A Conceptual Framework for Curriculum Development Utilizing the FCM Module in a Flipped Classroom for Music Theory

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Abstract

Traditional music theory teaching methods are challenged by evolving student needs due to technological advancements and updated educational concepts. There is a need to address current limitations, such as single curriculum teaching, and propose a conceptual framework for integrating new technologies in a flipped classroom environment. This study aims to enrich course content, enhance practical integration, and update educational concepts, the study improves students' comprehensive understanding and application of music theory. A five-step pedagogical approach was adopted to take a comprehensive literature review, key findings highlight the need for diverse course content, integration of practice theories, and modern educational resources to stimulate student interest and creativity. The proposed framework offers a structured approach to music theory education, meeting modern societal needs and promoting students' musical literacy and creativity.

Keywords: *Music Theory, Flipped Classroom, Self-Directed Learning, Collaborative Learning Theory, Curriculum Development Theory.*

INTRODUCTION

Music theory, as an important part of music education, aims to help students understand the basic components of music, including music theory knowledge, harmony theory, sight singing, and ear training. With the deepening of educational reform, music theory courses are constantly adjusting and developing to meet new teaching needs and social and cultural contexts. With the rapid development of information technology, music education is also facing the opportunities and challenges of digital transformation, and how to effectively combine information technology with music theory teaching has become a current research hotspot (Huang, & Shi, 2024).

At present, there are still many limitations in music theory teaching, such as single course content, lack of practical integration, and lagging educational concepts. The single curriculum content is mainly reflected in the fact that many music theory courses are still stuck in the traditional music theory teaching, and lack of in-depth exploration of modern music forms and techniques. This single teaching mode makes it difficult for students to fully understand and apply music theory (Yang, 2024). The lack of practical integration is mainly reflected in the fact that the teaching of music theory tends to emphasize the teaching of theoretical knowledge and neglects the integration with actual performance and composition. Students lack the opportunity to apply theory to practice in the learning process, resulting in poor learning results. The lagging education concept is mainly reflected in the fact that some music education still follows the traditional teaching concept and fails to update it in time to meet the needs of modern society for music education. This lag makes the educational content out of touch with the social reality, which affects students' learning interests and innovation ability (Ma, 2024).

The aim is to enrich the curriculum by working on the integration of modern musical forms and techniques in order to enhance the depth and breadth of the music theory program. This initiative is designed to enable students to fully understand and effectively apply their knowledge of music theory. In the implementation of the program, emphasis will be placed on strengthening the practical aspects of the program by increasing the number of opportunities for actual performance and composition, so that students can combine theoretical

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knowledge with practice, thereby enhancing their learning outcomes. At the same time, it is committed to updating educational concepts and introducing modern educational models such as self-directed learning and collaborative learning. The incorporation of these concepts not only promotes the innovative development of music education but also enhances students' interest in learning and innovation. In this way, it is hoped that students' initiative and participation can be stimulated and that they can be trained to become innovative music practitioners.

This study is significant at both theoretical and practical levels. Theoretically, it expands the knowledge system of music theory teaching and verifies the teaching effect of the flipped classroom, and practically, it provides music educators with effective teaching strategies to enhance students' comprehensive literacy and learning effect. At the same time, this study also helps to promote the overall reform and development of music education, making it more in line with the needs of modern society.

