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Using Overture to enhance students' aural musical skills and motivation in learning

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Abstract: Aural musical skills are a compulsory course for music students, but studies show that students are weak in this area due to unattractive and ineffective teaching methods. This study investigated the effects of Overture on enhancing the aural musical skills of students in China. In addition the study also investigated whether the utilization of Overture can enhance students' motivation to learn aural musical skills. This quasi-experimental study only used quantitative data. The researchers chose 70 first-year Chinese music students as an intact group sample, from Hunan City University in China, The experimental group was taught using the Overture method, while the control group was taught using the conventional method. The intervention was for eight weeks. The researchers used pre-test, post-test, and questionnaires on learning motivation as instruments to collect the data. The data was analyzed using the SPSS program for Windows, version 25 (ANCOVA test). The results indicated that the experimental group performed significantly better and outperformed the control group in their overall scores in aural musical skills, melodic intervals, rhythmic patterns, monophonic music, and two-voice music, The experimental group also showed significantly higher motivation than the control group. In terms of pedagogical implications, this study suggests that music lecturers need to consider using Overture as an alternative method to improve aural musical skills among students and they have to be trained on how to utilize Overture for teaching music.

Keywords: *Aural musical skills, College students, Conventional method, Learning motivation, Overture method.*

1. Introduction

Music cannot express specific meanings as words do, nor can it express specific visual images like paintings. Music uses pure sound as its raw material for expression (Davies, 2019). Without 'sound' and 'hearing', it is impossible to discuss music (Zhu, 2023). For this reason, listening training is an indispensable part of music teaching and is a fundamental skill for music majors. A lack of music listening ability greatly affects in-depth learning in the music field (Braz et al.; Zhang, 2010). It may be said that effective listening training lays the foundation for students who intend to study various music directions with high quality and efficiency (Zhang, 2010). Music auditory training is a part of Solfeggio and Ear Training, and the purpose of this training is to identify pitches, intervals, melodies, chords, rhythms, solfege, and other basic music elements solely by hearing (Meng, 2021).

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This study was carried out at Hunan City University, where all music major students are required to undergo a compulsory two-year course in Solfeggio and Ear Training. The teaching method for this course has always been based on the conventional approach, where teachers play the piano (the main and only teaching tool) in front of the classroom while the students listen. However, this teaching and practice method has several disadvantages: firstly, teachers are unable to coordinate the practice needs of students at different levels. Secondly, teachers cannot provide the sounds of musical instruments other than the piano. Thirdly, this method is not conducive to practicing multipart music. Fourthly, it cannot provide practice files for editing and transmission. Lastly, the conventional method does not provide materials and methods for students to practice independently after leaving the classroom.

1.1. Problem Statement

At Hunan City University, a comprehensive music university, music majors in different directions (vocal music, Western musical instruments, classical Chinese musical instruments, theoretical composition) are required to take music auditory training as a compulsory basic course. However, the musical aural abilities of students in comprehensive music universities (music colleges or music departments in universities that teach music alongside other subjects) are relatively low, and their enthusiasm for learning is not high.

Due to the different teaching directions and goals of various music universities, the scope and difficulty of testing also vary. Independent music universities typically have the highest degree of difficulty. According to Jing et al. (2021), the music syllabus, examination content, and level of difficulty in comprehensive music universities (that teach music with other subjects) are lower compared to conservatory music universities (that specialize in teaching only music). This has led to a lower average level of music listening ability among students of comprehensive music universities.

The number of students applying for music courses at comprehensive music universities has increased. Unfortunately, most of them have not studied music for an extended and typically required period of time, especially aural musical skills, leading to a lower average level of musical aural ability among these students. Furthermore, some provinces, such as Tibet, do not include an aural musical skills test in the music entrance examination. As such, these students do not receive relevant training before entering the university, and their lower ability level greatly influences their learning pressure and interest (Xueya et al.,2024). Therefore, it is important to improve their aural musical skills by employing appropriate pedagogy.

