Research and Analysis of Vocal Music Teaching Practice in Universities Based on the Concept of STEAM Education

Ji Lu[✉]

Jimei University, Xiamen, China
`jilubaritone@163.com`

Abstract. As China's comprehensive national power continues to grow, the need to enhance the soft power of culture is also on the rise. The development of cultural soft power is the main theme of the current era, and focusing on the cultivation of innovative talents and promoting the all-round development of students is one of the important ways to enhance the country's cultural soft power. STEAM education has been introduced to China from abroad for more than a decade since 2007. STEAM education is the integration of science, technology, engineering, art and mathematics disciplines, emphasising the breaking down of disciplinary barriers, building interdisciplinary thinking and developing innovative skills. To date, STEAM education has been introduced and although some success has been achieved, there are still shortcomings in the process of development. Further research is needed on how to integrate STEAM education concepts into the field of music education. In this paper, we use the literature research method, survey method and interview method to study the integration of STEAM education and STEAM education concept into the junior high school music classroom, taking Secondary School Y in County X, which is an early adopter of STEAM curriculum in schools in Province G, as an example. On the theoretical basis of literature collection, a questionnaire survey was conducted with school teachers and students. Through collating and analysing the design of music teaching examples with STEAM education concept, it was concluded that STEAM music classroom has advantages over traditional music classroom in terms of subject integration, unity and collaboration, and innovation. In the text, students' STEAM literacy: practical cognition, interpersonal interaction and integrated impact are used as the objectives of the music curriculum; the eight links of creating a situation, asking questions, feeling and appreciating, cooperating and exploring, sharing and communicating, expressing and creating, summarising and concluding, and expanding and extending are used as the music teaching process; the 5C model of 21st century core literacy and music core literacy: cultural understanding and transmission, critical thinking, creative literacy, communication literacy, cooperation literacy, aesthetic perception and artistic expression are used as the music teaching assessment.

Keywords: General music education · Vocal teaching · Teaching practice · Steam education

1   Introduction

With the development of human society, education has become more and more important to people. In the midst of the booming trend of education in the world, education in China is also heading towards a brand new stage of development [1]. It is an undeniable fact that music education occupies an irreplaceable place in the overall education system. Not only is professional music education developing rapidly, but public music education is also catching up with the trend towards systematisation and specialisation. From the traditional to the current reformed public music curriculum in colleges and universities, voice lessons in general colleges and universities have always occupied a very important place [2]. Vocal music is an expressive art that uses the human voice as a means of expressing music, expressing thoughts and feelings, and reflecting social reality. The singing instrument grows in everyone, normal people have a natural instinct for singing, and singing, thanks to its rich lyrics, can be understood more precisely than other forms of music, thus tending to develop a broad social nature [3]. Just as a great song or a great singer is more likely to be a household name in relation to other musical works and performers, creating a widely understood and accepted sociality. In general universities, students organise choirs, various singing competitions and other artistic activities without singing. These activities and practices provide opportunities for students to grow their talents, and the vast majority of students have been able to exercise, bring their artistic expertise into play, receive artistic education and cultivate their minds and emotions in participating in these activities. This is why general college voice lessons are a very popular and enjoyable subject for the general college student population [4].

2   A Study on the Theoretical Basis of Vocal Teaching in General Universities

2.1   Purpose of Teaching Vocal Music in General Education

General college vocal lessons are a direct and important way to implement quality education to general college students. Quality education refers to education that is based on the actual needs of human and social development, with the fundamental aim of comprehensively improving the basic quality of all students, respecting the subjectivity and active spirit of students, focusing on the development of human intellectual potential and the formation of sound human personality as the fundamental characteristics. The implementation of quality education is a necessity for the cause of socialist modernisation in China and extends to the socio-cultural level, where quality is the unity of individuality, community and nationality. This requires an emphasis on both the education of the individual in all its qualities and the improvement of the quality of the group, as well as a commitment to the improvement of the nation as a whole. The goal of quality education is the overall goal of public music education [4].