METHODOLOGY

This paper presents a conceptual framework for course development using FCM (Flipped Classroom Modules) in a flipped classroom environment for a music theory course. As shown in Figure 1, the framework is organized around a five-step approach aimed at adapting self-directed learning modules to meet the pedagogical needs of a flipped classroom environment. The first step is to identify the target users, which in this case are university students taking a music theory course. Understanding the specific needs and constraints of the students is crucial for the effective design of the module. The second step was to conduct a comprehensive literature review to collect relevant data and variables through the Literature Review Synthesis Process. Following Ibrahim's method of categorizing research question structures, four different research question structures were delineated - "WHO", "WHAT", "HOW1" and "HOW2" - to formulate research questions and keywords. Here, "WHO" refers to students in higher education music theory courses, "WHAT" refers to the content of these courses, "HOW1" refers to flipped classroom implementation, and "HOW2" refers to self-directed learning strategies.
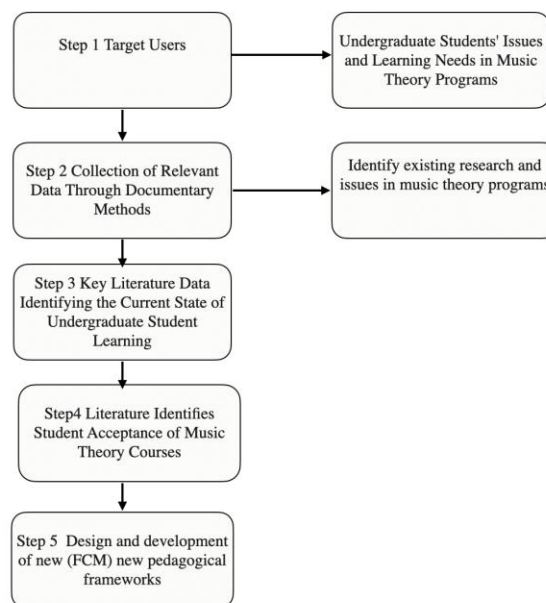

Figure 1: Five-step approach

Based on these RQ structures, four themes were established to guide the collection of relevant articles: a) the current status and needs of undergraduate students in music theory courses; b) factors influencing undergraduate students' learning in music theory courses; and c) key factors influencing the design of self-

directed learning in undergraduate music theory flipped classroom instruction; articles were obtained from Google Scholar, Scopus, Web of Science and CNKI databases, with the keywords ("college music theory courses*" or "college music courses*"), ("music theory courses* " or 'music discipline*') and ("flipped classroom*" or 'framework for self-directed learning practices*' or " Curriculum Development Theory*" or 'Collaborative Learning Theory*'). An initial 213 articles were identified through title search and abstract screening of all research articles from 2015 to 2023. A total of 113 articles were considered after manual screening of the primary literature. Inclusion criteria included (1) studies focusing on students in advanced music theory courses, (2) studies in which students engaged in a framework of flipped classroom self-directed learning practices, and (3) studies that primarily used flipped classroom and self-directed learning methods. The exclusion criteria were (1) studies of non-music theory courses, and (2) studies in which students did not engage in the assigned learning framework. Using these criteria, 43 articles were selected for review.

The third step focused on identifying key variables that influence student engagement in the flipped classroom and self-directed learning in higher education music theory programs. The fourth step was to identify other key variables and relationships that influence student acceptance of flipped classroom and self-directed learning practices. Finally, a conceptual framework was constructed based on the collected variables.

In summary, the methodology outlined in this paper provides a structured approach to the design of flipped classrooms and self-directed learning practices to meet the needs of students in higher education music theory programs. The rigorous literature review process and the identification of key variables and interrelationships provide a solid foundation for the development of a conceptual framework that addresses the unique needs and limitations of this particular group.

RESULTS

Current Status and Needs of Undergraduate Students in Music Theory Courses

The study found that there are some problems in teaching music theory courses, one of which is the single content of the courses. Many current music theory courses focus mainly on teaching traditional music theory, which is relatively homogenous in content and lacks in-depth exploration of modern music forms and techniques (Wu, 2021). This makes it difficult for students to meet the learning needs of different musical styles and forms. For example, music theory courses often focus on basic theoretical knowledge such as scales, modes, chords, and music analysis, but seldom cover areas such as popular, contemporary, and cross-cultural music. As a result, students are unable to fully understand and master the characteristics and performance techniques of different music genres, limiting their diversity and innovation in music composition and performance (Huang, & Shi, 2024).

Besides, there is a disconnect between theory and practice. In the teaching process, there is often a bias toward teaching theoretical knowledge, neglecting the integration of actual performance and composition, and students lack the opportunity to apply theory to practice. This means that students are often confused in practical application and find it difficult to effectively apply what they have learned to music creation and performance, resulting in poor learning outcomes (Xue, 2021). Students may have mastered some theoretical knowledge but are unable to apply it when faced with practical situations. Therefore, teaching should focus on the organic combination of theory and practice and cultivate students' musical expression and creativity by letting them participate in the practical activities of music performance and creation (Liu, 2021).