There are differences in the musical abilities of students in comprehensive music universities compared to conservatory music universities (Huanyuan, 2024). Therefore, there is a need to establish effective teaching methods in comprehensive music universities not only to meet the increasing needs of students with lower musical abilities but also to meet the basic requirements of university-level professional music auditory training, which is the focus of the current study.

In terms of curriculum settings, conservatory music universities provide elite education in cultivating professional music talents (Grenier Borel, 2019). They train senior music professionals and talents who pursue music as a career (music creation, conducting, singing, performing, theoretical research, music editing, and management and teaching activities). On the other hand, normal music universities train music teachers for teaching roles. Comprehensive music universities focus on cultivating students' comprehensive humanistic literacy alongside improving professional skills. The Solfeggio and Ear Training Course in the Context of Innovative Teaching (Yang, 2023). Different teaching goals lead to different course settings for music auditory training in conservatory and comprehensive music universities.

In addition to a small number of specialized rhythm training textbooks compiled by Chinese musicians, the textbooks used in music auditory training also include some foreign-based textbooks. Examples of foreign-based textbooks include two from the Soviet Union ("Solfeggio" by Sposobin, "Solfeggio Course" by Ostrovsky); three from France ("18 Interval Solfeggio Etude" edited by Jeanine Rueff, "Bournonville Sighting 40" by Armand Bournonville, "French Solfeggio" by Lemoine, G. Carulli,

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and others); and three from the United States ("Advanced Solfeggio and Ear Training" by George Anson Wedge, "A New Approach to Ear Training" by Kraft, "Music For Sight Singing" by Robert Altman and Nancy Rogers, (Yanxi, 2019). These materials are widely chosen by music auditory training teachers which greatly aid in improving students' abilities. However, students of comprehensive music universities, with lower overall musical aural abilities than those at independent music universities, encounter difficulties during practice. Therefore, it is crucial for students to not only have access to these excellent practice materials but also to successfully complete layered, phased, and varied materials based on their practical ability. This is a challenge faced by music students and lecturers in comprehensive universities, underscoring the need to introduce digital music software into teaching.

Moreover, Grenier Borel (2019), pointed out that "Solfeggio and Ear Training (including music auditory training) must be closely integrated with basic music theory, harmony, and music composition analysis classes. The cultivation must be based on certain musical knowledge." At Hunan City University, for instance, Solfeggio and Ear Training courses are set in the first and second academic years of the university, alongside music theory courses, instrumental courses, vocal courses, harmony courses, music analysis courses, composition courses, polyphony courses, and orchestration courses. All these courses start in the first and second academic years of the university and are basically synchronized with Solfeggio and Ear Training courses or introduced one year later. Therefore, the use of software can effectively improve students' skills in Solfeggio and Ear Training in a short period and maximize the teaching values of other music courses.

Furthermore, in conventional music auditory training, the piano is the only teaching tool. Chen (2021) and Thompson (2022) also opined that teachers should utilize multimedia technology in teaching music. With the development of multimedia technology and computer music, digital music has been introduced into the classroom to supplement the unity of piano timbre. However, due to the lack of technology and operation, digital music teaching technology coverage is not extensive or intensive and is still dominated by the piano. Digital technology applications mostly stay in multimedia audio or video displays and are less integrated with changes in various music auditory materials.

Table 1 shows the actual situation of music auditory training at Hunan City University. In terms of practice, compared to the conventional practice method, there is no significant difference. Personal practice, which combines piano use, and the two-way practice method (where two people take turns, one playing and the other listening), are still employed. The contents of the practice are also primarily recorded in music scores, with no digital format available for use on computers or other mobile devices. Consequently, students have limited opportunities to practice after leaving the practice room, let alone benefit from the network information exchange and sharing of music auditory training materials. Furthermore, the application of music software is confined to classroom demonstrations by teachers and is not utilized in after-class exercises. As a result, students cannot adjust and set the auditory training materials to different difficulty levels according to their own practice needs. In the existing practice, there is considerable room for improvement in the teaching values of music auditory training. The use of digital technology-based music software for after-school exercises represents a teaching step that is currently absent in conventional music auditory training. Determining how to integrate students' self-practice and self-assessment into the overall planning of music auditory training is another important issue faced by both the students and the music lecturers.

