence to Boost the Construction of Teachers^[1], It is clearly proposed that accelerating the implementation of intelligent education and using artificial intelligence to promote the transformation of talent training mode and teaching method reform will be a leap from 1.0 to 2.0 in education informatization. Modern Music Education and Modern AI/IT Technology by Gu Yong^[2] The application of artificial intelligence technology in the field of music education has broken the traditional teaching mode, especially the appearance of computer music system and highly intelligent music software, which provides a wide space for new teaching ideas and methods, so that classroom teaching can realize real interactive communication. In the Standards of High School Music Curriculum published in 2020, it is proposed that we should attach importance to the practice-oriented art curriculum, so that students can improve their artistic literacy and innovation ability in the diversified practice with art experience as the core^[3].

In the 2019 edition of the Chinese People's Music Publishing House's "Music Composition" textbook, it is emphasized that songs are a blend of musical and literary elements, and it is pointed out that in addition to the beauty of the melody, well-written lyrics are also crucial to the success of the song. High school students have delicate emotions, tend to record lyrics, and have rich knowledge of language and literature, and are able to incorporate their personal experiences into their songwriting in various ways. Therefore, teachers should encourage students to utilize their imagination and language skills to create lyrics.

2.1 Teaching Objectives for Making Lyrics for Music

Lyrics are the words and phrases in vocal works, and creating and selecting lyrics is an important part of music creation. Through the rules of lyrics creation by artificial intelligence, the students will learn the basic skills of lyrics writing by practicing. Understand the relationship between melody and lyrics, master the method of shaping the musical image as a whole, and experience the role and charm of lyrics in music; understand the basic rhyming techniques such as rhyming with rhyme, double rhyme, and rhyming in the first line; try to use the knowledge of lyrics to compose through the creation of examples and the analysis of musical works, and have the preliminary ability to fill in

the lyrics to the melody.

2.2 The Experimental Process of Making Lyrics for Music

Specific instructional designs and processes are shown in the appendix, and the following table summarizes the process of creating lyrics for music.

Table 3 Instructional Process for Making Lyrics for Music, The

Teaching session	Content presentation	Duration (in minutes)
Import	Listening to instrumental and lyrical versions of the same piece, drawing out the connection between the lyrics and the music	5
New Lesson	The basics of songwriting are explained, the Artificial Intelligence Platform Practicing Choreography	30
Expansion	To summarize	5

First, the introduction. Listen to the instrumental version of "Song of the Yangtze River" and "Chatting about Polka", without presenting the title, think: What kind of association and feeling does the music bring you? (two different styles, in the absence of specific lyrics and explanations under the premise of the students to answer associatively); Teachers present the title of the song and the lyrics, so that students listen to the lyrics of the two works of the sung version, and again ask: musical feelings? Summary: lyrics can strengthen people's understanding of music, so that music adds color. Second, the basic knowledge of the study, including the basic characteristics of the lyrics, lyrics are vocal works in the words and phrases. Lyrics have musicality, rhythm by the melodic constraints, in the formulation of words and phrases to consider the art of listening, in the rhyme to take care of the convenience of singing; the choice of lyrics. Lyrics are essential to the creation of music, and must be easy to sing and full of rhythmic beauty. A good lyrics should combine smooth rhythm, melody, colloquial expression and pleasant sound. When evaluating the singability of lyrics, it is important to go beyond the surface form and focus on the deeper poetic and musical atmosphere. Lyrics with deep meanings can better inspire composers. Good lyrics should have both deep thinking and artistic style, and achieve the integration of depth of thought and artistic expression. Good lyrics are also good poems, and should be an independent artistic achievement, not only as a foil for music, but also as a way to convey a sense of beauty; the rhyming of lyrics. There are thirteen types of rhymes in the commonly used Chinese characters, and the ancients borrowed the rationale of rutting and figuratively called rhyming as "rutting". The following chart lists these thirteen types of rhymes and their emotional attributes, so you should pay attention to the choice of rhymes in the process of songwriting.

2.3 Choreographic Practice

Compose lyrics for melodies of different moods; compose a two-part song on the theme of "hometown" with reference to the "Song of the Yangtze River".

Table 4 Lyrics for Music Curriculum Activities

course activities	Content	Estimated time (in minutes)	Target completion
Activity 1:Teachers teach and lead students in the use of the Artificial Intelligence Choreography Platform, the	Input the relevant password in the artificial intelligence platform to generate works that meet the requirements	12 minutes	One, two
Activity 2: Student Practice	Students practicing, teachers guiding	15 minutes	One, two, three

The editing platform for this lesson chooses the tuneFlow artificial intelligence arranging software platform for teaching practice. According to the needs of this lesson, first select the music melody style you want to generate, set the tempo and have the artificial intelligence generate a single-track melody. You can also write it yourself. For melody, click "Free Creation" on the page, open track editing, select note input in the main editor in the editing mode, set the note intensity and note length as needed, and freely edit the melody in the roller shutter; run after you have the main melody Artificial intelligence lyrics writing plug-in, operate in the operation panel, enter the lyrics theme you want to create in the prompt word column, such as dreams and hopes, etc. You can adjust the creativity, maximum number of phrases and language, and then generate lyrics with one click, according to your personal needs. You can modify the lyrics content and the corresponding parts of the lyrics and melody according to your preferences, and finally save the work. The export format includes midi, audio header and sub-track, music score, etc.

