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Teaching Strategy and Instructional System Construction of Chinese National Instrumental Technology Education

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ABSTRACT

According to rapid development of Chinese national instrumental technology, there is an urgent need of teaching strategy and instructional system construction of Chinese national instrumental technology education. This study focuses on constructive suggestions to strengthen the national instrumental education, builds the professional education of national instrumental teaching strategy, and raises a set of instructional system of Chinese national instrumental technology education including teaching objectives, principles, methods, curriculum system (basic courses and specialized courses), 360-degree instructional evaluation measurements and administration suggestions through interdisciplinary research. This article provides the curriculum education template for the national instrumental technology education which has been proven to be very successful.

Keywords: teaching strategy, instructional system, Chinese national instrumental technology education, 360-degree feedback system, curriculum development

INTRODUCTION

With the rapid development of the Chinese national spirit culture, all walks of life show the diversified expansion trend, especially the rapid growth of social demand for national instrumental talents. There is a big gap between the supply and demand of Chinese national instrumental talents, and this contradiction has become increasingly prominent, particularly for high quality instrumental professionals. As an important component of the instrumental education system, the Chinese national instrumental talents education has attracted the academic and social attentions. According to the needs of China national instrumental professional education, this study constructs the system of professional teaching strategy of instrumental technology education, including the definition of education objectives, curriculum system and requirements, and creates instructional mode of ethnic instrumental professional talents, in order to promote the rapid development of national instrumental professional talent cultivation in China.

RESEARCH METHODOLOGY

Chinese national instrument is one of the most important parts of China national traditional culture. For a long time, China school instrument education is strongly influenced by western instrumental concept and aesthetic spirit in terms of institution system, education contents and method that forms the situation of school instrument education in China centered on western instrument culture (Zhang & Yin, 2012). China's national

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State of the literature

- China school instrumental education is strongly influenced by western instrumental concept and aesthetic spirit in terms of institution system, education contents and method that forms the situation of school instrumental education in China centered on western instrumental culture.
- Traditional Chinese national instrumental technology education is more specific to play instrumental teaching, and rarely gradually and systematically teach the students to learn instruments and practice teaching mode.
- There are fewer practical researches on Chinese national instrumental scientific and systematic theory for teaching

Contribution of this paper to the literature

- Build up a strong performing-art-based national instrumental technology education curriculum construction which is closely related to Chinese traditional instruments, can activate students' study interest and help them better understand national instruments.
- Design practical teaching strategy and a set of instructional system of Chinese national instrumental technology education including teaching objectives, principles, methods (individualized teaching and behavior modeling), curriculum system (basic courses and specialized courses), evaluation measurements and administration suggestions.
- Create instrumental technology teaching process and 360-Degree instrumental teaching appraisal system through the method of interdisciplinary research, to specifically guide students' learning, practicing and performing activities.

instrument once played an important role in the world's history of art (Yang, 2015). Based on the current social development needs, it is strongly recommend strengthening national instrument, traditional culture and consciousness. It triggered the discussion of national instrumental curriculum and teaching system in school national instrumental education with China cultural style during the development of instrument education in China schools.

Traditional Chinese national instrumental education is more specific to play teaching, and rarely gradually and systematically teach the students to learn instruments and instrumental practice teaching mode. There are fewer practical researches on Chinese national instrumental scientific and systematic theory for teaching. Build up a strong performing-art-based national instrumental technology education curriculum construction which is closely related to Chinese traditional instrument, can activate students' study interest on folk instrument and help them better understand national instrument. Thus, creating and designing teaching strategy and instructional system of national instrumental education has broad historical significance and positive practical significance for the development of Chinese national instrument.

In the national instrumental teaching, teachers should establish the professional performance and teaching theory through the method of interdisciplinary research, to guide students' learning, practicing and performing activities. Young, Burwell and Pickup (2003) proposed a framework for instrumental teaching drawing on two models--one for 'areas of study' and the other for 'teaching styles'. During communication with students, teachers should respect students' attitudes, and keep the objective and strict teaching style to cultivate students' enthusiasm and initiative (Price, 2012). Students gradually establish active questioning, active thinking, and active learning attitude (Hietanen, Ruokonen, Ruismäki, & Enbuska, 2016).