The problem of lagging educational concepts. Some music theory courses still follow the traditional teaching concepts and methods and fail to update them to meet the needs of modern society for music education (Zhang, 2024). The traditional teaching mode lacks innovativeness and is difficult to stimulate students' interest and enthusiasm in learning. Nowadays, students' perceptions and needs for music are constantly changing. Therefore, educators need to update their teaching concepts and adopt more flexible and diverse teaching methods and techniques, as well as up-to-date teaching contents, so as to better meet students' learning needs (Zhang, 2024).

In addition, there is the problem of limited learning resources. Many music theory courses lack modern teaching resources and means, such as multimedia teaching materials and online learning platforms. This leads to a relatively single channel for students to acquire knowledge, and they often face difficulties in the process of independent learning outside the classroom, making it difficult for them to receive effective guidance and support (Kennell, 2021). For example, students may find it difficult to find relevant music theory materials, teaching videos or communication platforms to broaden their learning horizons. Limited learning resources restrict the depth and breadth of students' learning and constrain their learning effectiveness and development potential. Therefore, music theory teaching should actively introduce modern educational technologies and learning resources to provide diverse learning pathways and resources to help students learn and develop better (Qisen, Nasri, & Jamaludin, 2023).

The course content is designed to comprehensively cover the diverse elements and forms of modern music, including electronic music, pop music, and movie soundtracks, with the aim of broadening students' knowledge and deepening their appreciation and understanding of various musical styles. The goal is to create a rich and varied curriculum that meets the individual needs of students (Nadírova, & Ayapova, 2024). In the program, students will have the opportunity to explore a wide range of musical works in depth and to integrate theoretical knowledge with practical skills through hands-on performance and compositional activities. Emphasizing the integration of theory and practice, the course aims to enhance students' comprehensive abilities through practical exercises and to equip them with more practical skills in performance and composition (Shen, 2023). In addition, the practical activities are designed to be more diversified, including group performances and individual creative projects, etc., in order to increase the fun and practicality of learning, thus stimulating students' enthusiasm and initiative. Through these diversified practical activities, it is expected that students can continue to explore and innovate on the path of music learning, and ultimately realize the overall improvement of their personal music literacy (Lee, 2023).

In conclusion, as Table 1 lists, to solve the problems in music theory courses, it is necessary to enrich the course content, strengthen the combination of theory and practice, update the educational philosophy, and introduce modern teaching resources, so as to improve the quality of teaching, stimulate students' interest, and promote the overall development of students' musical literacy and ability.

Table1: Music Theory Program Issues and Needs

Classification of the problem/status quo	Description of Specific Problems	Improvement measures
Monotony of course content	The curriculum focuses mainly on teaching traditional music theory and lacks in-depth exploration of modern musical forms and techniques.	Introduction of modern musical elements such as electronic music, pop music, movie soundtracks, etc. to broaden students' horizons.
Disconnect between theory and practice	Teaching favors theoretical knowledge and neglects actual performance and creation, and students lack practical opportunities.	Strengthen the connection between theory and practice by combining practical performance and creative activities.
Poor learning outcomes	Students have difficulty in effectively applying what they have learned to music composition and performance.	Design diversified practical activities, such as group performances and individual composition projects, to enhance learning.
Poor learning outcomes	Students have difficulty in effectively applying what they have learned to music composition and performance.	Design diversified practical activities, such as group performances and individual composition projects, to enhance learning.
Limited learning resources	Lack of modern teaching resources, such as multimedia teaching materials and online learning platforms.	Introduce multimedia teaching materials and online learning platforms to provide richer learning resources.

Influential Factors on Undergraduate Students' Learning in Music Theory Courses

Influencing factors of learning in music theory courses Teachers' teaching methods and teaching styles have a direct impact on students' learning outcomes. If teachers use only one teaching method, such as only lecturing, it will lead to students' lack of understanding of music theory. However, if teachers are able to use a variety of teaching methods, such as a combination of lectures, discussions, group activities, and hands-on exercises, then

students will have more opportunities to practice and apply what they have learned, leading to a better mastery of music theory (Whittle et al., 2022).

