Research on Innovative Methods of Dance Education from the Perspective of the New Media AI Era

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Abstract: In recent years, AI technologies represented by software such as ChatGPT and Deepseek have shown rapid development, attracting a large user base in a short period. People are constantly pushing the boundaries of cognition through AI, greatly meeting personalized needs in life, work, and learning. Against this backdrop, the thinking and methods of dance education are facing innovative reforms, requiring new educational approaches to promote the integration of AI and dance education. This paper first explores the impact of the multimedia AI era on dance education, then proposes several ideas for innovative approaches and measures to ensure innovative outcomes from the perspective of the new media AI era. It is hoped that the views and suggestions presented will provide valuable references for related fields.

Keywords: New Media; AI Era; Dance Education; Innovative Methods

1. The Impact of the Multimedia AI Era on Dance Education

Using multimedia AI technology in dance education can provide timely feedback on teaching quality, facilitate high-quality and frequent interactions between teachers and students, and achieve truly interdisciplinary integrated teaching. The continuously updated teaching resource library makes dance education more precise, personalized, and diversified, which is of great significance for improving teaching effectiveness [1]. Specifically, the intelligent transformation brought by AI to dance education includes the following aspects:

First, precise data analysis. AI systems can deeply analyze the data generated during students' learning processes, helping teachers accurately grasp each student's learning needs and skill levels, thereby providing customized teaching content, practice plans, and evaluation standards. This educational model enables students to master dance techniques more effectively in a shorter time, enhancing learning outcomes.

Second, timely teaching feedback. Teachers can use AI technology to capture students' dance movements in real time, compare them with preset standard movements, and obtain timely and accurate feedback, helping students correct mistakes and avoid forming bad habits, thereby improving learning quality.

Third, optimized learning experience. Dance education based on virtual reality (VR) or augmented reality (AR) technology can immerse students in realistic dance scenarios, enhancing their learning interest, dance perception, and spatial imagination.

Fourth, precise evaluation. AI can serve as an objective evaluation tool to quantify students' dance performance. Teachers can adjust teaching plans based on intelligent analysis results, making the teaching process more efficient and the outcomes more significant.

Fifth, promoting interdisciplinary integration. AI-based dance education can greatly expand the scope of teaching, fostering interdisciplinary approaches. For example, integrating music theory and anatomy into dance education allows students to acquire more knowledge related to dance, enhancing learning effectiveness.

Sixth, abundant learning resources. AI can continuously update and expand the teaching resource library, enabling teachers to access dance works, instructional videos, and academic papers based on students' actual needs, ensuring the timeliness and relevance of teaching content. Students can also retrieve various learning resources according to their personalized needs, broadening their

knowledge and horizons. Based on the above points, dance teachers should explore innovative educational measures by leveraging the positive impact of multimedia AI, striving to maximize teaching outcomes through AI empowerment [2].

2. Pathways for Multimedia AI Technology to Empower Dance Education Innovation

2.1 One-Click Generation of Personalized Teaching Plans

Each student has different physical conditions, dance foundations, learning progress, and comprehension abilities. Therefore, dance education is suitable for a "common teaching + personalized teaching" model, ensuring teaching progress while meeting the individual needs of each student. To this end, teachers can use AI learning analysis tools to accurately analyze students' specific situations and formulate personalized teaching plans. First, students' dance videos and classroom performance records can be uploaded to the AI system, which conducts professional data analysis to identify strengths and weaknesses. For example, it might point out that a student has issues with balance in spinning movements or lacks coordination in limb movements. Teachers can then input the analysis results into the AI dialog box to generate a personalized teaching plan with one click. Subsequently, teachers can fine-tune the AI-generated plan based on their understanding of the student, creating the most suitable training content and schedule, making teaching more targeted and humanistic, and helping each student grow at their own pace [3].

2.2 Optimizing Teaching Effectiveness Through Motion Capture

Many dance movements are fleeting during practice. If incorrect, incomplete, or non-standard movements are not captured in time, it not only hinders the improvement of students' dance performance but also leads to the formation of bad habits, which can have long-term effects on subsequent learning and performances. To address this, teachers can attach sensors to specific joints before students begin training. Using sensor technology, the speed, direction, and force of students' dance movements can be accurately captured, and a set of valid data can be collected. A virtual character can then reproduce the dancer's movements and trajectories without any blind spots. Since the virtual character's performance is almost indistinguishable from a real person, teachers can precisely identify shortcomings in students' dance movements and provide targeted personalized guidance. Additionally, AI can capture students' movements through cameras and compare them with standard movements in the database. If deviations are detected, it immediately provides voice prompts to remind students to correct their movements. For example, when practicing the five positions in ballet, AI can accurately point out deviations in toe angles or knee bending, acting like a tireless personal coach, accompanying students anytime and anywhere to enhance practice effectiveness. Furthermore, teachers and students can watch video replays at any time for targeted one-on-one guidance, enabling rapid improvement in dance skills and preventing the formation of bad habits.