Based on the need analysis and students' readiness, it is critical to create instrumental teaching system including teaching objectives, principles, curriculum, instruments, and practice (Niazi, 2011). Then teachers should select the instrumental teaching method and technology such as individualized teaching and modeling, and be evaluated and get feedback for making improvement. Definitely, the instrumental teaching administration enhances the whole education system (as referred [Figure 1](#)).

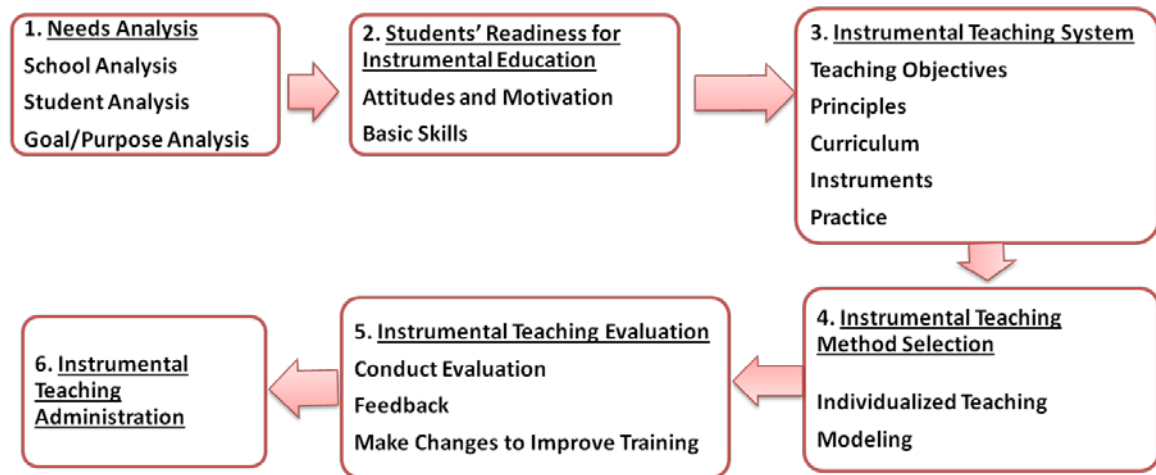


Figure 1. Chinese National Instrumental Teaching Process

TEACHING OBJECTIVES

With the development of Chinese social culture, there are new requirements on the training of folk instrumental talents that affect the traditional instruments, instrumental forms of expression and instrumental education changing, and update people's understanding of instrumental art constantly. Judged by words, science and art are two entirely different disciplines, but since ancient times, the development of art has been continuously benefiting from the progress of science. In the process of instrument instrumental education, teaching is an art phenomenon that involves the spiritual world and the conceptual world directly, including creation, knowledge education, and communication. The factors of instrumental education develop creative ability, critical thinking, imagination and cognition in schools, and have a great influence on grow up in a professional instrumental career. The study found that instrumental education involves all aspects of personal development: confidence, self-esteem, emotional sensitivity, social skills, team work, relax learning, wisdom, movement coordination, interpersonal relationship, social ability, reading ability, creativity, spatial reasoning, memory, self-expression, critical thinking, and problem solving ability (Kafol et al., 2015). In different learning situations, students should develop the ability to experience, learn and express instrument, which is a comprehensive experience.

According to the need of education reform and development, the purpose of national instrumental education is to cultivate talents with comprehensive professional knowledge and strong instrumental skills. After training, students should have comprehensive professional basic knowledge, excellent comprehensive practice ability, and the ability of national instrumental research work.

From reality, schools have to absorb talents with distinctive characteristics: attitudes and motivation, and basic skills. Through strict management and applicable teaching, schools can enable students to acquire performance skills in a comprehensive and proficient manner, in order to be competent for Solo, ensemble and accompaniment in the future.