China's higher education institutions are facing a new historical period, and the cultivation of high-quality talents across the century has become an important and urgent task for ordinary higher education institutions. In the face of the many things brought about by the reform and opening up, and the Western culture, moral standards and

values that came with science, university students' minds became confused, and they were disturbed in their thinking by various modern philosophical trends, and became sceptical and rebellious towards positive education [4]. Due to the negative impact of narrow knowledge brought about by exam-oriented education, university students do not know much about the excellent art and culture of China and the world, and the quality of art is generally low, which makes university students have heart barriers in interpersonal communication, and art plays an inestimable role in the life of university students as the most universal and deep spiritual form when they are subject to difficulties and setbacks [5]. During this period, a portion of negative and vulgar art catered to this negativity and objectively grew the bitterness of university students. Arts education is highly valued by leaders at all levels as an important means of aesthetic education. It has become a serious and urgent task of art education in colleges and universities to educate students on aesthetics, improve their appreciation ability, cultivate their noble sentiments and strengthen their cultural cultivation [6].

2.2 Methods of Teaching Vocal Music in General Universities

(1) Integrated Learning

Integrated learning emphasises 'integration'. First, the ability to integrate. To complete integrated learning, students should at least have the ability to collect information, to analyse and judge and integrate information, to collaborate with peers, to inquire and to perform. Basic music reading and singing skills are required, as well as the ability to process and express the emotions of a song, and the ability to understand the social and cultural knowledge associated with the song. This basic requirement is complemented by the development of a holistic approach to learning by combining it with the student's creative and research skills. The second is the integration of the music discipline with other disciplines. The content of integrated learning is not limited to the discipline of music, but extends to the sister arts related to the discipline of music and to all aspects of social life and culture, moving towards crossover and integration of disciplines [7].

(2) Research studies

Research-based learning refers to a teaching method in which the musical material to be studied is used as the subject of discussion and research under the guidance of the teacher, and in which students take the initiative to investigate and experience first-hand in an open-ended scenario, thereby developing their creative awareness and ability to innovate. The specific performance in the following aspects a is to create the situation, focus on practice, to create the atmosphere of vocal learning. In the usual vocal music teaching, teachers often guide students to find the feeling of singing and singing feelings, so that students can make a real grasp of the emotions of the song and input, as if they were the main character in the song, the fundamental purpose of this creation of scenarios is to cultivate students' imagination, through imagination, to improve the students' singing emotional ability [8]. Secondly, it fosters creativity, focuses on development and develops the study of vocal culture learning. The teaching of vocal music in general universities is not only limited to allowing university students to learn vocal knowledge, but more importantly, to cultivate their creative ability in the process of vocal music learning, which is to

further improve their knowledge and ability, so that they can study and research in vocal culture while mastering vocal music knowledge. The characteristics of teaching in general universities and the teaching targets determine the significance of using research-based learning in teaching vocal music in general universities [9].

(3) Cooperative Learning

The importance of cooperative learning methods is determined by the characteristics of vocal music teaching in general universities themselves. Cooperative learning means cooperation between teachers and students, active and active participation of students, in which teachers and students work together to clarify teaching objectives, exchange ideas and emotions, and teach and learn through an equal, democratic and cooperative approach to cooperation and interaction between students and students. Such a teaching method can make the classroom atmosphere lively, increase students' interest in learning and reduce the mental phenomena such as stage fright and nervousness that students tend to have when learning vocal music.

(4) Tiered teaching

Non-music undergraduates have a wide range of vocal abilities, so the use of a tiered approach to teaching knowledge of skills and techniques is very appropriate. The so-called tiered teaching means that the emphasis is on the existing knowledge and ability levels of students in levels all students are given the improvement they deserve. Tiered teaching is when teachers scientifically divide students into groups of similar levels and differentiate them according to their existing knowledge, ability levels and potential dispositions, and these groups are best developed and improved by the teacher's appropriate tiered strategies and interactions.

In short, there is a method of teaching, but there is no definite method of teaching. In the process of teaching vocal music in ordinary colleges and universities, sometimes it is necessary to use a variety of methods with each other, to target, to achieve full mobilization, to teach in the learning, to learn in the teaching. The equal, democratic and harmonious organisation of teaching and learning activities is the basis, and the presentation of the students' subjectivity requires the cooperation of both sides of the teaching process. Practice makes perfect, and the methods cited above are only a few of the methods commonly used by the author in the teaching of vocal music in ordinary colleges and universities, to be further enriched and enhanced.

2.3 Principles of Vocal Music Teaching in General Colleges and Universities

(1) The principle of emotional and aesthetic cultivation as the main teaching purpose

The goal of vocal music teaching in general colleges and universities is to provide effective quality education for college students in general colleges and universities and to cultivate talents with high comprehensive quality, while the cultivation of emotion and aesthetics is an effective and direct means to carry out quality education.