In addition, students' motivation can have a significant impact on their performance in music theory courses. Students' level of interest in music as well as their desire to achieve good grades and future careers can affect their motivation. Students will be more focused and engaged in music theory if they have a strong interest in music and a clear desire to achieve success in the music field (Asmus, 2021).

Additionally, a student's background knowledge and skill level in music prior to entering a music theory program can also affect a student's performance. Students who have a more solid foundation in music and already possess some music background knowledge and skills will grasp complex music theory concepts more quickly. This is because students already have some relevant knowledge and skills and are able to more easily relate new knowledge to what they already know and develop a more complete understanding (Wei, Karuppiah, & Prathik, 2022).

The learning environment of students in a music theory program is also a factor that influences student learning. First of all, a good classroom atmosphere leads to positive learning and encourages a learning atmosphere where students respect each other and cooperate. This means that teachers should have good teaching attitudes and teaching methods to stimulate students' interest in learning so that they can devote themselves to learning. Also, appropriate learning resources and equipment are an important factor. Students need to have sufficient teaching materials and reference materials, as well as equipment and tools suitable for their learning. In this way, students will be able to acquire knowledge and study more easily. These factors can help students to stay in good physical and mental condition and increase motivation and initiative in learning (Møller-Skau, & Lindstøl, 2022).

Discussion and group interaction is also an important learning environment factor. Interaction between students and group learning can provide additional learning support and motivation. Through communication and collaboration in discussions and group interactions, students are able to learn from each other's experiences and increase their ability to understand and apply their knowledge. In addition, group learning develops students' teamwork and communication skills, providing them with a good foundation for future social interactions (Müller, & Mildenberger, 2021).

Assessment and feedback are also a key factor. Regular assessment and timely feedback help students understand their progress and deficiencies in learning. Effective assessment methods should include multiple forms of tests and practical assessments to provide a comprehensive picture of students' learning. At the same time, teachers should also give timely feedback to students and guide them on how to improve their deficiencies. Through assessment and feedback, students can continuously improve their learning effectiveness and learning ability and realize good learning outcomes (Ruiz-Jiménez et al., 2022; Othman et al., 2023).

In conclusion, teaching music theory courses requires comprehensive consideration of the diversity of teaching methods, students' motivation, music background knowledge, optimization of the learning environment, and timeliness of assessment and feedback, which can significantly improve the quality of teaching and students' learning outcomes in music theory courses.

Key Factors Influencing the Design of Independent Learning in Flipped Classroom Teaching of Music Theory

The key factor affecting the design of self-directed learning in flipped classroom teaching of music theory is the development of students' self-directed learning ability refers to the process in which, under the guidance of the teacher, students achieve their learning goals through independent analysis, exploration, practice, questioning, and creativity (Zainuddin, & Perera, 2019). This type of learning encourages students to think actively and solve problems independently and develops their self-directed learning skills and creativity (Al-Zahrani, 2015). In order to promote students' self-directed learning, teachers need to develop a reasonable learning plan, clarify learning goals, and guide students to develop a sense of purpose. By clarifying the goals, students can clearly know what they want to learn and can reasonably allocate their study time and energy (Jian, 2019).

In addition, teachers should also focus on creating a good learning atmosphere and environment. By creating a positive, enjoyable learning atmosphere that encourages exploration and innovation, students' interest and initiative in learning can be stimulated (Sointu, et al., 2023; Shen, & Chang, 2023). Teachers can organize activities such as study groups or cooperative projects to encourage communication and interaction among students and promote learning sharing and cooperation among them. At the same time, teachers should give students appropriate feedback and guidance to help them identify problems and deficiencies in their own learning so that they can proactively make adjustments and improvements (Akçayır, & Akçayır, 2018).

