## RESEARCH ARTICLE

# AWARENESS OF MUSIC COLLEGE STUDENTS ON USING ARTIFICIAL INTELLIGENCE IN MUSIC EDUCATION

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## ABSTRACT

Artificial intelligence has become a most discussed term with the advent of technology, especially in this digital era. It is the ability of a computer or any other computer-controlled device to perform tasks that needs the application of intelligence like a human. The application of AI is seen in almost every aspect of human life, and education is no exception. This study intended to know the awareness of students studying in music colleges on the application of AI in music education. The study was conducted by taking a sample of 149 from different music colleges in Kerala and collecting data using an awareness test. The differential effect of gender and stream of study (vocal/instrumental) were analyzed.

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## INTRODUCTION

Artificial Intelligence (AI) is a blooming technological aspect that can make vivid changes in our life, social interaction, education, work condition, etc. It is the ability of a computer or any other computer-controlled device to perform tasks that needs the application of intelligence like a human. (UNESCO,2019). The application of artificial intelligence is seen in almost every field. Computergames werethe beginning of the application of Artificial intelligence. In education, artificial intelligence is also bringing innovations in teaching and learning. AI can be applied to enhance the quality of education and thus can improve the learning outcome. AI can be effectively used for personalizing education. In this digitally competent world, the education sector must also go with the change and reframe the curriculum apt for a digital world empowered by Artificial Intelligence. Pre-service and in-service trainingmust be arranged to enable the teachers to handle the AI-oriented curriculum.

*Background of the Problem:* The history of education remembers teachers lecturing with a blackboard and chalk as supplementary material. Advancements in years bring drastic progress in the teaching-learning process. Education always tries to go hand-in-hand with technological and scientific development. A drastic change in the classroom situation occurred with the sudden spread of the coronavirus throughout the world. India has been one of the most affected countries. The education sector adapted suddenly to this situation- offline classes became utterly online. Teachers, learners, and parents, as well as the other officials/administrators of this field, were not fully equipped to face this situation but were managing to go with this situation. Many more innovations are being carried out to make online learning perfect, achieving the goal of equity, universalization, and quality education for all. Artificial intelligence's application in music education is also seen vividly in recent years. It helps to personalize the education more. Artificial intelligence can make the classroom intelligent and help the students find pleasure in learning (Guan & Ren, 2021). While discussing the music field, we can see a trend in the application of AI in recent years. In this COVID-19 situation, where classes suddenly turned out to be completely online, "Does AI application reach more to music education?" is essential. It requires more inquiry.

*Statement of the Problem:* The researcher intended to find out how much the students in music colleges know about the application of artificial intelligence in music education. Therefore, the study is titled "Awareness of Music College Students on Using Artificial Intelligence in Music Education."

**Objectives of the study**

The following objectives were formulated for the study:

1. To find the level of awareness of music collegestudents on using Artificial Intelligence in the music education
2. To find whether there exists any significant difference in the awareness of music collegestudents on using Artificial Intelligence in music education for the sub-samples classified based on
   a) Gender (Female/Male)
   b) Stream of study (Instrumental/Vocal)

**Hypothesis of the Study**

1. Music college school students differ in their level of awareness of using Artificial Intelligence in music education
2. There exists no significant difference in the awareness of music college students on using Artificial Intelligence in music education for the sub-samples classified based on
   a) Gender (Female/Male)
   b) Stream of study (Instrumental/Vocal)

# MATERIAL AND METHODS

The study followed the normative survey method. Data was collected with the help of an awareness test on using artificial intelligence in music education which was developed and standardized by the investigator following the guidelines and suggestions followed by the experts in these fields. A sample of 149 students from different music colleges in Keralawas selected for this study. The data collected were tabulated and employed for statistical analysis to test the formulated hypothesis. Descriptive statistics, percentage analysis, and independent sample *t-tests*were employedto get a fruitful output for this study.

# RESULTS AND DISCUSSION

The data collected were made undergone preliminary analysis to know whether the data attained the feature of normality.

*Preliminary analysis of the data:* Table 1 shows the result of descriptive statistics of the scores of Awareness of students of the application of AI in music education.

**Table 1. Summary of the Descriptive Statistics of the Scores of Awareness of Music College Students on the Application of Artificial Intelligence in Music Education**

| $N$ | $M$ | $M_{dn}$ | $M_o$ | $SD$ | $S_k$ | $Ku$ |
|-----|-----|-----|-----|-----|-----|-----|
| 149 | 11.87 | 12.00 | 12.26 | 2.61 | -.339 | -.057 |

As per Table 1, the mean, median, and mode of the awareness of the music students on AI application in music education is 11.87, 12.00, and 12.26. The standard deviation is found to be 2.61. The values of skewness and kurtosis are -0.339 and -0.057, respectively.

