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Diverse Attitudes Toward AI-Produced Music: A Case Study between Instrument Learners and Non-Instrument Learners in Yangtze River Delta Region

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Abstract:

Recently, with the gradual popularization of AI technology in music, AI music generation technology, as a tool, has triggered thoughts about the transformation of traditional music composition while enhancing the innovation and efficiency of music creation. This study aims to explore the different attitudes toward AI-generated music among instrumental and non-instrumental learners in the Yangtze River Delta region of China, so as to increase the knowledge of AI music composition technology. This study uses a questionnaire method to collect quantitative data, with semi-structured interviews as a qualitative supplement. It is found that most people are aware of AI music technology and express acceptance. The style, uniqueness, and quality of AI-generated works, as well as the convergence of the technology on traditional platforms, and copyright issues, are topics of concern. The differential impact of whether or not one has learned a musical instrument on attitudes towards AI music centers on personal preference. The low price of the service was a significant influencing factor for those who embraced the improved AI technology. In addition, instrumental learners placed more emphasis on the professionalism, artistry, and emotionality of AI music, while non-instrumental learners placed more emphasis on the technological convenience and affordability of AI music. This study helps to demonstrate the influence of instrumental learning experiences on people's attitudes towards AI music generation, and can provide inspiration for further exploration of music education research in cross-cultural contexts. Meanwhile, the emotional relationship and cognitive responses between humans and AI music can be revealed more.

Keywords: Musical Instrument Learner; Music AI; Attitude; Yangtze River Delta.

1. Introduction

Artificial Intelligence (AI) technology has evolved in the digital age. It is applied in all aspects of human society, including healthcare, finance, and education. In the field of artistic creation, AI technology offers more possibilities and opportunities for development.AI music platforms such as *Suno*, *Boomy*, and *Udio* are being developed, which can intelligently learn music harmonies, styles, and patterns to generate AI music. Simultaneously, AI technology can also assist human musicians in composing melodies, harmonies, or rhythms, improving creative efficiency. In addition, AI music is used in personalized services such as gaming, virtual reality, and content production, with powerful capabilities to adapt to user preferences and evoke empathy. Despite the growing use of AI music technology, the originality and copyright controversy of AI-generated music has raised public concerns. Currently, many scholars have studied the technology and impact of AI music generation. Some scholars have focused on advances in AI music technology. Scholars have found that because artistic creation emphasizes software flexibility, manual output control, and visual feedback, audio-based AI tools can assist composition more than MIDI tools [1]. Current AI compositions have resulted in deep learning algorithms that enable collaborative composition with authors around the world, especially in Europe and Asia [2]. With more publications on AI music, style assessment, enhanced human-AI collaboration, and emotion-aware generators are future research directions [3]. Other scholars focus on the impact of AI music generation technology. One study points out that AI music technology can help artists experiment with diverse styles and sounds, but may also limit human creativity and homogenize music [4]. People's attitudes towards the application of AI technology in the arts are relatively negative compared to the fields of medicine and real estate. Some people find the technology interesting and modern, but many others find it

strange and scary [5]. As can be seen, the current research on the attitudes of different groups of people towards AI music generation is relatively lacking. It is important to understand public attitudes and perceptions of AI music creation. It can enhance the researcher's knowledge of the attitudes of non-professional music creators and help expand the field of integrated applications of art and AI technology.

The purpose of this study is to explore the public's attitude towards AI music generation technology by considering whether people have had the experience of learning a musical instrument. In order to explore the influence of people's music learning experiences on attitudes toward AI music technology, this study uses questionnaire and interview methods to conduct an in-depth research study. In this study, the public is divided into two groups that have a music learning experience and no music learning experience for comparative study. The samples are mainly from the Yangtze River Delta region of China as it is a highly economically and technologically developed region where people tend to have more access to AI music technology. Through this study, it is possible to clarify public attitudes toward AI music generation technology, reveal the relationship between music learning experience and attitudes toward AI music, and make suggestions for promoting the development of AI smart music technology.