Combined with the actual needs of professional construction, students learn folk instrumental technology scientific knowledge, skills and abilities, and are trained to be comprehensive talents with strong theoretical knowledge, practical ability and team cooperation ability.

TEACHING PRINCIPLES

Teachers should be concerned about the overall development of students. They are not only professional and technical guidance, but also the educators of students' political thinking, literary and artistic accomplishment

and social activities. In the entire national instructional teaching process, teachers must set an example and model for students to cultivate students' study indomitable will. Arghode, Yalvac, and Liew (2013) conducted a study that emphasized teachers' empathy to encourage student-centered instruction. Teaching principles of Chinese national instrumental technology talents education are as following:

- (1) Love instrument, have good professional ethics and artistic character.
- (2) Master the basic knowledge of instrumental theory, understand the instrumental development of at home and abroad, be familiar with the language style of instrumental works, and have a certain understanding and performance ability.
- (3) Grasp the performance methods and techniques of instruments, and be able to play independently.
- (4) Understand and perform the conductor's interpretation of the work correctly.
- (5) Use preliminary knowledge and skills of command to organize small and medium ensembles.
- (6) Strengthen and emphasize the cultivation of students' comprehensive ability in the Accompaniment, Unison, Ensemble, and Coro besides Solo.
- (7) Increase play practice opportunities, and encourage students to participate in different forms of performance practices.
- (8) Comprehend the characteristics, rhythm and structures of various instrumental styles, command to use learned knowledge to play all kinds of tracks, and build a good foundation for future performance.

CURRICULUM SYSTEM

The curriculum system of national instrumental technology education includes the following aspects:

Elementary Courses

Instrument is not one-dimensional that requires perceptual skills (for example, understanding structural information and social information), cognitive abilities (such as memory, decision making, pattern recognition), and motor skills. The functions of these skills continue to interact and develop. Because instrumental skills have complex and multiple influences on individuals, instrument plays an important role in their intelligence and thinking ability.

Moral education (Politics, History and Mental health education)

Courses of moral education are the courses to lay a solid foundation for the healthy development of students' ideological and moral characters. The aim is to educate students on the common knowledge of politics, economy, society and culture in China, and make them understand how to be a man. Students learn to understand China's national conditions, inherit the fine cultural traditions of the Chinese nation, and cultivate their self-esteem and self-confidence. Through it, students can form correct outlook on life, values and morality, and have civic consciousness and humanistic quality in line with the needs of social development. Mental health courses strengthen the education of basic knowledge, methods and consciousness of students' mental health. Meanwhile, they help students correctly cope with the psychological problems encountered in growth, study, life and job hunting, and promote the healthy and harmonious development of students' mind and body.

Intellectual education (Chinese, English, Math and Computer courses)

The starting point is to promote the all-round, sustainable and harmonious development of students. Intellectual courses make students have comprehensive language ability, exercise their abilities of observation, memory, thinking and imagination (Topoğlu, 2014). Chinese course practices students' reading, writing, spoken language and literature appreciation ability, cultivate their aesthetic taste and aesthetic ability, and form sound personality. English course let students understand the differences of world culture, open their horizons, train students' thinking ability, and constantly explore and solve practical problems. Through the basic knowledge of computer application, students can skillfully operate computer skills, apply computer to solve practical problems

in work and life, and lay the foundation for lifelong learning. The purpose is to improve the students' comprehensive quality.

Physical education

Through the basic knowledge learning of sports, physical education train students' sports skills, master the basic scientific method of exercise, promote exercise habits and self-study ability of work and rest; cultivate students' consciousnesses of self-health care, self-evaluation, self-training and self-regulation to improve psychological quality and ability of social adaptation.

