The Survey on Application of Multimedia for Teaching Music Theory at Universities in Dalian Liaoning Province

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Abstracts

Multimedia demonstration teaching is a highly effective teaching method that harnesses the power of multimedia technology to display experiments, phenomena, processes, or skills that may be difficult to observe or perform in real-life settings. It is also important in the education and music. The objectives of this research were (1) To investigate Multimedia Music Teaching. (2) To analyze Multimedia Music Teaching in Colleges and Universities in Dalian, Liaoning Province. (3) To find out the value of Multimedia Music Teaching in Colleges and Universities in Dalian, Liaoning Province. The research methodology was mixed method. The qualitative conducted by interview key informants and the quantitative research conducted by questionnaire survey which had the 176 music students and teacher as the sample.

The results of this research were: The Current Status of Multimedia Application in Teaching Music Theory Based on the analysis of questionnaire and interview data, it is evident that multimedia music teaching has gained significant traction in Dalian colleges and universities. The utilization of various multimedia materials, including audio, video, text, images, animation, and interactive elements, is observed among both music teachers and students. The purposes of employing these materials are diverse, ranging from introducing musical concepts to enhancing motivation and engagement. Online platforms and mobile devices emerge as prominent tools for accessing multimedia content.

Keywords: The Survey on Application; Multimedia; Teaching Music Theory; Universities in Dalian Liaoning Province

Introduction

Music is an important form of art and culture that enriches people's lives and promotes social development. Music education plays a crucial role in cultivating musical talents, spreading musical culture, and fostering music innovation. To enhance the effectiveness, efficiency, and attractiveness of music teaching and learning, multimedia teaching has emerged as a new and smart approach that utilizes various media forms, such as audio, video, images, and animations.

Dalian, a significant port and business city in Liaoning Province, China, is home to numerous colleges and music schools offering diverse music education programs. These institutions train music talents for different fields, including performance, composition, education, research, and management. Moreover, music education in Dalian colleges and universities contributes to the dissemination of music culture and stimulates music innovation, adding to the cultural diversity and vitality of the city. However, music education in Dalian faces challenges such as limited resources, uniform teaching methods, varying teaching quality, and low student motivation. To address these issues, music multimedia teaching presents a

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promising solution. By integrating multimedia elements into music instruction, this innovative teaching method has the potential to overcome the identified challenges and elevate the value of music education in Dalian. Drawing from previous research in the field, studies have emphasized the significance of music as an art form that positively impacts individuals and societies. They have also recognized the multifaceted goals of music education, including talent cultivation, cultural dissemination, and creativity promotion. Furthermore, literature on multimedia teaching has demonstrated the advantages of using diverse media forms to enhance learning experiences, improve comprehension, and stimulate engagement and creativity (North & Hargreaves, 2008).

Given the specific context of Dalian, researchers have acknowledged the city's role as a prominent hub for music education, with colleges and universities contributing to talent development and music culture. However, challenges persist, necessitating a closer examination of the potential benefits and drawbacks of music multimedia teaching in this particular setting. Against this backdrop, the research aims to conduct a value analysis of music multimedia teaching in Dalian's colleges and universities. It seeks to assess the current state of music multimedia teaching, explore its advantages and shortcomings, and examine its impact on students' music literacy, aesthetic ability, and creativity. Additionally, the study aims to identify the difficulties and challenges faced during the implementation of multimedia music teaching and propose effective solutions. By examining the experiences of Dalian's universities, the research intends to identify areas for improvement and develop a more scientific, reasonable, and effective music multimedia teaching mode. Moreover, the research will build upon the existing literature to establish a solid theoretical framework for the study. Previous studies have highlighted the importance of music in cognitive development, emotional expression, cultural understanding, and social cohesion. They have emphasized the multifaceted goals of music education, including talent cultivation, cultural dissemination, and creativity promotion. Additionally, scholars have recognized the advantages of multimedia teaching in enhancing learning experiences, improving comprehension, and stimulating engagement and creativity (Li et. al., 2019).