Table 1.
The situation of music auditory training in Hunan City University

MMF	DD	EM	MSA	MMNS
Sheet music	Uniform difficulty	Individual / One or two teams	None	Rarely

Note: MMF = Music material form; DD = Difficulty division; EM = Exercise mode; MSA = Music software application; MMNS = Music material network sharing
Source: Solfeggio and Ear Training of Hunan city university (2021).

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The above-mentioned problems in Table 1 and difficulties encountered in conventional teaching methods can be effectively addressed through the use of computer music software. Computer music, also known as digital music, is the product of the fusion of computer technology and music art (Chen, 2021; Ng et al.,2022; Wang, 2021). Computer music software is defined as software that runs under the Microsoft Windows operating system and can be utilized in the field of music (Zhang & Sui, 2017; Rexhepi et al., 2024). This research integrates music software, specifically Overture, as a teaching aid into music auditory training. It serves not only as a teaching tool for teachers but also as a self-practice tool for students.

1.2. Research Questions

The following are the research questions of the study:

1. Is there a significant differences in the mean score for listening to melodic intervals in aural musical skills between groups using the Overture method and the conventional method?
2. Is there a significant differences in the mean score for listening to rhythmic patterns in aural musical skills between groups using the Overture method and the conventional method?
3. Is there a significant difference in the mean score for listening to monophonic music in aural musical skills between groups using the Overture method and the conventional method?
4. Is there a significant difference in the mean score for listening to two-voice music in aural musical skills between groups using the Overture method and the conventional method?
5. Is there a significant difference in the mean score for learning motivation between groups using the Overture method and the conventional method?

2. Literature Review

The study utilizes Vygotsky's scaffolding theory (1978) to provide guidance and assistance for the implementation of the Overture method, a new teaching approach. It posits that effective teaching precedes and guides development (Zhong & Craig, 2020). The application of the scaffolding teaching mode to the Zone of Proximal Development (ZPD) in music auditory training can be divided into several aspects: First, identify the learner's prior knowledge and current ability. Second, build knowledge through scaffolding by setting different supports according to the students' ZPD and further determine specific themes for each music teaching content. Third, help students connect new knowledge with the previous knowledge, promoting independent exploration of problems through teacher guidance. Fourth, establish suitable study groups for cooperative learning, discussing problems and exchanging materials through group conversations. Fifth, evaluate learning effects, including self-evaluation and group evaluation (Chen, 2012).

Present day students who belong to the Generation Z being tech-savvy are highly proficient technology users. They have grown up with social media exploiting cell phones even for different routine tasks. They are comfortable with a wide range of digital tools and platforms, and they tend to be quick learners when it comes to new technologies. Hence, with the popularization of mobile phones, tablets, computers, and internet technologies, students have enhanced their basic knowledge of music, appreciation skills, and human values. Therefore, to increase students' interest in music, it is necessary to actively innovate conventional music teaching models (Wan, 2022; Dai 2021). Mayer's cognitive theory of multimedia learning (Mayer, 2002) offers a logically coherent and rigorous theoretical structure for the efficient design and creation of multimedia instruction (Sorden, 2012). Mayer believes that multimedia teaching materials designed in accordance with human psychological processes are more likely to produce meaningful learning as compared to materials not designed with these processes in mind (Mayer, 2005).

Additionally, the design of multimedia music teaching applications primarily involves the application of digital technology in music teaching (Nasrifan et al. 2017; Ruthmann et al. 2018). The incorporation of multimedia cognition concepts and digital music technology enhances the synergy between music art and science and technology, revolutionizing the traditional methods and procedures in the conventional

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music field. It is characterized by convenience, speed, rich musical expression, and ease of mastery (Wang, 2021; Zhao., 2024). The unique interaction and resource-sharing characteristics of human-computer interaction in digital technology have transformed the one-way learning method between teachers and students in conventional music teaching into a form of interaction between humans and computers, as well as between teachers and students. In this connection, Ma (2021) also asserted that multimedia-assisted music teaching system based on AI technology can improve students' performance in learning music.