**Discussion:** The scores of measures of central tendency are almost equal. The value obtained for standard deviation shows that the data is not so scattered. The value of kurtosis denotes that the distribution is slightly platykurtic in nature. The mean value is below half of the test's total score, which can be inferred that the music students are not much aware of the application of AI in music education. Figure 1 shows the graphical representation of the distribution of the data obtained.
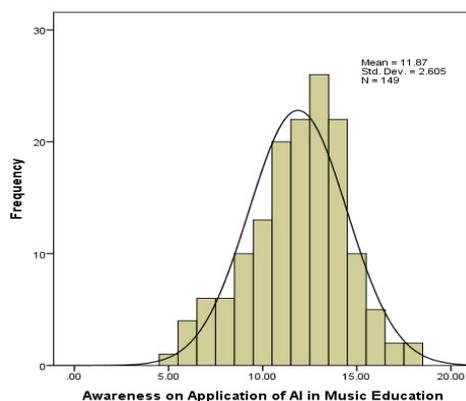


**Figure 1. Graphical Representation of College Students' Awareness of Using Artificial Intelligence in Music Education**

**Table 2. Number and Percentage of College Students Falling Into the Three Groups of Awareness of Artificial Intelligence (High, Average, and Low)**

| Variable | Group | Score | $n$ | % |
|-----|-----|-----|-----|-----|
| Awareness | High | $\geq 14.48$ | 19 | 18.12 |
| | Average | 14.48 – 9.27 | 103 | 69.13 |
| | Low | $\leq 9.27$ | 27 | 12.75 |
| | Total | | 149 | 100.00 |

One hundred forty-nine students were taken as the sample for this study. From this, 19 students fall into the *high* group (18.12%), 103 intothe *average* group (69.13%), and 27 fall into the *low* group (12.75%).

# DISCUSSION

The percentage analysis results show that the level of awareness of music college students on the application of AI in music education differs. The students fall into three categories – high average, and low. Internet access, other technological devices, interests, and attitudes may be different for the students, and this may be the reason for the difference in the awareness level of the students. A graphical representation of the students' different levels of awareness of the students is depicted in Figure 2.
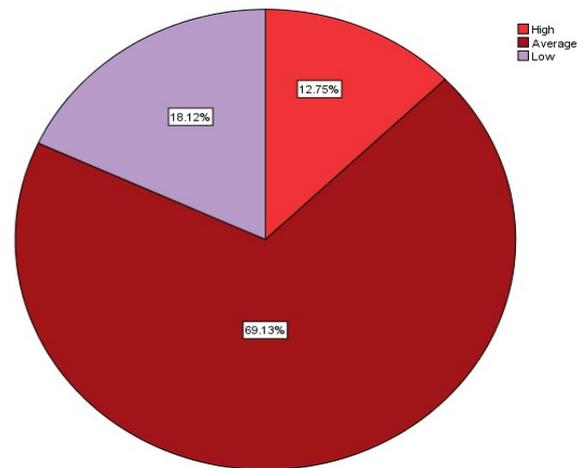


**Figure 2. Level of Awareness of Music College Students on Using Artificial Intelligence in the Music Education**

**Significance of difference in the awareness of music college students onusing Artificial Intelligence in music education for the sub-samples - gender (Female/Male) and stream of study (Instrumental/Vocal):** An Independent sample *t*-test was employed to know the significance of differences based on gender and stream of study. The result is summarized in Table 3.

**Table 3. Test of Significance of Difference in the Mean Scores of Awareness of Music College Students on Using Artificial Intelligence in Music Education for the Sub-samples classified based on Gender and Stream of Study**

| Sub-Sample | | $n$ | $M$ | $SD$ | $t$ | $p$ |
|-----|-----|-----|-----|-----|-----|-----|
| Gender | Female | 80 | 11.71 | 2.78 | 0.806 | 0.421 |
| | Male | 69 | 12.06 | 2.39 | | |
| Stream | Instrumental | 75 | 11.72 | 2.53 | 0.718 | 0.474 |
| | Vocal | 74 | 12.03 | 2.69 | | |

The *t* value obtained for the test of significance of the difference in the mean scores of awareness of music students on using artificial intelligence in music education for the subsample classified based on gender is 0.806, which is less than the table value 1.96 at a .05 level of confidence. That means the difference is not significant. The critical ratio for the test of significance of the difference in the mean

score of awareness of music students on using artificial intelligence in music education for the subsample classified based on their stream is 0.718 ($p = 0.474$). The critical ratio obtained is less than the table-valued 1.96 at a .05 level of confidence; hence the difference is not significant.

# DISCUSSION

The result shows that gender or the stream of study does not have any differential effect on the music students' awareness of the use of artificial intelligence in music education.

**Findings of the Study:** From the analysis of the data by the formulated hypothesis, the researcher came to the following findings:

1. The awareness level of the students on the use of artificial intelligence in music education is different. The majority of the selected sample falls into the average group. Even though, while analyzing the mean score of the total sample, it was found that the students are not much aware of the AI application in music education, as the mean score is less than half of the test's total score.
2. No significant difference exists in the awareness of female and male music college students on using artificial intelligence in music education.
3. The awareness of the students studying instrumental music and those studying vocal is not significantly different.

*Educational Implications:* The application of AI has become one of the most discussed subjects in all fields, including the educational sector. Our education system must also go along with the new trends and technologies. Only then should our future generation be able to face the challenging world confidently. The study shows the need to introduce more on the application of AI in music education and music production to our students. The curriculum should be reframed to meet the new trends. Teachers of music colleges should have to be given in-service training on the advancement in technological applications in music.

**Author Contributions:** The author is the only contributor of this work and permits for publication.

**Declaration of Interest:** The author declares that the author does not have any competing interest.

**Data Availability:** The data can be made available on request.

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