Literature Reviews

Multimedia demonstration teaching

Multimedia demonstration teaching is a highly effective teaching method that harnesses the power of multimedia technology to display experiments, phenomena, processes, or skills that may be difficult to observe or perform in real-life settings. It serves the purpose of explaining relevant principles, concepts, or methods to learners. This approach is particularly valuable when live demonstrations are impractical, dangerous, costly, or time-consuming. The key characteristics of multimedia demonstration teaching include:

Utilization of multimedia technology: Multimedia demonstration teaching utilizes multimedia technology to create realistic or simulated demonstrations that are visually clear, vivid, and interactive. These demonstrations capture learners' attention and interest, creating an engaging learning experience.

Active involvement of learners: Learners actively participate in observing, analyzing, predicting, and evaluating the demonstrations. This approach encourages learners to apply their existing knowledge, skills, and attitudes to new situations, fostering deeper understanding and comprehension (Fang, 2022 : 368-375).

Immediate feedback and guidance: Throughout the demonstration process, learners receive immediate feedback, guidance, and scaffolding from the teacher or their peers. This feedback aids in the construction of new knowledge and understanding through cognitive and affective engagement.

Integration of multiple disciplines and perspectives: Multimedia demonstration teaching integrates multiple disciplines and perspectives into the demonstrations, exposing learners to different viewpoints, values, and cultures. This integration enhances learners' intercultural awareness and communication competence.

The theoretical foundation of multimedia demonstration teaching draws from several learning theories and principles, including:

Cognitive theory of multimedia learning: This theory posits that learners have separate channels for processing verbal and visual information. Multimedia facilitates learning by reducing cognitive load and increasing cognitive engagement, as learners can process information through multiple modalities simultaneously.

Constructivist learning theory: Emphasizing the active role of learners, this theory suggests that learners construct their own knowledge and meaning through engagement with the learning environment and social interaction with others. Multimedia demonstration teaching provides opportunities for learners to actively engage with the content and construct their understanding.

Motivational theory: This theory proposes that learners' motivation is influenced by factors such as interest, relevance, challenge, feedback, autonomy, and social support. Multimedia, with its interactive and visually appealing nature, has the potential to enhance learners' motivation by incorporating these motivating factors.

By leveraging these theoretical foundations, multimedia demonstration teaching offers a powerful tool for enhancing learning outcomes. It enables learners to visualize and understand complex concepts, engage in active learning, and receive immediate feedback and guidance, leading to a deeper comprehension of the subject matter (Levitin, 2006).

Research Objectives

1. To investigate Multimedia Music Teaching
2. To analyze Multimedia Music Teaching in Colleges and Universities in Dalian, Liaoning Province
3. To find out the value of Multimedia Music Teaching in Colleges and Universities in Dalian, Liaoning Province

Research Methodology

The research methodology employed in this study is a mixed research approach, combining both qualitative and quantitative methods. The qualitative research component involves conducting a literature review and performing case studies, while the quantitative research utilizes questionnaire surveys. These methods have been selected to ensure a comprehensive understanding of music multimedia teaching in Dalian's colleges and universities and facilitate the collection and analysis of relevant data. The sample was stratified by role (music teacher or music student) and institution. The questionnaire was distributed to a random sample of 200 music teachers and students from three colleges and universities in Dalian (Dalian University, Dalian Normal University, and Dalian Arts College). The sample

was stratified by role (music teacher or music student) and institution. The questionnaire was available online for two weeks, during which reminders were sent to the participants via email. A total of 176 valid responses were received, resulting in a response rate of 88%. The questionnaire data were downloaded from the web-based platform and imported into a spreadsheet software for further processing.

