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DEVELOPMENT OF INNOVATIVE BMI MODULE FRAMEWORK FOR SUSTAINABLE IMPLEMENTATION & EVALUATION OF CHINESE MUSIC EDUCATION PROGRAMMES WITH CASE EXEMPLARS

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ABSTRACT

This research outlines the Design and Development Research (DDR) process used to create a blended-mode instruction (BMI) module for music education in Chinese higher education institutions (HEIs). DDR integrates mixed research methods, incorporating qualitative and quantitative data collection and analysis. Stage 1 (Analysis) involves a comprehensive literature review to examine the integration of blended pedagogical practices for pre- and in-service music learners in HEIs, focusing on enhancing learning in STEAM (Social Science, Technology, Entrepreneurship, Arts/music/culture, Mathematics) education. Stage 2 (Design and Development) presents a framework for module development, while Stage 3 (Evaluation) focuses on the creation and validation of monitoring and evaluation tools, including content and construct validation. Cross-Case Analysis (CCA) compares technology-enhanced music and cultural education programmes from China, Malaysia, while Exemplary-Case Analysis (ECA) highlights key attributes from CCA findings. The study concludes with an examination of the implications and significance of the findings, providing recommendations for future research （152words）

Keywords: Module framework, musical education programme, Blended-mode Instruction (BMI), higher education

INTRODUCTION

In recent years, driven by technological advancements and the impact of COVID-19, music education within Chinese higher education has experienced rapid growth. Digital technologies have facilitated the development of project-based music courses, including blended learning, micro-courses, and modular teaching, which are now becoming predominant in Chinese higher music education (Guan et al., 2023; Huang & Zhang, 2021; Li, 2024). However, Chinese higher music education still faces gaps compared to Western standards, particularly in curriculum design, innovative teaching methods, integrating theory with practice, and adopting effective evaluation metrics (Xing, 2023). To address these gaps and enhance curriculum effectiveness, this study explores innovative approaches in music education. Employing the 'Design and Development Research' (DDR) three-step process (analysis, design and development, evaluation a Venn diagram was created to illustrate framework development of BMI modules for Chinese higher music education and conducted research at a normal university in China .

BACKGROUND AND OVERVIEW

Chinese higher music education has traditionally been rooted in a rich cultural heritage, emphasizing the mastery of classical music techniques, historical knowledge, and theoretical foundations. There's a heightened consciousness around maximizing the balance between modern and traditional teaching methodologies that

integrate both the practical skills and the actual music trends themselves (Kislyakova & Liu, 2023; Yang & Welch, 2016). Blended-mode instruction (BMI) has arisen as one of the newest approaches to solve higher music educational problems. Each team does online courses, and it is here, in blended learning mode, that contemporary higher education and music departments are looking for opportunities to meet contemporary curriculum needs. The biggest selling point for blended mode instruction is that it enriches student engagement while improving learning outcomes in more flexible, personalized learning environments. Blended mode instruction gives students the skills they need to work more independently, using the profusion of media and online resources and learning materials that reinforce instruction learned in class (Kim & Kwon, 2022). This dual approach, however, allows a variety of learning styles to be taught while permitting each student to go at his or her own pace and to revisit difficult concepts and techniques when necessary (Kim & Kwon, 2022). Besides enriching students' learning, blended mode instruction also promotes richer interactions and collaborative work between students and teachers, thus making for a more vibrant and nurturing learning community (Buchan & Precey, 2023). Willingness to embrace online platforms lays the foundation for enhanced feedback and assessment, thereby enabling timely intervention and support maximally suited to individual students (Molina-Cristobal et al., 2021). Bringing technology into music education introduces students to modern tools and techniques that develop their digital competency, thus preparing them to enter the world of work in the contemporary music industry (Castro, 2019).

The adoption of bleded mode instruction modes by institutions of higher learning in music, culture, and STEM subjects to facilitate learning outcomes is an innovatory platform meant to forge transdisciplinary studies called for by Ng, et al. (2024) and Lee, et al. (2024). Besides bridging the gap between theory and practice, it also promotes a more engaging, flexible, and holistic educational experience in keeping with the changing demands of the 21st-century learning ecosystem (McGuinness & Fulton, 2019).