2. Methodology

2.1 Questionnaire

The questionnaire method is an important source for obtaining quantitative data. The researcher chose the public in the Yangtze River Delta region of China as the study population. According to whether the research subjects have the music learning experience or not, the research subjects were divided into two groups to compare the differences in their attitudes towards AI music production. The questionnaire covers people's familiarity, acceptance and personal preference towards AI music generation. The questionnaire is mostly multiple-choice, and different options express different opinions and preferences. In addition, the questionnaire used a Likert scale to measure people's different levels of acceptance. The survey was conducted in the form of an electronic questionnaire, which was distributed through an online platform. After screening, the authors recovered and got 116 valid questionnaires. Among them, 58 questionnaires were for instrument learners and 58 for non-instrument learners.

2.2 Semi-Structured Interview

Semi-structured interview is the other important data source for this study. The semi-structured interview will be adopted. It combines a set of predefined open-ended questions to guide the interview and additional unplanned questions arise during the interview to follow up on interesting or unexpected responses. The semi-structured interview provides flexibility for interviewers to deepen the exploration of interviewees' valuable insights. It encourages detailed responses and balancing structure and spontaneity, enriching the qualitative data. It is adaptable in real-time to suit various contexts and respondents, allowing for clarification and probing, enhancing the quality of collected data. Results of interviews are generalized into main points, which can support the results of quantitative data or offer more details or new perspectives compared to data from questionnaire. In this way, the research will be more comprehensive and scientific. A total of four residents in the Yangtze River Delta region of China were interviewed for this study. Among them, two were instrumental learners and two were non-instrumental learners. All interviewees were informed of the purpose and use of this study, and interviewee information will be anonymized. The per capita length of the interviews for this study was 2 hours, and the number of words recorded in the interviews was 3257 words. The content of the interviews varied depending on whether the respondent had learned a musical instrument or not. For instrumental learners, the interviews focused on understanding the impact of the music learning experience on the respondent's perception of originality in AI music. For non-instrumental learners, the interviews mainly explored the interviewees' attitudes towards AI music generation.

3. Results

According to whether to learn a musical instrument, the public can be divided into two categories. Through comparative research, it is found that people who have learned musical instruments and people who have not learned musical instruments have different attitudes towards artificial intelligence music generation.

3.1 Familiarity with AI Music among Instrument Learners and Non-Instrument Learners

There was a remarkable difference in familiarity with AI-generated music between instrumental and non-instrumental learners. It is clear that instrumental learners know more about AI music generation. As shown in Figure 1,

83% of the instrumental learners interviewed were aware that AI technology could be used to generate music. In contrast, only 57% of the non-instrumental learners interviewed were aware of this fact.

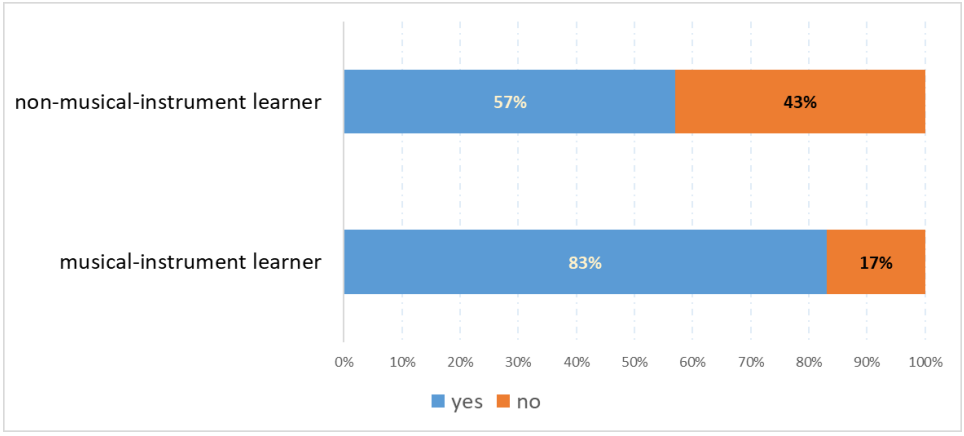

Fig. 1 Respondents' familiarity with AI music generation

3.2 Acceptance of AI Music by Instrument Learners and Non-Instrument Learners

The survey found that the majority of people tend to accept AI-generated music regardless of whether they have experience learning an instrument or not. There are many reasons why these people support AI music generation. For example, they believe that AI-generated music is characterized by stylistic diversity and helps to enhance creativity. In addition, AI technology can speed up the music creation process and has lower cost and higher efficiency.