2.3 Inspiring Artistic Creativity in Choreography

When students reach a certain level of dance proficiency, in addition to regular dance training, they may also engage in choreography, which is the most challenging aspect for teachers' creativity. To address this, teachers can use AI choreography assistance tools to open the door to creative choreography teaching. Teachers can input the theme, style, duration, and other basic requirements into the AI dialog box, select the most suitable elements from a vast library of dance movements, rhythms, and music, and then reorganize them to generate one or more choreography plans. It is recommended that teachers let AI generate multiple plans, which incorporate unique elements from different cultural backgrounds and dance styles. Teachers can use these plans as sources of inspiration, modifying, refining, or innovating upon them to create more innovative and appealing dance works. This approach not only reduces the difficulty of choreography but also stimulates students' enthusiasm, enhancing their artistic expression and creativity [4].

3. Measures to Ensure the Innovation of Dance Education Empowered by Multimedia AI Technology

3.1 Updating Teachers' Teaching Concepts and Mindsets

To innovate dance teaching based on multimedia AI, teachers need to embrace teaching philosophies such as "student-centered," "teaching according to aptitude," and "leading by example," while also possessing internet thinking, big data thinking, stratified teaching thinking, and innovative thinking. Only in this way can teachers effectively use AI technology to drive teaching innovation and ensure that the innovation outcomes and teaching goals meet modern educational needs, enabling students to acquire dance skills while developing high humanistic qualities and comprehensive abilities. It is recommended that teachers stay informed about developments in the education field and the changing demands for dance talent, regularly browse mainstream media websites, read relevant books, exchange experiences with other teachers, learn to operate various AI software, and continuously expand and update their teaching mindsets to ensure their advancement and timeliness.

3.2 Emphasizing the Development of Students' Autonomy

With the rapid development of AI technology, AI-assisted learning has become a powerful tool for independent learning. This is especially important for dance students, who require extensive independent practice. Therefore, when promoting teaching innovation, dance teachers should focus on cultivating students' "lifelong learning" and "independent learning" mindsets, enabling them to manage their time effectively and use AI technology for self-directed learning and training, thereby continuously improving their dance skills. To this end, it is recommended that teachers frequently offer praise and encouragement to students, help them establish ideals and beliefs, or create career plans. Through various approaches, teachers can stimulate students' internal motivation and ambition, maximizing the advantages of AI-assisted learning.

3.3 Clarifying the Functional Role of Multimedia AI

Using multimedia AI in dance education can introduce many new teaching elements and create diverse teaching models. However, it is essential to clarify the auxiliary role of multimedia AI and avoid over-reliance on it, which could lead to a situation where AI overshadows the teacher. For example, multimedia AI can be introduced when explaining complex movements, comparing non-standard movements with standard ones, or providing personalized instruction for students' issues. At other times, teacher-student interactions should remain the primary mode of teaching. Over-reliance on AI may prevent teachers from fully or promptly understanding students' development, and the unique humanistic qualities of dance art may diminish, hindering the improvement of students' artistic expression abilities [5].

4. Conclusion

In the context of the multimedia AI era, dance education has been infused with many new elements and vitality. For instance, teachers can use multimedia AI to generate personalized teaching plans with one click, ensuring "one plan per student" to meet individual development needs. AI can also capture students' movements, providing timely correction support to prevent the formation of bad habits. However, achieving these outcomes requires teachers to uphold advanced and scientific teaching philosophies and mindsets such as "student-centered," "teaching according to aptitude," and "big data analysis," ensuring that teaching directions and goals align with the needs of the new era. This enables students to acquire dance knowledge and skills while developing high core competencies. Although multimedia AI teaching is still in its early stages, it has already demonstrated powerful functional value across the education field. Therefore, teachers must balance the relationship between AI teaching and conventional teaching, clarifying the auxiliary role of AI teaching to maximize its support and contribution to the healthy development of dance education.

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