RATIONALE AND OBJECTIVES

Problem Statement

Blended-mode instruction (BMI), which integrates online learning with traditional classroom instruction, is increasingly regarded as a viable solution to meet the contemporary needs of music education. The 2017 Horizon Report identified "blended learning design" as a key trend driving the adoption of technology in higher education and it has continued to be a significant topic of discussion in the following five years (Adams Becker et al.). Nevertheless, transitioning to BMI poses several challenges. While online teaching can be effective in certain scenarios, it is clearly inadequate for music performance and ensemble courses. A major issue is the quality of interaction, which is crucial in these courses. Music ensemble classes depend on complex interactions between instructors and students, as well as among the students themselves, which cannot be replicated effectively in a virtual setting (Saito et al.).Moreover, limitations in accessing online tools create challenges for the synchronicity essential to ensemble performance. Online instruction often lacks the subtle cues of timing, rhythm, and harmony that are critical for coordinated performances, leading to disjointed and discordant results (Ding, 2022). Another challenge for online music education is the inability to pick up on subtle listening nuances. In ensemble classes, students must respond in real-time to each other's performance, adjusting theirs accordingly to make their sound blend. This dynamic interaction is obstructed by the limited audio quality of the online classes, making it difficult to respond to one another's nuanced performance of an ensemble (Karkina et al., 2022; Yeo et al., 2023).

In an ever-evolving digital atmosphere, the question of how to fully embed BMI into China's higher music education realms is a vital one, with implications not only for the future of higher music education in China but also strategically weighed for its global future. The complex yet unique challenges and opportunities presented by this integration inspire new dialogues into the developments of resource sharing and adaptation in a blended mode instruction context for higher music education in China.

To advance the incorporation of BMI into China's higher education and provide the baseline for developmental music education, it follows that China should go for an explanation and utilization of its own paradigms in education. The articulation of this scheme will concern such issues as a suitable BMI curriculum for higher music education and the effective stimulation of such.

AIMS AND RESEARCH QUESTIONS

The objective of this study is to validate the application of BMI focusing on music education particularly at Chinese universities through development of framework using Venn diagram. Additionally, the research will examine the challenges and opportunities presented by this framework to facilitate the transition from traditional teaching methods to BMI in practice.

This paper reports part of a bigger scale study in developing the following are research questions identified:

RQ1 What are the operational definitions of Blended-mode instruction (BMI) including practical challenges and best practices encountered during the implementation of BMI module in higher music education settings?

RQ2 How can DDR be utilized to construct a BMI module anchored on suitable framework to advance the development of higher music education that is part of STEAM education?

RQ3   What are the common attributes of STEAM education approaches to learning music/cultural programmes at HEIs?

METHODOLOGY

Research Design for Data Collection

Qualitative research design was implemented by integrating multiple data collection and analysis methods, including literature review, interviews, and case studies. The literature review explored the integration of music and traditional culture education programs (covering both in-service and pre-service education stages) in higher education institutions (HEIs) around the world. Interviews were conducted to collect relevant information from university music educators.

Sample Selection and Data Analysis

A qualitative case study method was employed to explore the implementation of Blended-mode instruction (BMI) in STEAM education within selected institutions in China and Malaysia. For the first time, "cross-case analysis" (CCA) was utilized to compare the common attributes of BMI implementation across these institutions.CCA was employed to examine the attributes of the case study projects. A mixed strategy combining "cross-case" techniques was adopted, integrating "case-oriented" and "variable-oriented" approaches (Miles & Huberman, 1994, as cited in Ng, 2012). Yin (1984) advocated the use of the replication strategy as the implementation method for the "case-oriented" strategy.

Exemplary-Case Analysis (ECA) is also illustrated on selected programmes from findings of CCA. 'Exemplary-Case Analysis' (ECA) is reported based on the findings from research that was conducted in the Music College of a Normal University in the central-southern region of China. Participants were selected using the random sampling technique described in Agustina (2021). The study involved 300 undergraduate students from different grades in the Music College of the university. All 300 participants engaged in and completed the courses within the GXZ-BMI module framework.

LITERATURE RESEARCH

This section analyzes data in response to the following Research Questions (RQ):

RQ1 What are the operational definitions of Blended-mode instruction (BMI) including practical challenges and best practices encountered during the implementation of BMI module in higher music education settings?

The concept of Blended-mode instruction (BMI) originated in the late 1990s. Over the past decade, two primary definitions of BMI have emerged: (1) a system that combines face-to-face teaching with computer-assisted instruction (Bonk & Graham, 2005), and (2) a deliberate integration of face-to-face and online learning experiences (Alammary et al., 2014). Both definitions share the core idea of combining face-to-face and online teaching. In this study, the authors adopt Hrastinski's definition of BMI, which emphasizes the combination of face-to-face and online instruction (Hrastinski, 2019).