In the repositioning of the teacher's role, in the flipped classroom, the teacher's role changes from the traditional knowledge transmitter to the learning guide, collaborator, and organizer of instructional assessment (Rivadeneira, & Inga, 2023). Teachers need to guide students to deeper learning while students collaborate with teachers to make progress and conduct fair and equitable teaching evaluations (Kay, MacDonald, & DiGiuseppe, 2019; Lee, 2018). Personalized learning support flipped classroom emphasizes personalized learning, and teachers should adjust teaching strategies to stimulate students' academic enthusiasm and needs, and support students' autonomy in organizing their learning and arranging their learning pace (Cevikbas, & Kaiser, 2022).

In conclusion, teachers need to focus on developing students' independent learning skills in the design and organization of classroom activities. Through reasonable learning plans, clear learning goals, a good learning atmosphere and environment, and self-checking and reflection, teachers can effectively promote students' self-directed learning and improve their learning outcomes.

DISCUSSION

Development of Music Theory Curriculum

Music Theory Curriculum, Curriculum development is a vital and multifaceted process in education that involves activities and experiences planned to achieve learning objectives (Wyse, & Manyukhina, 2024). This process is influenced by globalization, technology, and changing student needs, thus requiring an adaptive and inclusive approach (Suwarni, 2023). Curriculum development theories not only emphasize the principles of student-oriented education and the need for continuous improvement, but also involve revision and review at the macro level to ensure relevance and effectiveness (Sari, Isnaini, & Mustafiyanti, 2024). Despite the lack of research on these processes, innovative approaches such as project-centered design in higher education aim to adapt education to meet future societal needs through interdisciplinary concepts and diverse pedagogical approaches that foster critical thinking, problem-solving skills, and collaboration (Vijayalakshmi, 2023).

Curriculum development theory is a broad field that involves several disciplines such as education, psychology, and sociology. Its main research includes how to design, implement, and evaluate educational programs to improve teaching effectiveness and students' learning experiences (Almulla, 2020). The most influential theory of curriculum development is the Taylor model, which was developed by educator Ralph Taylor in his book Fundamentals of Curriculum and Instruction. The model is known for its systematic and logical approach and contains the following four basic elements: identifying educational goals, selecting learning experiences, organizing learning experiences, and assessing learning outcomes. Taylor's model emphasizes goal orientation, systematic design, and continuous assessment, providing a scientific method and framework for curriculum development theory (Wu, et al., 2023). These four essential elements are interrelated to form a complete curriculum development theory process to ensure that the curriculum is effective in promoting student learning and development.

Research has found that needs analysis is the first step in curriculum development theory. By researching and analyzing learners' needs, backgrounds, and learning objectives, educators can gain a better understanding of learners' actual needs and background information (Gacs, Goertler, & Spasova, 2020). This includes understanding learners' age, gender, learning experiences, interests, etc., as well as their goals and expectations for taking the program. Through needs analysis, educators can clarify the direction and focus of curriculum development theory to inform subsequent curriculum design and implementation.

On the basis of the needs analysis, educators need to set the overall goal and specific learning objectives of the course. Overall objectives refer to the goals to be achieved by the course as a whole, while specific learning objectives are specific to each learning unit or course module (Martinez, 2022). Clear goal setting can guide course design and implementation, as well as help learners understand course content and expected learning outcomes. Educators can determine the overall goals and specific learning objectives of a course based on the results of a needs analysis and the requirements of subject matter knowledge.

Based on the needs analysis and goal setting, educators can select appropriate course content and organize it appropriately. Selecting suitable course content is the basis for ensuring the coherence and logic of the course, and the scope and depth of the course content should be determined according to the needs and objectives of the learners. At the same time, the learning habits and cognitive characteristics of learners need to be taken into account when organizing the course content so that the content can be better accepted and absorbed by learners (Bragg, Walsh, & Heyeres, 2021).

Based on the course content and learners' characteristics, educators need to design appropriate teaching methods and strategies. Teaching strategies can include different modes of instruction such as lecture, discussion, practice, and other different forms; learning activities designed to help learners actively participate and consolidate what they have learned; and assessment methods used to evaluate the ways and tools used to assess student learning outcomes. Educators can choose appropriate teaching methods and strategies to enhance learners' learning outcomes and learning experiences according to the characteristics of the curriculum and the requirements of the discipline (Wu, & Chen, 2021).