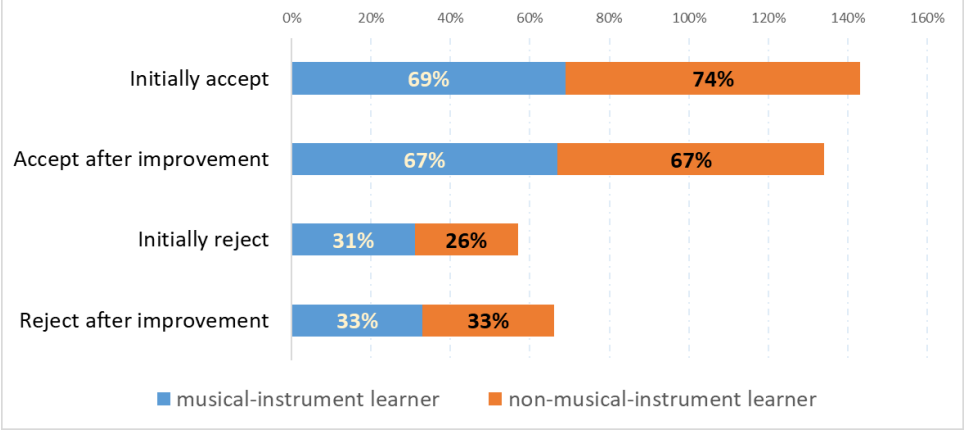

Fig. 2 Respondents' acceptance of AI music generation

However, as Figure 2 shows, 31% of instrumental learners and 26% of non-instrumental learners do not accept AI music technology. This group holds opposing views, mainly because AI music lacks humanity and emotion, is weak in originality, and lacks artistic value. When asked how AI music generation technology could be improved to enhance acceptance, 33% still said it was unacceptable. 67% of the opponents said they could accept improved AI music generation technology. As for the direction of improvement, these people believe that the uniqueness of music should be enhanced, the user's initiative should be expanded, and the copyright and legal protection should be clarified.

3.3 Preferences for AI Music among Instrument Learners and Non-Instrument Learners

Preferences for appreciation of AI-generated music were much the same for most instrumental and non-instrumental learners. Since preferences were based on acceptance of AI music, only respondents who accepted AI music initially and those who were willing to accept improved AI music technology are discussed here.

Specifically, all respondents who were willing to accept AI music were significantly more likely to use the free version of AI music software. For the high-priced version of the AI music product, no non-instrumental learners were willing to use the improved AI music product among those willing to accept it. For instrumental learners and non-instrumental learners who had initially embraced AI

music, only 6.8%of their instrumental learners and 7.7% of their non-instrumental learners were willing to use the high-priced version of the product, which can be shown in Figure 3.