Figure 1 illustrates the spectrum of BMI teaching methods at different levels. It ranges from traditional face-to-face instruction (IP), where all activities are conducted in person with no online elements, to fully online instruction (OL), where all teaching is conducted online with no face-to-face interaction. BMI exists between these two extremes: enhanced face-to-face instruction, which primarily uses face-to-face teaching but includes some supplementary online content; blended mode instruction, which combines online and face-to-face teaching equally; and enhanced online instruction, where the core teaching is online but face-to-face interaction is optional. These three different levels of BMI all emphasize the reliance on online content and the
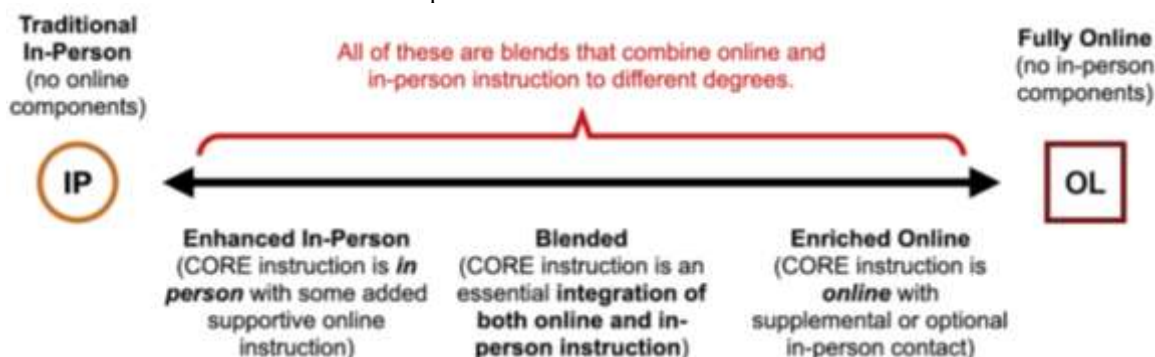

Figure 1. Adapted from (Graham et al., 2024)

State of the Art of BMI in Asia Higher Education

In Asia, the implementation of BMI is rapidly advancing, especially in countries like China, Japan, and South Korea. However, the digital divide remains a significant challenge in some regions, with unstable internet access and limited digital devices hindering effective BMI implementation. Despite these challenges, governments are vigorously promoting the integration of technology into education. For example, the modernisation of educational reforms presented in China emphasises the key role of technological advancements such as that of BMI to enhance quality and accessibility (Zhu, 2019). Shen et al. experiences, found that at the initial stage of BMI adoption universities found that although the general course design was largely unchanged; but new model affected different groups differently. The quality of BMI still has a long way to go, although learning resources are available in large quantities (Shen et al., 2023).

Gaol and Hutagalung, in their 2020 study on Southeast Asia, found that BMI is considered the key to the creation of educational platforms targeting the goals of inclusive personalized education for a wide variety of diverse learners (Gaol & Hutagalung, 2020). Thai students have also benefited from BMI in their language skills and learning independence, which manifested in the positive effects of this technique when mentioned (Banditvilai, 2016). Furthermore, in Singapore, Harris and Fu (2018) found that teachers utilized online resources even in cultures traditionally relying heavily on teachers, which significantly increased the level of students' engagement and comprehension. It is evident that the direction in which the world of education is taking is that of BMI, and it has become very common to fuse online and face-to-face approaches into one harmonious system (Harris & Fu, 2018). However, in Indonesia, research attention was diverted to the institutional readiness and commitment of BMI in higher education. The effective implementation of BMI entails that adequate resources are required, and technology is not left behind, in addition, efforts should be initiated to train the students on this blended mode instruction(Sari et al., 2016).

In more advanced Asian countries, such as South Korea and Japan, the use of BMI is also high, and it is guided by government support and the promotion of technologies in education. Studies prove that BMI has a fundamental role in the improvement of student satisfaction by giving them the flexibility to attend online classes and take face-to-face instruction (Anaraki, 2018).

The story of BMI in the Asia region is complicated by phenomena ranking from the digital divide to the varying levels of technology infrastructure; however, it is encouraging to see the commitment shown by the governments and educational institutions towards the issue of using technology in education, which in turn is facilitating the adoption of the various digital learning technologies. In accomplishing this objective and innovating the implementation of blended mode instruction, it is possible to ensure that BMI will be of maximum benefit and the quality and access of education will be better balanced across the region.