Professional Basic Courses

Sight singing and Ear training

The teaching task is to organize and nurture students' ability of auditory analysis of various basic elements of instrumental language, and train students to actively use the instrumental listening ability to performance practice and creation. It is able to lay a good and acute hearing foundation for students' professional learning. At the same time, it also expands the students' instrumental vision field, and trains the students' artistic interest and the hobby of national instrument.

This course is taught in a collective way. Through weekly collective inspection of sight-singing, compose - singing, recite- singing, and dictation, students consolidate and deepen the theoretical knowledge. Practice materials of ear training include not only traditional harmonies but also modern harmonies of chords (Wang, 2012).

Grading system is used in solfeggio teaching's student assessment and management. The purpose is to make the learning objectives concretization and phased, so that students can clearly understand the process of learning and the goals of learning at different stages. The assessment and management of grading system must examine the starting level and teaching results. Strict management makes the system go deep into the hearts of students that are aimed at achieving better learning results.

Instrumental theory

The course is based on the basic theory of European traditional instrument in eighteen and nineteenth century, and joints some basic knowledge of China national instrument. Teaching should base on the characteristics of the students and pay attention to the training of theory and practice combined with effective solfeggio and Chinese national instrumental appreciation courses. Teaching makes students' comprehensive and solid grasp of theoretical knowledge and operating skills of this basic course.

By collective instruction, teachers systematically instruct basic instrumental theory combined with the typical case analysis to let students consolidate and deepen the theory of knowledge.

Instrumental appreciation

The course makes students understand the creation characteristics of instrument and instrumentalists in different periods, so as to expand their instrumental horizons and enrich their professional knowledge of instrument by appreciate instrument and proper analysis.

Chinese national instrumental performance appreciation

The group appreciation of Chinese national instrumental performance has a far-reaching and extensive teaching significance. First, it can carry forward the spirit of patriotism and be proud of the Chinese nation. Second, national instrumental performance can cultivate the students' disposition, and gradually improve the students' national psychological quality so that students can inherit the outstanding heritage of the national culture. Third, through the feelings of national culture, it will develop national instrument and promote national composition to the world.

Western instrumental history teaching

The history of western instruments is divided into five parts: early, baroque, classical, romantic and modern. Furthermore, the composition of each period is divided into six parts: subject, melody, rhythm, harmony, tone and texture. In western instrumental history learning, students can learn six related subjects in each historical period, and study a subject in different historical periods. Students can chronologically see and hear the stylistic features of various melodic elements displayed in a period of time, and observe the evolution of a composition style in different historical periods.

Professional Skills Training Courses

Specialized courses

Specialized courses focus on the training of basic skills gradually to consolidate students' foundation, master the performance ability of various styles of composition gradually, and lay a good foundation for further study.

By 'one to one' individual teaching, flexible teaching methods can be chosen according to each student's instrumental level and ability. During this progress, the lessons should strictly require the basic skills of training and gradually strengthen systematic, scientific and technical training adhere to the practice of combining classroom teaching and performance.

The contents include various basic trainings: scales, arpeggios, chromatic and chord practice; theoretical knowledge and technical training; all kinds of performance.

Piano minor subject

Piano technical training can improve students' understanding and expression of instrumental works, enrich students' instrumental knowledge, and increase students' art cultivation.

Ensembles

Band ensemble is a professional basic course, which aims at developing students' cooperation with others in performing instrumental compositions, and the ability to control themselves in concert.

The ensemble is a scientific art. According to scientific training methods, this course make students systematically master the basic knowledge and theory of ensemble, comprehensive grasp of basic instrumental theory (Tan, 2016).

Harmony

Through the course of teaching, students master the basic theory and writing skills of traditional harmony, understand Europe sound from classical to romantic style, and set a good foundation for further learning of other courses and technical theory. The course is taught in a combination of collective and individual courses.