The process of creation is shown below.

(1) Open the tuneFlow artificial intelligence software, select the style melody and music speed, and generate a single-track melody.

Students select different styles of music in tuneFlow software and feel the different characteristics of music with different emotions in the process of selecting style tags.

(2) Generation of monorail melodies

A happy or upbeat style of music. Melody: Usually simple, smooth, with big jumps. Rhythm: fast and regular, sometimes with prominent percussion. Harmony: Chord progressions are clear and in a major key. Tone: Bright and colorful, using the high registers of various instruments.

A sad or melancholy style of music. Melody: Long, flowing melodic lines, often downward, with fewer jumps. Rhythm: Slower, complex rhythmic patterns with extended notes and pauses. Harmony: in a minor key, chord progressions may be complex or unstable, sometimes containing suspended chords. Tone: deep, favoring the lower register, often used by strings and woodwinds.

Tense or fearful style of music. Melody: May contain erratic jumps, irregular melodic lines. Rhythm: Irregular or erratic, may be fast and have percussion highlights. Harmony: Uses dissonant chords and unstable chord progressions to enhance a sense of uncertainty. Tone: Use of sharp, abrupt tones, or deep, slurred bass.

Quiet or calm music style. Melody: gentle and smooth, simple melody, easy to memorize. Rhythm: slow and steady, good regularity, few prominent rhythmic changes. Harmony: Harmonized chord progressions, mostly in major keys, with gentle harmonic changes. Tones: warm and soothing, long notes, preference for strings and soft woodwinds.

(3) Run the Artificial Intelligence Composition plug-in that

After generating the melody, the choice of vocabulary for different styles of melody should consider the melodic style and vocabulary emotion, the matching degree of language style, in order to achieve the harmony and unity of the music and lyrics, in the cue, students can enter any keywords to create, artificial intelligence software to give tips. For example, the classical style melody, vocabulary characteristics: poetic rich, elegant language, often involving history, love, nature or philosophy and other themes; pop style vocabulary characteristics: easy to understand, close to daily life, emotional direct, thematic diversity, including love, friendship, dreams, etc.; rock style vocabulary characteristics: direct, forceful, and often expresses the theme of rebellion, freedom or challenge authority; jazz style vocabulary characteristics: flexible and changeable, often containing the theme of rebellion, freedom or challenge authority; jazz style vocabulary characteristics. Flexible, often containing puns, humor or irony, and emphasizing improvisation and individual expression.

(4) Operation panel for operation, cue word in the cue word content, such as dreams and hopes, can be adjusted to creativity, the maximum number of phrases and language, and then a key to

generate works.

(5) Save your work. Export formats include midi, audio headers and sub-tracks, music scores, etc.

2.4 Summary of Learning Outcomes

When writing lyrics, it is necessary to pursue the real feelings of the lyrics and songs and to maintain the unity of style. There is only one basic emotional state in the same tune, so understanding the emotional color and stylistic characteristics of the work can make the lyrics and the tune harmonious and show the emotional content of the original song. In addition, when writing lyrics, it is necessary to maintain the consistency of the structure of the lyrics, and to ensure that the syntax and structure of the lyrics are harmonized with the musical phrases of the tune. According to the style of the music, we should add false words and phrases as liner notes, repeat certain words and phrases as necessary to enhance the content, and adjust the relationship between the lyrics and the music. Before composing, it is necessary to analyze in detail the various elements of the melody, rhythm, tempo, mood, compositional background, etc. In the specific conception, it is necessary to analyze the melody in detail. In the specific conceptualization, the mood and style of the words and songs are consistent, the sentence style and structure are consistent; in particular, the tone of the words is consistent with the tone of the song, so as to avoid the phenomenon of "inverted words", thus causing ambiguity in the lyrics.

2.5 Reflection on Teaching and Learning

High school students have literary skills, guide students to combine teaching content with life experience, pay attention to the rhyme of the lyrics. However, in the process of artificial intelligence intelligent generation of lyrics teaching practice, found that there are some technical problems, artificial intelligence can also appear program error, so guide students can not rely too much on artificial intelligence, in the use of artificial intelligence creation software to create lyrics, generated works should guide students to repeat the sight-singing of the sheet music, combined with the lyrics for the melody of the basic knowledge, to check the corresponding lyrics are appropriate. After the work is generated, students should be instructed to repeat the music score and check the appropriateness of the corresponding lyrics, taking into account the basic knowledge of arranging lyrics for melodies. After thinking and discussing what kind of lyrics are suitable for the melodic progression and rhythmic combinations, students will make modifications on the basis of the intelligently generated lyrics according to these characteristics and finalize the lyrics to match the lyrics of the song.

3 Analysis of Practice Effects and Learning Outcomes

In order to gain a deeper understanding of students' real attitudes and interests in music arranging, a questionnaire was designed for this study, with the target group being students involved in classroom practice.