Navigating the Challenges and Opportunities of Blended Mode Instruction in Higher Education

Benefits associated with Blended-mode instruction (BMI) apart, it goes without saying that there are still some conspicuous challenges. A cardinal problem among others is the fact that digital devices and connectivity may differ across students because of disparities around technology (Bayyat et al., 2021; Rasheed et al., 2020). Getting students interested in online learning content may be sometimes hard in case of disciplines based on practice, music seems to be a good example of that. Not only is it hard to replicate personal touch and instant feedback of live performances, but it is also a practical difficulty (Campo et al., 2023). Research suggested that bridging the divide between students' access to technology presents a significant hurdle in blended Mode Instruction societies. The inequity in availability of reliable internet and tools required for learning may inhibit students' participation and success (Taylor & Newton, 2013). This concern is heightened in the context of remote areas that have poor technological infrastructure, where students are faced with more serious issues (Muhria & Supriatna & Nurfirdaus, 2023). Sustaining engagement and motivation is paramount, particularly in disciplines like music where progress involves a lot of rehearsal with a metronome or a piano. One of the learning methods that expect the maximum interaction and instant feedback is face-to-face learning. Novel teaching techniques will be the powerful motive for BMI that should be used to perpetually inspire students and maintain their interest (Monteiro & Morrison, 2014). The level of authenticity and the degree of synchronization of online performances as compared to live ones is another factor associated with the quality organizational processes (Okaz, 2015).

Effective use of BMI also mandates teacher-expert trainings as a priority. Teachers should include digital tools in their sessions and fashion activities that fuse the aspects of online and offline learning in an efficient manner. However, controlling two models of instruction means that teachers are responsible for sending handouts to both platforms and ensuring students continue interacting with their classmates. Time limitations and lack of resources affect teachers largely when they plan BMI courses, and therefore help from institutions and the chances to enhance their own professional development are highly required (Ma'arop & Embi, 2016). Technology resistance in faculty is also possible, as being unfamiliar is a big obstacle, in addition to lacking the necessary skills for teaching and managing. To overcome these blocks, digital pedagogical approaches should focus on the continuous development process and institutional support to develop self-assurance and competence (Bruggeman et al., 2021). Despite the great benefits, successful application of BMI lies with striving to resolve issues such as technology access, student engagement, performance assessment, and teacher training. Institutions must highly implement

proper support systems with the aim of ensuring that everybody, both educators and students, can manage and benefit from BMI settings.

DATA ANALYSIS AND FINDINGS

This section analyzes data in response to the following Research Questions (RQs):

RQ2 How can DDR be utilized to construct a BMI module anchored on suitable framework to advance the development of higher music education that is part of STEAM education?

Constructing the GXZ-BMI framework using Design and Development of Research
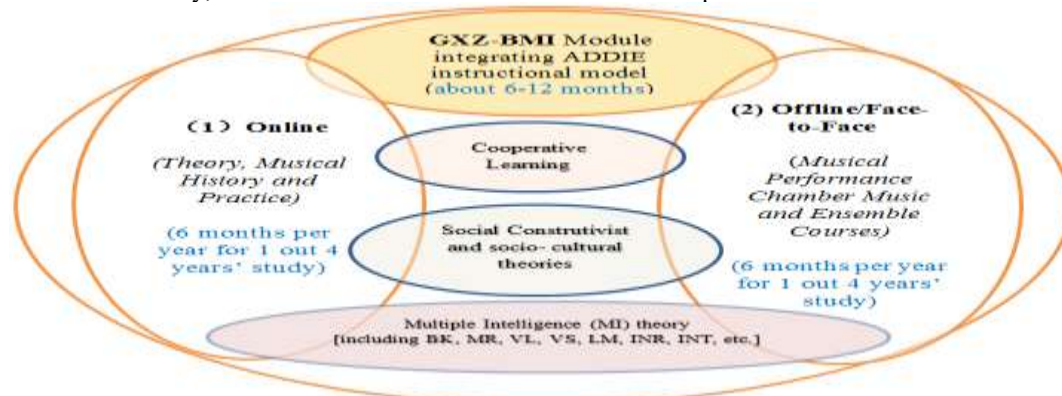
The State of Design and Development Research (DDR) in Higher Education

Developmental Design Research (DDR) has developed into an important method in education research, especially for higher education. The first component of DDR is the systematic design, development, and evaluation of the educational interventions, which usually consists of three main phases: Phase 1 (Analysis), Phase 2 (Design and Development), and Phase 3 (Evaluation) (J. Ellis & Levy, 2010). This method is systematic and high-strung; it combines the theory and practical experience in addressing the issues of education. The constructivist theory, which states that knowledge is actively constructed by interaction and engagement in the real professional environment, is the basis of DDR as per (Narayan et al., 2013).