TEACHING METHODS

Teachers are required to teach students in accordance with their aptitude according to their learning characteristics, and teach them how to interpret and play instrument reasonably through different teaching methods (Munteanu, Gorghiu, & Gorghiu, 2014). The teaching process of national instrument technique education is the students' learn and master progression of playing skills under teachers' guidance and help, and also the students' learn procedure of analyzing, understanding and interpreting various composition with different historical periods, cultural background and style. According to the specific level and the acceptable ability of each student, the methods can be flexible and diverse. Teachers should pay attention to teaching science and improve students' instrumental knowledge and art accomplishment step by step. Teachers should not only point out the shortcomings of students' learning and performance, but also tell the students their advantages and strengths. At

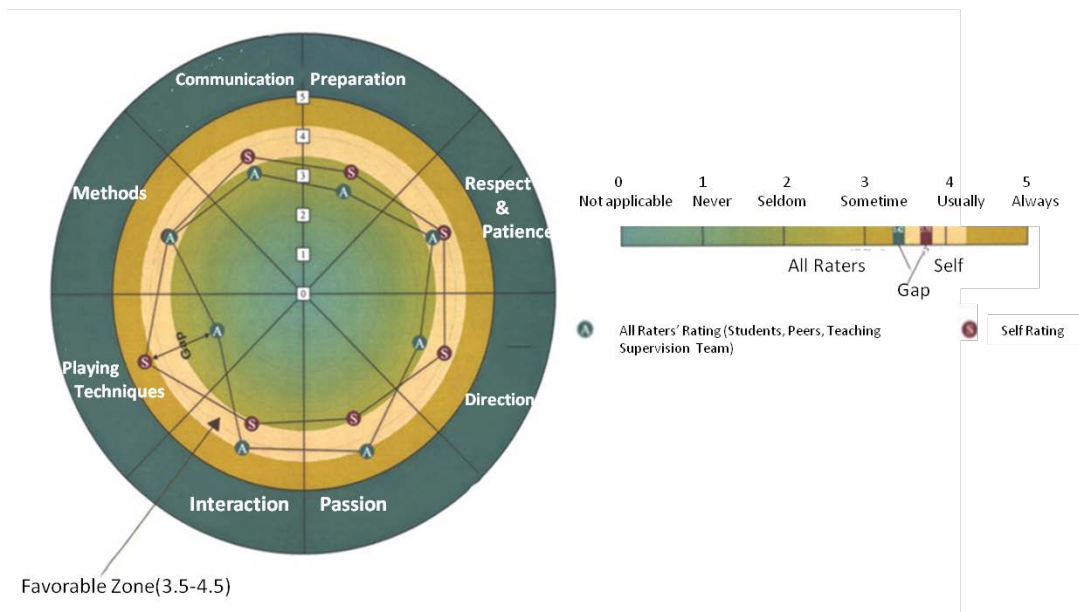


Figure 2. Chinese National Instrumental Technology Teaching 360-Degree Appraisal System

the same time, teachers have clear views and explanation in class teaching, but also require students strictly in the assignments.

The teaching of the national instrument in schools should grasp the principle of teaching students according to their aptitude, which is not the same requirement of the students' playing posture and body structure. Then, in the process of national instrumental teaching, there will be different situations; teachers do not form a unified standard, so there is no need to complete a unified measure. National instrumental teaching must realize individualized teaching process according to the student characteristics. For example, students' playing posture impact composition, and teachers require students to select different or maintain the same posture to meet the performance requirements in the learning process. In the course of teaching, it is not influenced and restricted by traditional playing methods and postures. As long as students grasp a certain posture deviation in the course of learning, teachers try to unify the movements and postures so that students can achieve very good results when playing. In the teaching of national instrumental technique, it is necessary to select a flexible and diverse teaching mode, so as to avoid students in a passive position in the process of learning. This will help students understand the connotation of national instrument in school and then grasp the necessary rules of performance through teachers carefully guide and teaching methods innovation.

Behavior modeling method can also be used for teaching. Teachers demonstrate key behaviors to replicate and provide trainees with the opportunity to practice the key behaviors.