(2) The principle of combining artistry and ideology

Vocal music teaching in general colleges and universities is an important part of art education in general colleges and universities, therefore, it shoulders the task of highly educating students in general colleges and universities. All aspects of vocal music teaching should focus on inspiring college students' aesthetic perception and experience, so that their emotions can be cultivated and their morals sublimated.

It should implement the principle of all-round development of morality, intellect, physique, beauty and labour, improve artistic and aesthetic taste and ability in the teaching process, and adhere to the principle of a high degree of unity between artistry and ideology.

In short, the all-round development of students is taken as the goal of development in the process of development. In addition to the collection of basic training methods, the artistry is integrated inside the students' minds to achieve the ultimate goal of training. The teaching of music will become much more emotional under the change of mind by bringing culture deep into the mind.

This has a direct and profound impact on both the teacher's teaching and the students' learning, which is invaluable for the development of the students' artistic sensibilities. Learning music is not something that can be accomplished overnight; the cultivation of musical interest and the formation of musical cells is dependent on subtle learning and influence.

3 Constructive Strategies for Integrating the STEAM Education Concept into the Junior High School Music Classroom

3.1 Teaching and Learning in the Traditional Music Classroom Versus the STEAM Music Classroom

In order to highlight the characteristics of STEAM music classrooms, the author compares and analyses traditional music classrooms with STEAM music classrooms in terms of teaching objectives, teaching philosophy, teaching process and assessment methods.

Teaching objectives: Traditional music teaching takes emotional attitudes and values, process and methods and knowledge and skills as teaching objectives; this STEAM music classroom is based on practical cognition, interpersonal interaction and comprehensive impact, and is based on the teaching objectives of the compulsory education music curriculum standards, incorporating core literacy and in line with the development of the new era.

Teaching process: The teaching sessions in traditional music classrooms are usually class introduction, song listening, song teaching, innovation and arrangement, and class summary; this STEAM music classroom is based on creating a situation, asking questions, feeling and appreciating, cooperating and exploring, sharing and communicating, expressing and creating, summarising and concluding, and expanding and extending. Compared with traditional teaching sessions, STEAM music classroom focuses more on collaboration and enquiry and expression and creation.

Evaluation methods: Traditional music classroom evaluation methods include process evaluation, summative evaluation and group evaluation; this STEAM music classroom not only uses traditional evaluation methods, but also uses the 5C model of 21st century core literacy and music core literacy as students' teaching evaluation according to the characteristics of STEAM education concept, which includes seven aspects of cultural understanding and transmission, critical thinking, creative literacy, communication literacy, cooperation literacy, aesthetic perception and artistic expression.

4 Conclusion

This paper focuses on the study of music teaching and the development of general music knowledge, and provides an in-depth analysis of the methods and modes of music teaching and the development of students' interest in music learning. STEAM education has taken root and flourished in various industries since it was slowly introduced to China from abroad, especially after the establishment of the STEM Education Research Centre in Beijing in 2017, STEAM education in schools has flourished. Domestic scholars have been integrating STEAM education concepts into various disciplines, mostly into science and technology aspects, and in recent years, as music intellectuals have been exploring STEAM education, they have gradually tried to integrate STEAM education concepts into music disciplines. Based on previous research, the author attempts to integrate STEAM education concepts into the junior high school music classroom in response to research results and shortcomings, and draws the following conclusions: domestic scholars have integrated STEAM education mostly into information technology, artificial intelligence and programming robotics, while research in this area is lacking in the junior high school music classroom, but it is practical and feasible. As the STEAM curriculum concept emphasises interdisciplinarity and a hands-on approach, many times incorporating science and technology for projects, this inevitably makes the integration of STEAM education concepts with music teaching difficult. However, the STEAM education concept itself is interdisciplinary, fun, experiential, artistic and collaborative, which coincides with the emotional, technical, visual and pleasurable characteristics of music, making the integration of STEAM education concept into the junior secondary music classroom indisputable. In the music classroom, we can not only use the knowledge of music itself, such as the Orff method of teaching music, small instruments, Kodály gestures, rhythmic rhythms and melodic lyric creation, but we can also combine music with other sister arts, such as: music and dance, by choreographing a dance to music; music and art, by painting a picture of what the music depicts; music and film, by setting music to a video, etc. Even music can be combined with non-arts, e.g. music with biology to understand our throats and vocal ducts, music with history to understand the context in which music was created, music with mathematics to understand the division of musical time values, etc.

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