Higher education is particularly favor of DDR to develop and refine digital media tools, curricula, teaching methods, and assessment techniques (McKenney, 2018). The CILSS at the University of Maryland has leveraged the DDR as a communication strategy for continuously building and improving its courses, learning frameworks, and the support systems (Ford et al., 2017). DDR is most beneficial as it provides a learner-centered approach because of its relevance to practical applications by solving real-world problems and identifying answers that can be directly used.

Most essentially, it enables the fusion of theory and practice, making it sure that the innovations in these areas are evidenced-based and approached with an emphasis on useful applications (Edelson, 2002)DDR shows a very high effectiveness in broadening the digital learning tools and environments. For example, the EMBED project introduced blended learning improvement practices in digital stress techniques, through course design, policy making, staff support, and leadership at educational settings (Goeman et al., 2019). DDR is equally employed to create bridge frameworks that incorporate sustainability into higher education curricula, which can eventually realize the wider societal aims (Tassone et al., 2017). By virtue of its dynamic, collaborative, and theory-based approach favoring skilled technology, DDR performs critical roles in facilitating the establishment of both innovative and pedagogically sound ones, which culminates into improved learning in one higher institution after another.

In contrast to DDR, its complexity is represented by its diverse nature and time consumption, whereby a practical solution is attained in balancing methodological rigor and practical relevance. Nevertheless, the recursive and interactivity nature of DDR requires organizational structures with enough time and finances to keep pace, which is not obtainable by some (Reeves, 2015). Furthermore, the design process of DDR is based on a collaborative model working with an array of actors such as educators, researchers, and students. Such peacekeeping makes the interventions directed to the elements of the live system to be more relevant and effective (Kennedy-Clark, 2019). As indicated by Bronkhorst and Kleijn (2016), the repetitive process of proposing, testing, and evaluating is one of the features of DDR, which allows adaptation and improvement to the ever-changing conditions of higher education (Bronkhorst & Kleijn, 2016). The next Figure 2 presents the Theoretical and Methodological Framework of this study, from which the GXZ-BMI model was developed.

Figure 2. Venn diagrams produced as framework for GXZ-BMI using Design and Development Research (DDR)

In the practice of higher music education in China, Innovative Teaching Design is the boon for conferred and nailed in mankind interest. The GXZ-BMI; includes a comprehensive interest in and investigation of teaching theories and methods as presented in Table 2. Developed using the ADDIE instructional design model and further refined through Design and Development Research (DDR), this module provides a solid scaffolding for BMI, both online and offline.

ADDIE is a model that includes Analysis, Design, Development, Implementation and Evaluation just the formal methodology for your base instructional design. In higher education, ADDIE has played a monumental role, being used in practice to create the teaching-learning framework (Peterson, 2003). On the other hand, in higher music education, ADDIE identifies particular student needs such as a lack of knowledge about music theory or deficits of performance skills and then customizes instructional interventions designed to remedy these holes (Liu, 2023). For instance, Safian et al. Because of its reliance on systematic instruction, nevertheless, ADDIE may also incorporate new instructional technologies such as internet-based systems for collaborative music projects in order to boost student engagement (Safian et al., 2024). The GXZ-BMI module is composed of the following elements: "Analysis" provides insight into learning needs and objectives, along with the music education context; under "Design," specific choices are made regarding strategies, learning activities, and assessment methods; "Development" includes designing instructional materials/resources; under "Implementation," the steps planned during analysis are carried out in both online (e.g., remote teaching) and offline environments; lastly, within "Evaluation," continuous diagnostic tests are employed to assess whether or not strategy execution is effective -- if it isn't only certain components can be modified rather than scrapping everything entirely. While ADDIE is useful for informing the design of instructional strategies, DDR offers a process of repeated testing and refinement through cycles of designing, checking efficacy (through empirical evidence such as assessment results), and redesigning to ensure effectiveness. Adaptive learning relies on data-driven techniques for empirical validation and iteratively incorporates feedback from students and educators to improve instructional design. GXZ-BMI module includes two main learning styles online and offline/ face to face. online courses are great for learning theory, music history, and practice, which are all key parts of basic music education knowledge and can even fit the needs of a busy person looking to learn more flexibly. The programme runs for a year of four with a duration of six months every year which allows continuous engagement and flexibility; it makes use of multiple online tools and platforms to provide content, facilitate dialogue, and assess learning. On the other hand, Offline/face-to-face learning is centred around music performance and chamber music and ensemble courses.