In addition, a study by Wang (2022) indicates that the utilization of new media-integrated music reading training can enhance students' singing and ear training because they can enjoy and appreciate the beauty of music. Similarly, Zao (2024) carried out a research on effectiveness of using Orff teaching method in Solfeggio ear training class. The results clearly indicated that the Orff teaching method provided the platform for students to work collaboratively and resultantly it improved students' ability in music rhythm and enhanced their interest in learning music.

Moreover, Huang (2023) stressed that the utilization of Overture can improve the students' practice ability of music rhythm. In the process of playing, students can not only train their teamwork ability and physical coordination ability, but also improve their learning interest. Similarly, a study by Reshepi et al. (2024) and Wash (2019) revealed that the use of modern digital technologies facilitate students in learning music and improved their musical skills, enhanced their interest in learning, developed their creative skills, and they were more involved in teamwork and collaboration.

In addition, the music auditory materials provided by the music software Overture are in digital form. Compared with paper materials, digital materials not only offer customized practice methods, practice time, and steps, but also pave the way for digital adaptation, creation, and team material sharing (Huang, 2023; Xu, 2021). Collaborative learning using Overture is particularly well-suited for music auditory training because it involves two-way practice and multi-voice coordination. Learning with a combination of students of different potentials is not only beneficial for practice but also helps to maximize their abilities. Zhang and Sui (2017) and Webster (2017) also advocated the use of digital music technology to enhance students' learning.

Along with that, different motivations in music auditory training lead to variations in students' auditory levels. These motivations include students' attention, observation, memory, imagination, and thinking, as well as learning motivation, mentality, habits, behaviour, and will, both in class and after (Zhang et al.,2021; Cogdill, 2015). According to Wang (2022), an effective teaching strategy is needed to stimulate and maintain students' attention. Compared to the conventional teacher-centred classroom, cooperative learning using Overture provides students with more opportunities for content-related communication. Learners can use collaborative conversational methods to complete tasks under the joint action of more skilled teachers or learning partners (Huang, 2023).

However, studies are scarce when it comes to examine the the effects of utilizing Overture in teaching aural musical skills among undergraduate students. This approach ensures that every student can have access to suitable music auditory materials and improve their skills efficiently. It is hoped that this research can fill the mentioned gap by providing innovative ideas and new directions for future music teaching practices. This approach ensures that every student can utilize suitable music auditory materials and improve their skills efficiently. The research provides innovative ideas and new directions for future music teaching.

3. Methodology

3.1. Research Design

This study utilized a quasi-experimental design. The Experimental Group, consisting of 35 students, received instruction using the Overture method, while the Control Group, also consisting of 35 students, received instruction using the conventional method. Two highly skilled and extensively trained instructors provided instruction to the two cohorts over a duration of 8 weeks.

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3.2. Research Population

The sample consisted of 232 first-year music major students at Hunan City University, aged between 17 and 20 years, who were enrolled in the academic year 2022/2023. Intact groups were used for sampling purposes. The sample comprised 70 first-year Chinese music students from Hunan City University. Both groups exhibited nearly identical scores in music auditory tests prior to the experiment.

3.3. Instrument

Both groups underwent a pre-test, post-test, and motivation questionnaire before and after the intervention. The content of both the pre-test and post-test was comparable, with items assessing students' proficiency in melodic intervals, rhythmic patterns, monophonic music, and two-voice music. The pre-test and post-test comprised 32 items divided into four sets of questions, encompassing four facets of aural musical abilities. The questions were all in a multiple-choice format, where a correct answer earned 1 point and an incorrect answer earned 0 points. The questionnaire developed by Keller (2010), which comprised of 34 items, was utilized to assess the motivation levels of students both prior to and following the intervention.