According to the data, most students have positive evaluations of the role of artificial intelligence in editing and creative teaching. Specifically, 89% of students believe that artificial intelligence has broadened their music creation ideas in composition teaching. This shows that the novel elements and innovative methods brought by artificial intelligence technology have played a positive role in promoting students' music creation thinking, broadening their understanding and imagination of music creation; at the same time, 82% of students believe that artificial intelligence's assistance has improved This shows that artificial intelligence plays a supporting and guiding role in the editing

process and can help students better improve their works and improve the quality and expressiveness of their works; 72% of students believe that artificial intelligence can be used to edit and create works. Through practice, they gain opportunities for personalized learning and cooperative learning. This means that students can conduct personalized learning according to their own interests and needs, and collaborate with others to jointly explore and create musical works, and promote and learn from each other; in addition, 65% of students believe that they practice music creation through artificial intelligence. Expands musical knowledge and skills, and stimulates creativity. This shows that the introduction of artificial intelligence technology has helped students expand their knowledge and understanding of music, improve their musical skills, and stimulate their unique creative potential. Based on the above data observations, the data shows the positive role that artificial intelligence plays in music composition and teaching. The introduction of artificial intelligence into high school music composition courses has significantly improved students' attitudes towards music learning and creation, and at the same time enhanced their innovative thinking. However, teachers also need to pay attention to promptly identifying and solving challenges encountered in the course to optimize teaching results.

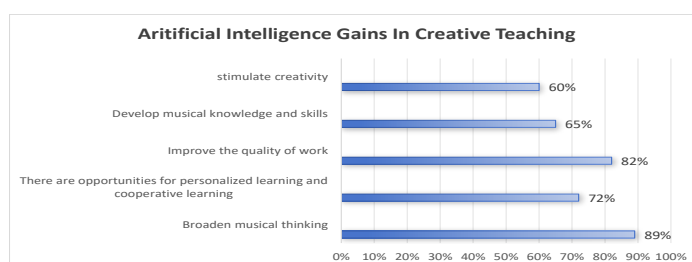


Figure 4 Artificial Intelligence Gains in Creative Teaching

In practical applications, the author imported some MIDI files of student works into the Sibelius program for analysis, and the resulting works are as follows:



Figure 5 Work 1

After Sibelius scored the midi passage generated by artificial intelligence, I saw that the work is a three-phrase passage with an introduction. Judging from the key signature, the fourth flat is usually A flat major or its related minor F minor. From the end of the introduction It can be seen that the main chord is c, and at the end of each phrase, it can also be seen that many ends on the c chord, so try to analyze it with the main key of c minor. The first two bars of the music are the introduction of

the music, which presents the rhythm of the music to the audience first. The rhythm of the introduction is a small syncopated rhythm progression up and two eighth notes jumping down. The second bar is four sixteenth notes. The diaeresis progresses upward and two eighth notes jump down to the tonic and main chord of the quarter note. The music is humorous and has a jazz style. The first phrase, phrase a, is two measures long. The right-hand melody introduction's octave progression adds an accented lower octave reflection in the middle part. The harmony of the phrase a is from the 2nd degree 9th chord to the dominant 9th chord, and the second measure is the 7th degree 56th chord, ending with the main chord. There is a small connection after the tonic of the phrase, a connection that goes up an octave and expands outward. The connection in the second measure uses third degree chords. After analyzing the work, it is obvious that the work shows an orderly layout structure; it is embedded with clear music construction logic, rather than simply stacking disordered notes. Under this structure, we can gain insight into the in-depth learning and mastery of databases by artificial intelligence in music creation. The work was a fitting response to the creative imperative put forward by the students.

4 Conclusion

Although the practical research of artificial intelligence in high school music composition shows many positive effects, there are also some challenges and limitations. For example, students' over-reliance on artificial intelligence software may lead to over-reliance on technology and lack of real creativity and expressive ability. At the same time, teachers need to guide students to use artificial intelligence software correctly in practice, and cultivate students' autonomous learning and critical thinking ability. However, in order to give full play to the advantages of artificial intelligence, teachers need to properly guide students, cultivate their independent thinking and innovation ability, and pay attention to educational ethics and copyright protection. Therefore, artificial intelligence should be regarded as an auxiliary tool in music creation, which can help students expand their creative ideas, provide inspiration and generate music materials, but the final music creation still needs the intuition, emotion and creativity of human creators. The mode of man-machine cooperation can exert the synergistic effect between creators and technology, and promote the innovation and development of music creation.

References

- [1] The Ministry of Education answered questions on the "Notice" on the Pilot Work of Artificial Intelligence to Boost the construction of teachers. The State Council Information Office of the People's Republic of China website. [2018-08-31] [DB/OL]. HTTP: // http://www.moe.gov.cn/jyb_xwfb/s271/201808/t20180831_346704.html.
- [2] GU YONG. Modern music education and modern AI/IT technology[J]. Music Exploration Cable, 2007, 2: 104-107.
- [3] DAVID E. Focus on music practice: Philosophy of new music education[M]. Shanghai: Shanghai Music Publishing House, 2009.