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Artificial Intelligence in Music Education

As technology advances, artificial intelligence has entered various fields, including music education. AI-powered tools can revolutionize how we teach and learn music. More software is emerging every day that helps teach music in different ways. Learning music well is essential when deciding to invest so much time and effort to do well. Artificial Intelligence influences new talents while being affordable as well as educational; it has gone through many changes throughout the pandemic that have helped create positive data, and it can be used in classrooms to inspire teachers as well as students to reflect on the musicality and humanity of a truly remarkable piece.

Artificial technology has existed for a long time, explicitly originating in the 1950s with the first mathematical 'thinking machines.' (Jiang) MIDI, short for Musical Instrument Digital Interface, first emerged in the 1980s. (Spieker, Koren) Digital media, since then, has skyrocketed in popularity and has touched almost all spheres of music. In recent years there have been many developments of new technology that have changed how music is taught and learned. The recent pandemic events have also launched the use of artificial intelligence to another level.

Music education has become more difficult to acquire as students face various challenges that could deter them from continuing their music education. Recently music education has been losing its romance as people begin to lose interest in learning music. By the time students are

seventeen, around half of them, quit music-related activities and lessons. As times change, so do the children; it is essential for students also to enjoy playing their instruments. Considering how much modern-day Gen Z students rely on cell phones, a new game that challenges them to pass levels and competes with friends can completely alter how they perceive music-making. (Haas) The author of this source, Bas de Haas, has a Ph.D. in music technology and created an app called Chordify that can create a whole new perspective on creating music and inspiring students to continue in their aspirations.

Though the benefits of learning how to play music are widely acknowledged, the number of people with access to these learning technologies is limited. According to The Arts Education Data Project, millions of U.S. students need access to music education. (Haas) As mentioned, the financial standpoint also has the opportunity to participate in music education. Having learning platforms that are easily accessible is another significant factor that can help those students who want to create a hobby that matches their time and financial pullbacks while still teaching valuable information.

Another thing that has helped change many teachers' perspectives about bringing more technology into their classrooms is the recent development of the pandemic. Research done in European countries like Romania, Netherlands, and Israel has shown that the online teaching and practicing of an AI-based software called Solfy has already changed and improved students' performances in subjects like music theory. The new software perfected during the pandemic was able to assign homework for students in primary education to access from home. Online tools like digital voice recognition, analysis, and processing evaluated students' performances at home and provided feedback on correctness. (Spieker, Korren) Not only was the software able to grade and analyze performances, but it also connected teachers and students from different

geographical locations. Teachers from small cities and villages in rural countries like Romania were provided the perfect opportunity to explore new learning styles and connect with more professionals. At the end of the pandemic, results of this software program showed improvement in the accuracy of responses, as well the number of enrolled students increased by twelve times higher, with seventy-five percent more active users. (Spieker, Korren) The pandemic forced people to use digital media to teach music online; afterward, some kept with the program. It became an educational learning experience that could make the best of the situation at hand while improving technological advancements.

It is essential to understand that teachers would reach students better when they embrace and involve the new technology in their coursework. After all, it is less likely for a student to use AI technology to write an essay when they are writing about AI cheating in schools. The accomplished Ph.D. professor of music, Mario Ajero, emphasizes how this new technology can be used in classrooms and how teachers should react. He mentions examples from his experience using AI technology to develop a poem. The poem rhymed and fit together. However, the information acquired was filled with facts, sometimes missing the artistic side of genuinely great poems. However, with some edits, the poem can adapt and improve. "At the same time, one must realize that the technology will only be as smart as the data it is fed. So if misinformation is part of that data, it will continue to utilize it until it realizes its inaccuracy." (Ajero) This evidence shows that though technology can come up with new ideas, sometimes it needs an extra hint to the right direction of perfection. Mario continues to say that teachers can instead move with the times and adapt to work with technology and music. Some examples he brings are assigning assignments where students must create a musical draft and then edit it to practice evaluation and

criticism skills to become better musicians. In this way, both sides can adapt to new learning strategies.

A popular counterargument to the greatness of artificial intelligence in music is that there is no possibility that music generated by a computer can capture the same feeling and expression that a true musician could. The article titled *Application of Artificial Intelligence Technology in Music Education Supported by Wireless Network* addresses the heart of the issue by acknowledging that although artificial intelligence has excellent resources to encourage new musical abilities, it may still have certain drawbacks. "Artificial intelligence can assist in teaching music knowledge and concepts in music teaching, but the sensual contents of music teaching, such as musical beauty and musical interest, still need teachers' guidance and infection." (Jiang) Other sources have also repeated that technology still needs to be perfected to develop humanity and expression fully; however, it is a significant resource for new learning styles. Another example is from Mario Ajero's children using technology that created a creative learning environment when they had bright accompaniments that prepared them for future orchestra performances. (Ajero) The article follows that statement: "The continued use of AI technology in the field of music education will encourage music educators to improve their expertise, acquire unique understanding, focus on humanistic concerns, and explore the ultimate significance of music instruction from a developmental standpoint." (Jiang) These examples illustrate how artificial intelligence may have some drawbacks but do not decrease students' knowledge. Sure, the technology may be missing some character; however, in the bigger picture, technology only advances a student's experience and helps explore new learning techniques. In summary, technology has been seen only to improve students' inspiration and knowledge to new lengths, it can bring more students the opportunity to try music without fear of finance or

location, and it can only increase occurrences in the future of musical classrooms. Music is something that has many cognitive benefits that should and can be encouraged through the use of artificial intelligence. When so many benefits can be found in the various applications and software out on the internet, it is hard to argue that technology is not improving our society. As times change, people change; now more than ever, we realize how many different learning styles are present and that they work differently for different people. Encouraging these new applications will only see everyone have a chance at their musical dreams.

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