These correlate to experiential learning, networking between individuals working together as they will do on their real life journeys and instant feedbacks from fellow musicians or tutors. The schedule follows a similar structure to ensure balanced 'Hands-On' Skills, with an emphasis on experiential learning, peer-to-peer collaboration and instructor feedback.

The centre of the module, as shown in the Venn diagram Leach & Scott 2003) is rooted within social constructivism and sociocultural theory. Learners-centric constructivist approaches depict learning as a process in which students actively build new knowledge based on their experiences (Cooperstein & Kocevar-Weidinger, 2004). The sociocultural theory emphasises the social interaction and cultural context of learning, in which co-construction of understanding occurs (Panhwar et al., 2016). In music education, it is important for the growth of a music student that we create learning environments which foster collaborative work, peer interaction and culturally relevant pedagogy through engagement with others. Mental Body Collaborative Learning Definition – Students can work together to achieve common goals, improving the learning experience by collaborating and leveraging shared knowledge/skills. The nature of music educators helps immensely here as peer interaction creates a camaraderie that reaches the spirit, which works best with ensemble and general group performances. The theory behind the instructional design is of Multiple Intelligences (MI): an approach to human intelligence that suggests there are different ways of processing information and therefore different forms of intelligences: bodily-kinesthetic, musical-rhythmic, linguistic-verbal, visual-spatial, logical-mathematical, intrapersonal and interpersonal intelligences. This ensures that in instructional design, several types of learning styles will be considered so students can engage with the same materials through their varied strengths and they will engaged and learn better by using this approach. A Balanced BMI Environment The holistic instructional module combines several education theories and practices to establish a balanced BMI environment. The blend of online and offline content confirms that students can gain a complete range of educational experiences, marrying theory with application (Brien 2020).

Overall, the consistent framework for the development and implementation of this module can be ensured using a combination of the ADDIE model with DDR providing an access in a creative and flexible manner. The online part makes it possible for college students to access supplies at their own convenience, striking a balance in education and creating opportunities. Learning by doing is essential in music education, practice assists them hone in on their skills. Collaborative learning promotes camaraderie and team teaching amongst students. The implementation of Multiple Intelligences theory caters towards various learning styles, thus increasing

engagement and outcomes. DDR ensures evidence-based practices translated into more effective and impactful learning experiences.

GXZ-BMI module successfully merges online and offline capacities of teaching supported by sound instructional theory and evidence DDR guarantees the theoretical soundness of the module and makes it a basis for further prospective research to obtain an improved module . This design is specifically intended for higher music education and provides an interdisciplinary, flexible, and engaging learning context for students. The GXZ-BMI module offers a solid foundation for evolving music education by utilizing diverse pedagogical approaches and evidence-based learning theories.

RQ3 What are the common attributes of STEAM education approaches to learning music/cultural programmes at HEIs?

Essential attributes of STEAM education approaches to learning music/cultural programmes

This paper explores the characteristics of interdisciplinary music/culture course learning methods to investigate the implementation of BMI in selected higher education institutions (HEIs) music/culture education programs, involving co-authors from China and Malaysia, with the aim of promoting STEAM education.To conduct a comprehensive and scientific analysis of BMI integration in higher education institutions of the two Southeast Asian countries, various requirements and aspects must be considered. These carefully planned innovative efforts have also been evaluated by experts to ensure the research maintains high-quality standards and is effective in the application of Blended-mode instruction (BMI).

Table 1 summarizes the cross-case analysis of music and arts/culture education programs.