3.4. Validity And Reliability

A pilot study was conducted with a sample size of 40 students to assess the reliability of the instruments used, including the pre-test, post-test, and Keller's questionnaire on motivation. The quantitative data obtained from these instruments were analyzed using the Analysis of Covariance (ANCOVA) test, specifically utilizing SPSS Version 25 software. The pre-test was utilized as a covariate to mitigate disparities between the groups prior to the intervention. Additionally, pre-motivation was included as a covariate in the analysis. In order to ascertain the dependability of the testing instruments, a pilot test was administered to a group of 40 students. The test format was modified, and the duration of the test was set to 90 minutes. The results obtained from the Reliability Calculator demonstrated that the questions in the music auditory test exhibited a high level of reliability, with a KR21 value of 0.83 and a KR20 value of 0.84. The questionnaire's Cronbach's alpha value was 0.824, indicating a high level of reliability (Hair, Black, Babin, & Anderson, 2010).

Besides, the researcher used the 'Validity Form' to have the two experts in order to validate the questions. One expert rated the content appropriateness of the test as 9 and the difficulty suitability as 9. Another expert rated the content appropriateness as 10 and the difficulty suitability as 9.5. The average score was 9.25 out of 10. Both experts concurred that the test was suitable for the freshman music majors of Hunan City University. The results indicated that the questions in the music auditory test possessed a high level of validity and could be effectively utilized in the actual study.

Table 2.
Results of the ANCOVA test for listening for melodic intervals in the post-test.

Source	Type III sum of squares	df	Mean Square	F	Sig.
Corrected Model	41.809	2	20.904	8.631	0.000
Intercept	7.277	1	7.277	3.005	0.088
MIpre	23.805	1	23.805	9.829	0.003
Group	15.512	1	15.512	6.405	0.014
Error	162.266	67	2.422		
Total	4740.250	70			
Corrected Total	204.075	69			

Note: R squared = 0.205 (Adjusted R squared =0.181).

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4. Findings and Discussion

4.1. Is There a Significant Difference in the Mean Score for Listening to Melodic Intervals in Aural Musical Skills Between Groups Using the Overture Method and the Conventional Method?

The results of the pre-test indicated that the Experimental Group achieved an average score of 7.33 (SD = .92) in the task of listening for melodic intervals, whereas the Control Group obtained a score of 7.23 (SD = .74). The Experimental Group achieved a significantly higher mean score (M = 8.56, SD = 1.84) in the post-test as compared to the Control Group (M = 7.54, SD = 1.44). The ANCOVA Test results, as shown in Table 2, indicate a significant disparity between the two groups in terms of the post-test scores for listening to melodic intervals (F = 6.41, df = 1, p = .000). The results suggest that the Overture method successfully enhanced students' ability to identify melodic intervals in listening tasks. The Experimental Group demonstrated a greater improvement in their ability to identify melodic intervals in comparison to the Control Group, who were instructed using the traditional approach. The findings indicate that incorporating Overture into music auditory training has a substantial impact on improving the acquisition of aural musical skills.

The findings suggest that incorporating Overture into music auditory training resulted in enhanced performance among students in identifying melodic intervals. The melodic interval is a fundamental exercise for first-year university students. It serves as the foundation for recognizing and understanding chords and melodies, and it has an impact on both vocal singing and the precision of instrumental performance (Huang, 2023; Zhao et al., 2023). According to Wong et al. (2021), the ability to recognize intervals is an important skill that contributes to overall musical proficiency and the ability to perform complex musical tasks. Consequently, students were able to improve their ability to identify melodic intervals by employing this technique, which proved advantageous for acquiring more sophisticated skills. Thomson (2022) and Zhang et al. (2021) have both advocated for the use of digital audio in learning, highlighting its effectiveness in enhancing learning efficiency. These findings are consistent with the studies conducted by Nasrifan et al. (2017) and Ruthmann et al. (2018), which highlighted the ability of multimedia to offer learners more comprehensive educational material.