Research Conceptual Framework

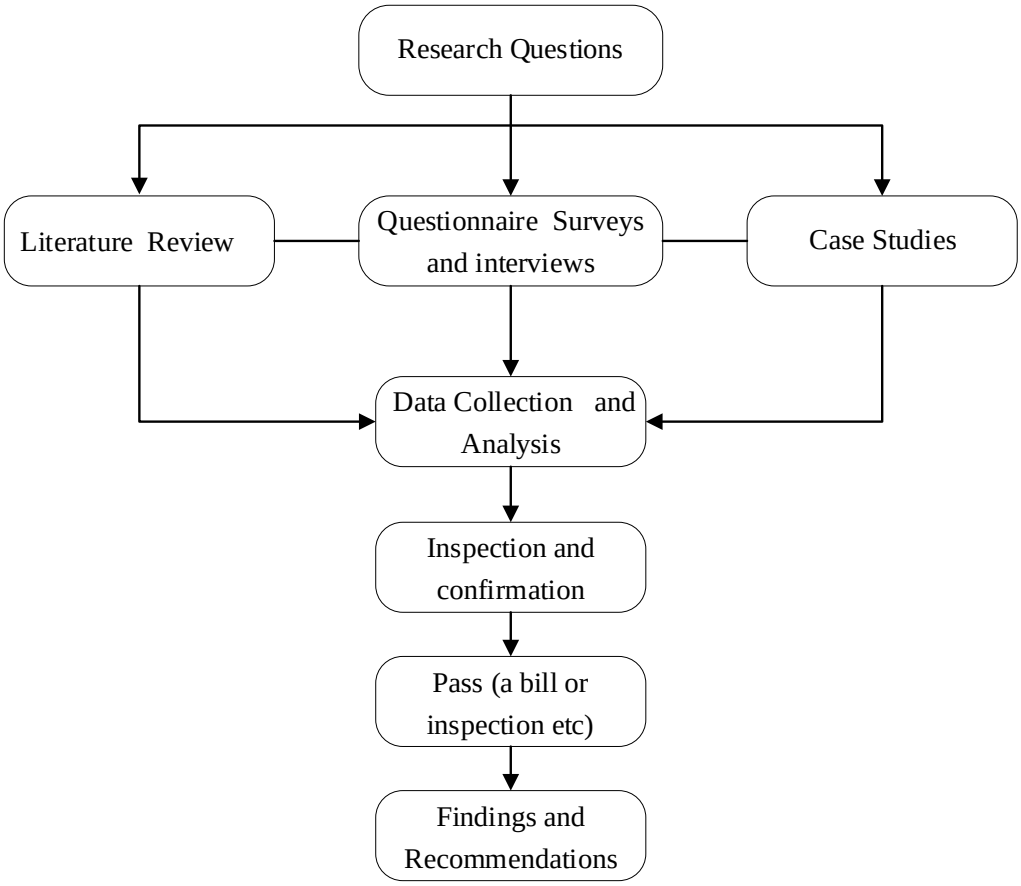

Figure 1 Conceptual Framework

Research Findings

Inferential statistics of questionnaire data

In addition to descriptive statistics, inferential statistics were applied to analyze the questionnaire data, allowing for deeper insights and understanding of the relationships and trends within the responses. Inferential statistics were used to draw conclusions beyond the sample and make inferences about the larger population of music teachers and students in Dalian colleges and universities.

The questionnaire data were subjected to chi-square tests and correlation analyses to examine potential associations between different variables. Specifically, the chi-square tests were used to assess the relationships between categorical variables, such as university affiliation (Question 1) and role (Question 2) of the respondents with their main purpose of using multimedia materials (Question 3) and the types of multimedia materials they use (Question 4). The correlation analyses were performed to explore the potential relationships between the format of accessing multimedia materials (Question 5) and the effectiveness and impact of multimedia materials on learning outcomes, motivation, interest, and satisfaction (Questions 8).

The results of these inferential statistical analyses provided valuable insights into the patterns and trends within the data. For instance, the chi-square tests revealed whether there were significant differences in the purposes and types of multimedia materials used by music teachers and students from different universities. The correlation analyses helped identify potential associations between the format of accessing multimedia materials and the perceived effectiveness and impact on learning outcomes and satisfaction.

The inferential statistical analysis allowed us to make evidence-based interpretations and draw conclusions about the relationships and trends within the data. However, it is essential to acknowledge that inferential statistics have their limitations, and any causal relationships or generalizations beyond the selected population should be made with caution.

In conclusion, the inferential statistics complemented the descriptive statistics in this study, providing a more comprehensive understanding of the value and effectiveness of music multimedia teaching in Dalian colleges and universities. The combination of both descriptive and inferential analyses enriched the research findings and contributed to a more robust and informed discussion of the research objectives and research questions.