To support curriculum implementation, educators need to develop or select appropriate teaching resources and materials. These resources include teaching materials, teaching aids, multimedia materials, Internet resources, etc. Educators can utilize a rich variety of instructional resources to provide diverse learning experiences that meet the various needs and learning styles of learners (Haagen-Schützenhöfer, & Hopf, 2020). Educators can also develop appropriate instructional tools and support materials to support learner learning based on course content and learner needs.

In the actual teaching and learning activities of the course, educators need to organize and guide students in various teaching and learning activities, such as lectures, discussions, and experiments, based on instructional designs and strategies. Educators need to provide timely instructional feedback and adjustments according to learners' actual situation and learning progress in order to help learners master the course content and achieve the learning objectives (Pak et al., 2020). Finally, by assessing learners' performance and course effectiveness and collecting learners' feedback, educators can understand learners' learning and effectiveness. Assessment methods include test scores, assignment evaluation, and self-assessment. Through assessment and feedback, timely course improvements can be made to improve the effectiveness of teaching and learning (Winstone, Balloo, & Carless, 2022).

To summarize, curriculum development theory is at the heart of education and involves designing, implementing, and evaluating curriculum to enhance learning. It emphasizes adaptability and inclusiveness, is student-centered, and utilizes systematic approaches such as the Taylor model to ensure curriculum effectiveness. Through needs analysis, goal setting, content selection, instructional method design, and resource development, educators are able to create curricula that support student development and improve through ongoing assessment and feedback. The theory of curriculum development aims to develop students' key competencies and adapt to the future needs of society.

Development of Conceptual Framework

A comprehensive pedagogical framework was developed to address issues in the music theory program. The framework incorporates the flipped classroom approach, self-directed and collaborative learning theories, and curriculum development theory to form the Flipped Classroom Module (FCM). Students learn basic music concepts, music analysis, music composition, and music performance skills online, and participate in online discussions and interactive activities to optimize face-to-face classroom time for in-depth discussion and hands-on practice. In addition, the framework encourages students to establish clear learning goals, develop

individualized learning plans, and actively seek out learning resources and effective methods. Through active participation, collaboration with peers, reflection and adaptation of the learning process, development of problem-solving skills, and self-assessment, students are able to learn and improve from each other.

Theoretical Foundations The theoretical foundations of the FCM framework include that the purpose of the Flipped Classroom Model learning model is to disrupt the traditional classroom environment by enabling students to preview and utilize in-class time for interactive activities outside of the classroom. In this way, students can gain a deeper understanding of classroom content and consolidate and apply what they have learned through interactions with peers and the instructor (Khan, 2007). Self-directed learning emphasizes that learners actively participate in the learning process and take responsibility for their own learning. In the FCM framework, students are encouraged to ask questions, pursue areas of learning that interest them, and receive guidance and feedback through interaction and collaboration with the instructor and peers. This type of self-directed learning fosters initiative and self-discipline while increasing the effectiveness of learning (Tough, 1991).

Collaborative learning theory suggests that learning can be facilitated through social interaction and collaboration. In the FCM framework, students are encouraged to work with their peers to solve problems, discuss learning content, and divide up the work within the group to accomplish learning tasks. Through collaborative learning, students can interact and share knowledge with each other, broaden their perspectives, and develop teamwork and communication skills (Gajda, 2004). Curriculum development theory guides the structured development of course content and learning experiences. In the FCM framework, teachers design learning activities based on the principles of this theory to ensure that students can have a comprehensive and structured learning experience in their courses. Through sound curriculum development, students can build on their mastery of foundational knowledge to further expand and apply it, enhancing their learning outcomes (Tyler, 1949).