Table 3.
Results of the ANCOVA test for listening for rhythmic patterns in the post-test.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	226.799	2	113.399	22.894	0.000
Intercept	193.940	1	193.940	39.155	0.000
RPpre	67.795	1	67.795	13.687	0.000
Group	154.734	1	154.734	31.239	0.000
Error	331.862	67	4.953		
Total	39333.750	70			
Corrected total	558.661	69			

Note: R squared = 0.406 (Adjusted R squared = 0.388).

4.2. Is There a Significant Difference in the Mean Score for Listening to Rhythmic Patterns in Aural Musical Skills Between Groups using the Overture Method and the Conventional Method?

As per the above Table 3, the average score on the pre-test for listening to rhythmic patterns was nearly identical for both the Experimental Group (M = 21.76, SD = 2.85) and the Control Group (M = 21.66, SD = 2.06). After the post-test, the Experimental Group had a mean score of 25.04 (SD = 1.88), which was higher than the Control Group's score of 22.03 (SD = 2.87). The ANCOVA Test results in Table 3 indicate that the Experimental Group outperformed the Control Group in the post-test for listening to rhythmic patterns, with a significant difference (F = 31.24, df = 1, p = .000). The results unequivocally demonstrate that the implementation of the Overture method significantly enhanced the students' comprehension and performance in identifying rhythmic patterns during the post-test.

Furthermore, Overture generated music auditory materials offered students practice materials of

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varying levels of difficulty. Among them, the rhythmic patterns with intervals were replaced by rhythm patterns without intervals, and the rhythm patterns with two beats as a set were replaced by the rhythm pattern with one beat as a set. Furthermore, students could also select the playback time of unit beats. The findings imply that using Overture during music auditory training helped the students in the Experimental Group obtain more effective practice methods and materials, thereby promoting and improving their mastery of aural musical skills.

Also, rhythm is one of the most important training contents in music auditory training (Zhao et al. , 2023). In relation to the improvement of rhythm, on the one hand, it involved the training of the stability of the unit beat, and on the other, the training of rhythm change, meaning that targeted exercises were necessary according to the weaknesses of different students. This was consistent with the views of Wang (2021) and Dai (2021), who emphasized the importance of correct and effective methods in rhythm practice. Using Overture allowed students to obtain more suitable music auditory materials and to customize practice difficulties and methods (Wash, 2019; Huang, 2023), thereby improving their learning enthusiasm and aural musical abilities. The findings of this study align with the research of Rexhepie et al, (2024) and Chen (2020), who concluded that the conventional method could not maximize students' aural musical abilities.

Table 4.
Results of the ANCOVA test for listening to monophonic music in the post-test.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	916.893	2	458.446	93.484	0.000
Intercept	1.423	1	1.423	0.290	0.592
MMpre	634.889	1	634.889	129.464	0.000
Group	250.572	1	250.572	51.095	0.000
Error	328.568	67	4.904		
Total	56658.750	70			
Corrected total	1245.461	69			

Note: R Squared = 0.736 (Adjusted R Squared = 0.728)

4.3. Is There a Significant Difference in The Mean Score for Listening to Monophonic Music in Aural Musical Skills Between Groups Using the Overture Method and the Conventional Method?

As indicated in the above Table 4 the Experimental Group had an average score of 26.06 (SD=2.46) in the pre-test for listening to monophonic music, whereas the Control Group had a mean score of 25.86 (SD=2.89). However, in the post-test, the Experimental Group attained a significantly greater average score of 30.14 (with a standard deviation of 3.29) in comparison to the Control Group, which had an average score of 26.13 (with a standard deviation of 4.18). The ANCOVA Test results in Table 4 show that the Experimental Group had a significantly higher score than the Control Group in listening to monophonic music ($F=51.10$, $df=1$, $p<.001$). The results reveal that the use of Overture is significantly effective in improving students' capacity to listen to monophonic music, in contrast to the traditional approach as was used by the Control Group.