Table 1. Cross-case analysis of outputs of values-based sustainable education (VaBSE)

No.	Model/Brand Project (abbreviation)	STEAM education Assessment methods for learning outcomes	SDGs
(A)	Music education programmes integrating STEAM education approaches to learning output in support of SDGs		
1	Blended-mode Instruction'	Combine music education with other subjects, such as language and technology.	No. 4, 11 and 17
2.	Promoting the cultivation of higher-order thinking skills	Combine music education with other subjects, such as musicology, language, and technology.	No. 4, 11 and 17
(B)	Cultural education programmes integrating STEAM education approaches to learning output supporting SDGs		
1	Malaysia Summer Music Study Camp (**MSMSC**)	Combining music, art, cultural exchange, and technology, etc.	No. 1, 2, 3, 4, 11, 16, 17

Elaboration on Exemplary GXZ-BMI

The first author of this paper teaches at a normal university in Central South China and implemented the GXZ-BMI framework during a semester-long course. The case study was conducted in the university's music department, which has 540 students and 32 teachers (excluding administrative staff and leaders). The author developed the GXZ-BMI framework based on the music department's curriculum schedule, which was approved in a faculty meeting and led to a pilot study.

Using the GXZ-BMI framework, courses were divided into a BMI combining face-to-face and online instruction, as detailed in Curriculum Table 1. This syllabus covers a semester-long program. Excluding elective and non-music-related courses, there are 16 required courses totaling 32 hours. Some courses are divided into theoretical and practical hours, indicated as (16/16 or 16 hours theory and 16 hours practical, 32/0 or 32 hours theory and no practical, 0/32 or no theory but 32 hours practical) for theory/practice breakdown.

Table 2: Curriculum planning using GXZ-BMI framework to prepare Blended-mode Instruction (BMI) in music education

Course name	Forms of study	Credits	Total duration	Theory hours	Practical Hours	Whether to use BMI
Chinese Folk Music	compulsory course	1	32	32	N/A	Yes, using the platforms such as rainclassroom platform, blibliAPP, tencent conference, tiktok

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Analysis of Music Form and Works	compulsory course	2	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Chinese Music History	compulsory course	2	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Western Music History	compulsory course	2	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Basics of Harmony	compulsory course	2	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Polyphony and Orchestration	compulsory course	2	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Music Pedagogy	compulsory course	2	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Music Teaching Design	compulsory course	2	32	16	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Basics of Piano	compulsory course	1	16	N/A	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Basics of Vocal	compulsory course	1	16	N/A	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Basics of Instrumental Music	compulsory course	1	16	N/A	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Chorus Conducting	compulsory course	1	32	16	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Piano Accompaniment	compulsory course	1	32	16	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Basics of Music Theory	compulsory course	1	32	32	N/A	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Sight-singing and Ear-Training	compulsory course	1	32	16	16	**Yes**, using the platforms such as rainclassroom platform , blibliAPP , tencent conference , tiktok
Art Practice Group	compulsory course	1	16	N/A	16	**Yes**, using the platforms such as rainclassroom

						platform , blibliAPP , tencent conference , tiktok

DISCUSSIONS

Music theory, Chinese/Western/Ethnic music history, and harmony and form courses were conducted on the Chinese-developed online platform "Rain Classroom." Choir conducting, piano, other instrumental courses, vocal courses, ensemble, and chamber music courses were held offline. These courses also integrated video lectures, interactive exercises, virtual discussions, face-to-face tutoring, and group activities.

This digital content enabled students to learn theory at their own pace, repeat difficult topics as required and discuss meaningfully with peers and teachers. This kind of flexibility really played in favor of students with different learning types and schedules, allowing them the chance to personalize their learning according to their own needs.

The online platform was supplemented with on-campus, face-to-face tutoring and group activities. The physical sessions were instrumental in reinforcing the theoretical concepts through interaction with educators and other students. The students were engaged in both collaborative work and real-time problem-solving activities that helped them solidify their understanding of the content. Author states that both online and face-to-face learning modes made him feel like his educational experience was complete by addressing cognitive and social facets of learning.

BMI — After one semester of the pilot study, teachers noticed positive results on BMI. Statistical correlation revealed improvements in a variety of facets, including notable increases in music theory exam scores and greater enthusiasm for performance and singing. Feedback from the students was also extremely positive. Students mentioned greater engagement, motivation and commented on the flexibility and diversity of the learning materials. The online part was enticing but still interactive while the one-on-one attention during in-person classes was mutually beneficial. AbstractThis case study illustrates how the GXZ-BMI framework can be implemented in a music theory course which lacks adequate preparation for students from their previous years of studying.