The FCM framework is a comprehensive system of music education designed to enhance students' overall musical competence by improving musical literacy, skills, and motivation to learn. The learning content of the framework includes basic music concepts, music analysis, music composition, and music performance skills. To promote student interaction and collaboration, the FCM framework utilizes delivery methods such as online discussions, group discussions, and interactive activities. In terms of assessment, the FCM framework comprehensively evaluates students' learning outcomes through three methods, namely performance assessment, portfolio assessment, and examination assessment, to ensure that students are able to develop effectively in both theory and practice (Figure 2).
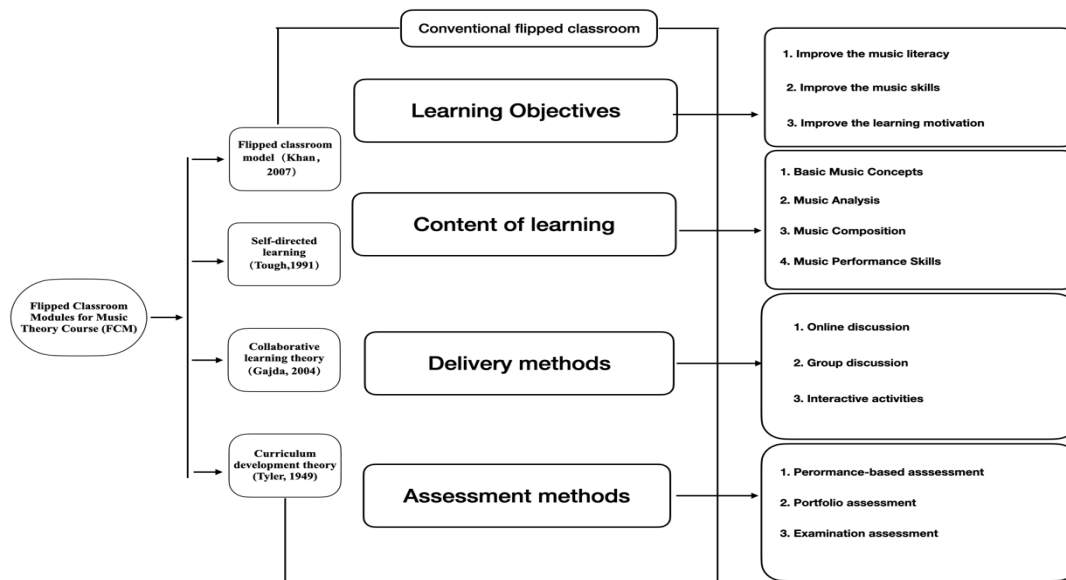

Figure 2: Music Theory Course Conceptual Framework

To summarize, the FCM module enhances the traditional flipped classroom approach by integrating the above theories. Each of the components of learning objectives, content, delivery, and assessment are interrelated and supported by the theories, working together to create an effective learning environment. The FCM framework provides a comprehensive and structured approach to music theory courses designed to increase student engagement and learning outcomes. Through this model, students are able to acquire the necessary foundational knowledge prior to class, enabling them to learn and apply this knowledge more broadly in face-to-face classes, resulting in an integrated approach to music literacy, skills, and motivation to learn.

CONCLUSION

This study aims to propose a conceptual framework for music theory course development by applying the Flipped Classroom Module (FCM) in a flipped classroom environment. In response to the monotony of existing teaching content, the disconnection between practice and theory, outdated educational concepts, and limited learning resources, this study proposes to integrate modern music elements, enrich course content, strengthen practical teaching, update educational concepts, and incorporate self-directed and collaborative learning modes in order to enhance the quality of teaching and learning. Through a literature review and analysis of key variables, the study constructs a conceptual framework that addresses the needs and limitations of music theory teaching and provides a structured teaching strategy for music theory courses in higher education. The practical application of this study points to the improvement of teaching methods, the introduction of diversified teaching resources, and the creation of autonomous and collaborative learning environments, with the aim of stimulating students' interest in learning, increasing their engagement and creativity and ultimately enhancing the effectiveness of teaching and students' comprehensive literacy. Although the study is limited by specific educational settings and student groups, which may affect generalizability, it provides directions for future research, including exploring the effectiveness of the FCM module in different educational contexts, the further development of personalized teaching strategies, and the application of technology in enhancing the interactivity and practicability of music theory teaching.

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