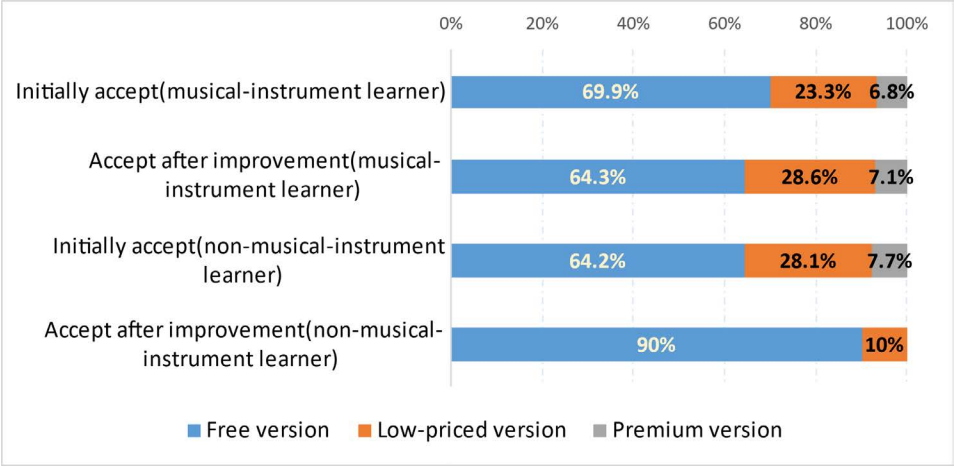

Fig. 3 Respondents' preference for the price of AI music products

For the features of the AI music platform, the quality and variety of music are the most important elements for all groups of respondents, accounting for more than 70%. In addition, instrumental learners pay more attention to personal customization features. Non-instrumental learners place more importance on the ease of use of the user interface and the cost-effectiveness of the product.

Expectations for AI music generation varied considerably in the views of different groups. In the group that originally embraced AI music, instrumental learners considered issues of style, copyright and personalization of music to be more important. Non-instrumental learners, in contrast, were more concerned with the creativity of the AI technology, the listenability of the work, and the fact that the product was free. In the group that received improved AI music technology, instrumental learners expected more creativity, instrumentality, and emotionality of the work. Non-instrumental learners valued the professionalism of the work in addition to creating.

3.4 Attitudes of instrumental Learners and Non-Instrumental Learners towards AI Music

Regardless of whether or not one has experienced instrumental learning, people have various views on AI music generation. Among them, instrumental learners emphasize more on the limitations of AI's inability to replace human creativity, while non-instrumental learners recognize more the objective advantages of AI music generation on a technical level.

Instrumental learners believe that while AI music generation is useful in producing less demanding commercial music and efficiently motivating creators, AI cannot replace human input in higher levels of artistic creation. For example, Interviewee A noted that AI-generated music is raw and lacks originality and emotional depth. This could homogenize musical styles or aesthetics to the detriment of artistry. Interviewee B felt that this technology, if used for commercial purposes, would degrade the quality of music. Another interviewee conceded the technological advantages of AI music generation in mimicking certain musical styles or effectively generating ideas, but felt that it lacked human emotion and attention to compositional detail.

Non-instrumental learners admit the shortcomings of AI music generation technology in terms of its lack of creativity and emotional depth in composing, but unanimously agree on its outstanding technical advantages in composing efficiently. Some interviewees noted that AI-generated music is a mechanical combination of existing compositions or songs and lacks real innovation. Listeners who are aware that the music is AI-generated may experience some psychological and emotional barriers. Nevertheless, while this technology may threaten professional music creators, it benefits amateur creators by effectively assisting musicians with basic arranging work, providing creative inspiration, thus increasing creative efficiency.

4. Discussion

4.1 Analysis on the Public's Familiarity with AI Music Generation

It is found that music learning experiences bring some influence on people's perception of AI music generation. Such effects show different strengths in different aspects. In terms of familiarity, most instrumental learners were aware of AI music generation technology. Instrumen-

tal learners are more familiar with AI music generation than non-instrumental learners because music learning experiences may increase interest in music learning and access to this information. However, non-instrumental learners are much more receptive overall. This may be explained by the interviews: Music learning experiences make people more attentive to the subtle emotions conveyed by musical compositions and songs, and they are more inclined to think that human ideas in composing are unique and complex, which is difficult for AI to imitate. In contrast, for individuals without a music learning experience, feelings about the stories and emotions contained in musical compositions may be less sensitive, and thus they are more receptive to the technology. In both groups, the acceptance of the technology because of the creativity and variety of the generated works and the efficiency of the composition shows the expectation of AI music generation. However, non-instrumental learners chose "innovative and unique pieces" at a higher rate, possibly due to a lack of musical training and a lack of sensitivity to musical detail and quality.