Thematic analysis of interview data

The interview data were analyzed using thematic analysis. Thematic analysis involved identifying recurring themes and patterns within the interview responses. The transcribed data were carefully reviewed and coded to extract meaningful themes related to the goals and objectives, selection and design of multimedia materials, integration with teaching methods, evaluation of effectiveness, benefits, challenges, and ethical and legal considerations of multimedia music teaching.

The Current Situation of Multimedia Application in Teaching Music Theory in Colleges and Universities in Dalian, Liaoning Province

The research findings indicated that multimedia music teaching is becoming increasingly prevalent in Dalian colleges and universities. Both music teachers and students reported using various multimedia materials, such as audio, video, text, images, animations, and interactive elements, to enhance music theory classes. The main purposes of using multimedia materials were to introduce musical concepts, demonstrate examples, facilitate activities, and enhance

motivation. The findings also highlighted the widespread use of online platforms and mobile devices to access multimedia materials, enabling individualized and collaborative learning experiences.

The Advantages and Disadvantages of Multimedia Application in Teaching Music Theory in Colleges and Universities in Dalian, Liaoning Province

The research revealed several advantages of multimedia music teaching, including improved understanding of musical concepts, enhanced application of knowledge and skills, increased engagement and enjoyment, and heightened interest and curiosity in music theory. Both music teachers and students rated multimedia materials positively in terms of meeting their learning needs and preferences. However, some challenges were identified, such as technical issues, content relevance, and potential distractions. The findings underscored the need for professional development for teachers and thoughtful material selection to optimize the benefits of multimedia music teaching.

The Factors Affecting the Multimedia Application in Teaching Music Theory in Colleges and Universities in Dalian, Liaoning Province

The research findings indicated that effective integration of multimedia materials with other teaching methods and strategies is crucial for successful music multimedia teaching. Music teachers reported using a combination of teacher-led, student-led, and collaborative approaches to interact with multimedia materials in music theory classes. The evaluation of effectiveness relied on various methods, including feedback from students and teachers, tests, surveys, and observations. The research also highlighted the importance of considering ethical and legal issues, such as copyright compliance and data privacy, when using multimedia materials.

In conclusion, this chapter presented the data collection methods, analysis, and research findings related to the value and effectiveness of music multimedia teaching in Dalian colleges and universities. The combination of quantitative and qualitative research methods provided a comprehensive understanding of the current state of multimedia music teaching, its advantages and challenges, and the factors influencing its application. The research findings offer valuable insights to inform the improvement and optimization of music multimedia teaching practices in the local context of Dalian.

Discussion

The findings regarding the current status of multimedia application underscore the transformative impact of digital tools on music education. The prevalence of multimedia materials indicates a shift toward dynamic and interactive pedagogical approaches, facilitating a deeper understanding of musical concepts (Fan, 2014 : 926-930). The identified advantages of multimedia application validate its potential in addressing the challenges of traditional music instruction. However, the recognition of challenges necessitates proactive measures, such as technological support and curriculum redesign, to mitigate any drawbacks and ensure optimal utilization. The significance of effective integration and evaluation strategies reinforces the need for pedagogical innovation (Wang & Li, 2018 : 368-371). Moreover, the ethical and legal considerations highlight the importance of responsible multimedia usage and the development of guidelines within educational institutions.

Recommendation

1. Practical Recommendations

Based on the research findings, it is recommended that Dalian colleges and universities embrace a multidimensional approach to music multimedia teaching. Faculty development programs should be designed to enhance educators' proficiency in integrating multimedia materials effectively. Additionally, institutional policies should be established to address ethical and legal dimensions, ensuring a responsible and compliant use of multimedia resources.

2. Recommendation for future research

To extend the understanding of music multimedia teaching, future research could explore the longitudinal impact of multimedia integration on long-term musical proficiency and explore the preferences and perspectives of students from diverse backgrounds. Moreover, comparative studies across different regions or countries could offer insights into the cross-cultural effectiveness of multimedia teaching methods.

In conclusion, this chapter synthesizes the research objectives, methodology, conclusions, and discussions to provide a comprehensive view of the implications of music multimedia teaching in Dalian colleges and universities. The recommendations put forth serve as valuable guidelines for both educators and policymakers, fostering the advancement of innovative and effective pedagogical practices. As the study contributes to the broader discourse on music education, it lays a foundation for further scholarly exploration in this evolving field.

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