CONCLUSIONS

Summary, Implications and Significance

This article illustrates on the development of a framework for the module prepared as part of the music education programme in Chinese higher learning institutions (HEIs) with case exemplars reported through the Design and Development Research (DDR) processes. This study employs a mixed-methods approach, integrating qualitative and quantitative data collection and analysis methods. In the first phase of the DDR process (the "analysis phase"), through rigorous literature review, the integration of blended-mode Instruction practices involving pre-service and in-service music learners was explored in the selected sample of higher education institutions (HEIs) in China. To enhance learning outcomes in "science, technology, entrepreneurship, arts/music/culture, and mathematics" (STEAM) education, this study adopts "Blended-mode instruction" (BMI) as an alternative term to manage technology-enhanced music and cultural projects through interdisciplinary approaches. A framework is then developed and illustrated as guide for the second 'Design and Development' Stage of DDR. During the third 'Evaluation' Stage of DDR to implement and evaluate the module, monitoring/evaluation tools are developed and validated.

This stage involved both 'content' validation by experts as well as 'construct' validation of survey questionnaires developed to gauge feedback of learners on their perceptions towards effectiveness of the module developed.

Cross-Case Analysis (CCA) was conducted to examine the attributes of selected technology-enhanced music/cultural educational programmes from China, Malaysia involving emerging technologies. Exemplary-Case Analysis (ECA) was also illustrated on selected programmes from findings of CCA. The implications and significance of studies are reported with suggested further studies to be conducted.

LIMITATIONS, LESSONS LEARNT AND FUTURE DIRECTIONS

The main constraints of this study are technological, as they will not present high-speed internet access and advanced digital tools in less developed areas like in some underdeveloped countries. Such inconsistency does not support proper performing of Blended-mode instruction (BMI) strategies in Chinese music education programs. Moreover, lack of relatively common use of any advanced digital technology constrains BMI in reaching students situated in geographically remote places, while the burden posed by adopting BMI additionally minimizes its applicability for these types of places. This is a specific difficulty, because the quality of the online platforms used for traditional music instruction varies widely; many do not meet essential auditory and interactive demands for effective instruction, such as high-fidelity sound transmission and low-latency feedback. The nature

of music education itself provides significant challenges to implementation of blended mode Instruction (defined here) relative to traditional face-to-face music instruction. That immediate face-to-face communication, the heart of music education, is lost here. The process of change is further exacerbated by the deep-seatedness of traditional music teaching methods that make it hard for both teachers as well as students to adapt. Also, in theory that flexibility of BMI allows students to individually study what they are passionate about but almost always leads to waning interest and motivation by the student especially in performance courses. By sheer nature of an online situation, absence of immediate oversight can put down student participation and success excitement, exacerbating these challenges. If nothing else, evaluating student performance under a BMI paradigm is not trivial. Online replicability of traditional methods of music skill assessment (particularly group settings such as ensemble performances), creates concerns for the reliability and validity of these assessments in assessing student outcomes. Such restrictions highlight the necessity of more investigation and progression on technological framework, educational methods, and evaluative systems to optimize the advantages of BMI within a music educational context.

This study indicates that curriculum design need to be flexible and adaptable, while also noting the pressing necessity of holistic teacher training for digital music pedagogies. The difficulties faced during the implementation of BMI highlight the need for a creative development of pedagogic models that seek to create more synoptic connections between on-line and off-line learning – at least in practice-oriented disciplines such as music, which relies so much on interaction and performance. The analysis also highlights the advantages of student-centered learning in high schools, and that personalized education experiences can impart higher levels of engagement and excitement among students if backed by strong tracking systems. Moving forward, though, simply addressing and beefing up tech infra in developing parts of the world is key for equitable access to high-quality digital instrumentation.

There are several recommendations for the further development of BMI in music education throughout Chinese higher education. Ensuring access for all students has to be an integral component of blended mode Instruction policy, as the fact that human interactions are integral to blended mode Instruction makes those effective systems reliant on readily available technological infrastructure. That means investing in solutions tailored to the unique acoustic and interactive requirements of music education — ones supporting ultra-low latency and high-fidelity audio. In performance-based courses, further innovative instructional designs and curricula are needed to better incorporate online and offline learning. Further programs must be developed to train teachers with both how to design and implement BMI using e-learning tools (technical) and effective blended pedagogical techniques to engage students in a blended setting. Finally, a third key area is the creation of valid and practical assessment tools that capture student performance within the BMI particularly for group performances or ensembles where subtleties in expression are critical. Finally, we need to diversify student support networks to ensure that students are engaged and motivated. This involves developing dynamic online communities, peer networks, and timely feedback systems to help students overcome the challenges of blended mode Instruction while staying motivated to achieve their academic success. Taking the initiative to improve these will help BMI become an even more transformative force in music education, while also ensuring that it represents a progressive and sustainable solution for students and teachers today.

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