Moreover, Overture enables students to clearly discern various technical challenges within music melodies and tailor them to their own practice needs, progressing in stages. Monophonic music is a synthesis of melodic intervals and rhythmic patterns and serves as the foundation for multi-voice music (Yanxi & Karim, 2019). Additionally, accurate listening skills contribute to improving students' singing and performance abilities. With the writing features of Overture, students can practice aural musical skills at various difficulty levels and address technical challenges in their specific areas of focus, such as vocal music, Western musical instruments, classical Chinese musical instruments, and theoretical composition. Zhang & Sui (2017) and Webster (2017) have highlighted the importance of integrating digital music technology into more music courses.

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Table 5.
Results of the ANCOVa test for listening to two-voice music in the post-test.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	211.571	2	105.785	12.246	0.000
Intercept	222.537	1	222.537	25.763	0.000
TVMpre	81.281	1	81.281	9.410	0.003
Group	123.159	1	123.159	14.258	0.000
Error	578.747	67	8.638		
Total	**59341.750**	70			
Corrected total	790.318	69			

Note: R squared = 0.268 (Adjusted R squared = 0.246)

4.3. Is There a Significant Difference in the Mean Score for Listening to Two-Voice Music in Aural Musical Skills Between Groups Using the Overture Method and the Conventional Method?

The above Table 5 reflects that the pre-test mean score of the Experimental Group in listening to two-voice music was 25.20 with a standard deviation of 2.67. The mean score of the Control Group was nearly identical at 25.03 with a standard deviation of 2.38. After the post-test, the Experimental Group had a mean score of 30.29 (SD=3.91), while the Control Group only had a mean score of 27.56 (SD=2.04). The ANCOVA Test results, presented in Table 5, indicate that the Experimental Group outperformed the Control Group significantly in the post-test for listening to two-voice music ($F=14.26$, $df=1$, $p<.001$). The findings unambiguously demonstrate that students exhibited enhanced listening skills in two-voice music following their use of Overture.

Two-voice music refers to compositions that involve either melody, timbre, tone zone, or two different or the same voices in coordination. The upper part is typically known as the high part and the lower part as the low part. In terms of the relationship between the high and low voices, two-voice music can be classified into two types: Homophony and Polyphony. In polyphony, all voices can be considered separate melodies, while in homophonic texture, one voice serves as the main part and the other as the accompaniment (Storm, 2010). In this study, both types of two-voice music, composed in C natural major, were prepared. These two types, with different textures, offer varied practice emphases and difficulty levels. The former focuses on listening to chord functions, and the latter on multi-voice music melodies. Multi-voice Solfeggio, a form of multi-voice music, is particularly valuable in developing students' sense of harmony and auditory skills, enhancing musical comprehension and aesthetic ability. Through learning multi-voice sight-singing, students can understand the vertical combination of tonal multi-voice music, appreciate the harmony, and experience the tension in disharmony, as well as the melody lines, layers, density, and structure of polyphonic music (Shen & Wu 2023). In a nutshell, the use of Overture has been beneficial in helping learners master two-voice listening and identification skills, develop multi-voice music thinking, and improve performance in ensemble, chorus, and band settings (Ma, 2021; Wang, 2022).

Table 6.
Results of the ANCOVA test for students' learning motivation in the post-test.

Source	Type III sum of squares	df	Mean square	F	Sig.
Corrected model	1524.177	2	762.089	12.583	0.000
Intercept	11609.990	1	11609.990	191.699	0.000
Mpre	5.949	1	5.949	.098	0.755
Group	1503.431	1	1503.431	24.824	0.000
Error	4057.765	67	60.564		
Total	789560.000	**70**			
Corrected Total	5581.943	69			

Note: R Squared = .273 (Adjusted R Squared = .251)

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4.4. Is There a Significant Difference in the Mean Score for Learning Motivation Between Groups using the Overture Method and the Conventional Method?