4.2 Analysis on the Public's Acceptance with AI Music Generation

In terms of acceptance, all interviewees reject the technique because of its lack of humanity, emotion, originality and low artistic value. On the one hand, non-instrumental learners are more reluctant to accept this technology. They reject this technology mainly because they value the uniqueness of the generated works more to increase the authority of user control and strengthen the clear copyright protection of AI-generated works. On the other hand, there are still a large percentage of respondents who are unable to accept AI music technology, which suggests an underlying stereotype. That is, music creation requires human intellect and cannot be completely replaced by the calculations and analysis of AI models. Therefore, it is necessary to improve the quality of the generated works and to promote them more so as to increase the likelihood of changing the current impression of these people.

4.3 Analysis on the Public's Preference with AI Music Generation

In terms of preferences, people have different views on the price, features and expectations of AI music generation. Specific views can be articulated in the following three areas.

Firstly, there is clearly a high degree of consistency in attitudes and expectations regarding the price of AI music products. Looking at the price preferences of both groups of interviewees, the vast majority of people are more comfortable with the free version. It is noteworthy that non-music learners who are willing to accept improved AI music technology are more likely to be influenced by the price factor. Not being initially receptive to AI music, this group has relatively low expectations of AI music generation. As a result, in comparison to emphasize the quality of music generation, they are more likely to be attracted by the low, economical price of the service.

Secondly, the study found that factors such as music learning experience and initial attitudes toward AI music technology did not influence people's preference for AI-generated music features. Regardless of initial acceptance of AI music technology, people highly value the space for personal customization. For instrumental learners, the fact that their musical training experience increased their sensitivity to music quality and strengthened their professional appreciation made them value the personal customization feature more. For non-music learners, personal customization options also became important because of individual differences in musical tastes. The above analysis suggests that keeping prices low and diversifying features is a viable way to attract more consumers.

Thirdly, expectations for AI music generation are relatively consistent. Both groups of respondents wanted to enhance the stylistic diversity, uniqueness, and quality of AI-generated works. Meanwhile, a call is also made to focus on solving the copyright issues of AI-generated works and to promote the integration of AI technology with traditional compositions. By providing technical support for traditional digital composition platforms through AI technology, composers can utilize AI to comb through a variety of music, test the feasibility of various ideas, and improve compositional efficiency. Yet, efficient composition does not equal high quality, and a large amount of poor-quality AI music could pose a potential threat to ordinary composers. Interviewees indicated that AI music technology may be better suited for making money for a living than for creating real works of art. In addition, the public has yet to reach a consensus on the copyright of the work, whether it should be attributed to the new work generated or the work being borrowed.

5. Conclusion

In summary, music learning experience as a factor has diverse effects on people's understanding and acceptance of AI music generation. On the one hand, owning an instrumental learning experience may enable people to acquire a higher sensitivity to musical emotions and details, which reduces their acceptance of AI music technology. On the other hand, what is least influenced by instrumental learning experience is people's agreement that AI music is stylistically diverse and technical. In addition, instru-

mental learners pay more attention to the originality and artistic value of AI music, while non-instrumental learners value the technical advantages. Regardless of whether one learns an instrument or not, there is a general consensus that AI music should improve uniqueness, user-drivenness, and copyright protection. In terms of the reasons affecting the acceptance of AI music, the lack of humanity, originality and artistic value of AI music is an important reason for the rejection attitude. In terms of improvement methods, increasing the uniqueness and user control of AI-generated works, and clarifying the copyright boundaries for AI-generated musical works can significantly raise the acceptance of AI music generation. In addition, increasing the space for personal customization and keeping the price low and economical are also necessary tools. In conclusion, this study aims to promote people's awareness of AI music creation technology through the combination of art and technology, and to provide some inspiration for the development of AI music generation technology. In the future, the research perspective can be expanded to a wider range of regions and different cultural areas to carry out cross-national comparative analysis. In addition, it can also delve into the economic, social and political aspects to analyze the socio-emotional and cultural factors that affect the popularity of AI music technology.

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