INSTRUCTIONAL EVALUATION MEASUREMENTS

360-degree feedback systems are the tools to help teachers improve performance by using performance information gathered from many sources as **Figure 2**. The 360-degree teaching evaluation is open, fair and just (Bracken & Rose, 2011). Instructional performance evaluation is an important link for students to communicate with professional teachers. The implementation of quantitative indicators enhances fairness and objectivity of the evaluation, and creates a harmonious and pure learning environment for schools.

Students' Evaluation of Teaching

Student evaluation has been regarded as an important source of information in teaching evaluation. As the direct object and experience of teaching, students' evaluation of teaching is the most widely used method in teaching evaluation.

Students provide feedback freely. Students can make an informal assessment of teacher's teaching behavior and effects by e-mail or written evaluation.

Peer Evaluation

Peer evaluation is a teacher's evaluation of the other teachers' teaching with same subject and specialty. Based on the complexity of profound knowledge and academic community discipline in the same subject, professional teachers are more likely to provide scientific and rational evaluation of teaching system arrangement, content, difficulty and knowledge update degree.

Teaching Supervision Evaluation

Teaching supervision evaluation is that schools invite progress advisors to arrange scientific and standardized inspection and evaluation activities according to the teaching requirements.

Supervision and evaluation of teaching has the following characteristics: Firstly, it is relatively independent and objective that can be beyond interests from the training unit specific demands and be external evaluation on behalf of the school teaching management organization; Secondly, years of supervision and teaching experience formulate their abilities to make a fair and reasonable evaluation of teachers' teaching characteristic in common; Third, as the result of inspection and evaluation is carried out in big disciplines of knowledge and they may be not familiar with developments in various disciplines and specialties, the teaching evaluation often cannot deep in professional and scientific content, and it is difficult to propose specialized teaching suggestions, which becomes a kind of 'evaluation in regard to form'.

Self-Evaluation

Teacher self-evaluation is a teacher's self-assessment of the courses offered and their teaching. From the view of teachers' development, self-evaluation on the achievements of teaching goal, teaching plan, teaching content design and teaching effect is capable of strengthening reflective teaching and improving their teaching ability. It not only reflects the real situation, the style and characteristics of teachers' teaching, but also can be a sign of the workload and professional achievements of teachers.

More importantly, with the passage of time, teachers can record, collect, summarize and analyze their own teaching process to rethink their teaching comprehensively, summarize achievements and advantages, and find and examine the problems and disadvantages.

DISCUSSION AND CONCLUSION

With the rapid development of economy and society in China today, the demand for national instrumental talents is increasing rapidly, and the contradiction between supply and demand of instrumental talents and social development is becoming prominent increasingly. The teaching administration takes an important role and brings discussions. The discussed suggestions are as follows: (1) Organize teachers to carry out scientific research, propose quantitative scientific research objectives, and strengthen supervision and inspection. (2) Expand further opening up, and reinforce academic information exchanges and activities at home and abroad. (3) Hold academic seminars regularly to fortify theoretical research and teaching discussion for strong academic atmosphere. (4) Exchange and review scientific research results on a regular basis, and recognize and reward outstanding achievements. (5) Encourage composition and performance, and strongly support teachers and students to participate in various competitions at home and abroad with the reward mechanism improvement. (6) Build up the competency-based

curriculum system construction, and establish the curriculum system with distinct characteristics. (7) Construct a scientific teaching evaluation and incentive mechanism.

This research presents instrumental teaching process. Through the need analysis of school, student and society, and the judgment of students' attitudes, motivation and basic skills readiness, it is critical to create instrumental teaching system including teaching objectives, principles, curriculum (elementary courses, professional basic courses, and professional skills training courses), instruments, and practice. Subsequently, teachers select the instrumental teaching method and technology such as individualized teaching and modeling, and are evaluated and get feedback for making improvement based on 360-Degree Appraisal System of instrumental technology teaching. Positively, the instrumental teaching administration suggestions enhance the whole education system. This study raises practical teaching strategy and instructional system construction of Chinese national instrumental technology education that can be used as a curriculum education template immediately.

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