As specified in the above Table 6, the Experimental Group attained a pre-test mean score of 96.86 (SD=12.88) in motivation for learning music, while the Control Group had a mean score of 95.54 (SD=11.56), which was very close. Following the post-test, the Experimental Group exhibited a noteworthy increase in the mean score, reaching 110.49 (SD=8.75). In comparison, the Control Group experienced a comparatively smaller increase, with the mean score reaching 101.17 (SD=6.56). The ANCOVA Test results, presented in Table 6, indicated that the Experimental Group exhibited significantly greater motivation than the Control Group following the intervention ($F=24.82$, $df=1$, $p<.001$). The findings unambiguously demonstrate that the utilization of Overture had a substantial impact on enhancing students' motivation.

Additionally, the findings suggest that Overture not only enhanced motivation but also fostered an inherent desire among students to learn music. Several researchers have emphasized that the adoption of digital music software marks a significant reform from conventional teaching methods and can boost students' enthusiasm for learning (Wang, 2022). The introduction of digital music teaching technology in the Experimental Group led to greater learning motivation as compared with the Control Group. The use of Overture significantly improved students' aural musical abilities. This aligns with research by Wan (2022); Zao, 2024; Cogdill (2015) and Wang (2024, which supports the current findings. Furthermore, Ng et al. (2022), and Zhang et al. (2021) have also claimed that the application of digital technology has a noticeable impact on enhancing students' learning initiative and motivation. In addition, Nair et al. (2017) also concluded that the use of multimedia can enhance students' motivation and their interest towards learning.

5. Policy Suggestions and Implications

From a pedagogical standpoint, the use of computer music software such as Overture has revolutionized music auditory training by shifting the learning approach from a traditional one-way interaction between teachers and students to an interactive process that incorporates both humans and machines, teachers and students, and peer-to-peer engagement. Digital practice methods enable students to independently compile or adapt learning content through network information and digital technology, design training materials suited to their levels, and cultivate active thinking and self-confidence in learning (Wan, 2022; Dai, 2021).

Practically, Overture's use in music teaching improves both teachers' work efficiency and students' learning outcomes (Wang, 2022). Therefore, it's essential for music lecturers and teachers to be trained in using Overture. Overture addresses the issue of varying student abilities in the same class, allowing for customization of music auditory materials and practice content. This ensures that students at different skill levels can progress without feeling left behind or unchallenged. By using Overture, teachers can explore new methods to enhance their students' aural musical skills.

6. Conclusion

This study presents significant findings. The findings demonstrate that the utilization of Overture substantially improves students' proficiency in various aspects of aural musical abilities, such as melodic intervals, rhythmic patterns, monophonic music, and two-voice music, in comparison to the Control Group employing conventional approaches. These findings align with Mayer's (2010) cognitive learning theory, which emphasizes that multimedia music teaching applications facilitate music teaching and learning, thereby enhancing student performance. Overture provides scaffolding to students, helping them reach the Zone of Proximal Learning (Vygotsky, 1978; Zhong et al, 2020).

However, this study has limitations. Firstly, it involved only 70 students from Hunan City University (a comprehensive music university), suggesting the need for future studies with larger samples, including different types of music universities across China, to generalize the findings more broadly. Secondly, owing to time constraints, only four types of aural musical skills were examined. Subsequent studies may examine the impact of the Overture technique on the perception of chords and modes. Furthermore, this study exclusively

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compared the Overture method with conventional methods. Subsequent investigations may also involve conducting comparisons with the Auralia method, which is an alternative computer music software.

To sum up, music auditory training is essential for all music majors since it serves as the basis for developing musical ability (Braz et al., 2021). Music educators, particularly those in comprehensive music institutions, encounter substantial obstacles and must consistently incorporate novel approaches and strategies to enhance the appeal and inspiration of their lessons. The incorporation of Overture into the instruction and acquisition of aural musical skills, along with the examination of its effects on the aural abilities and motivation of Chinese students, adds to the existing knowledge base, confirming that digital technology can improve music auditory training.

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